Energy Tidbits

G20 "*critical to assess … macroeconomic impact of both the physical impact of climate change and transition policies, including on growth, inflation, & unemployment*"

Produced by: Dan Tsubouchi

September 10, 2023

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https://adnocgas.ae/en/News-and-Media/Press-Releases/2023/Agreement-with-PetroChina-International-Co

- September 07, 2023 Abu Dhabi, UAE

ADNOC Gas Signs $450-550 Million LNG Supply Agreement with PetroChina International Co., Ltd.

Agreement underscores ADNOC Gas' growing global presence, particularly in the East and South Asian markets

Natural gas is a crucial transitional fuel, with lower carbon emissions compared to other fossil fuels, and ADNOC Gas is committed to ensuring reliable supply to its customers

Abu Dhabi, UAE – September 7, 2023: ADNOC Gas plc ("ADNOC Gas" or the "Company"), a world-class integrated gas processing company, today announced an agreement, valued between $450 million (AED1.65 billion) and $550 million (AED2 billion), to supply Liquefied Natural Gas (LNG) to PetroChina International Company Limited ("PetroChina" or "PCI"), a subsidiary of PetroChina Company Limited, one of the leading oil and gas producers and distributors in China.

This agreement underscores ADNOC Gas' growing global presence, particularly in the East and South Asian markets. Natural gas plays a crucial role as a transitional fuel, generating lower-carbon emissions compared to other fossil fuels, and ADNOC Gas is committed to ensuring reliable supply to its customers around the world.

Ahmed Mohamed Alebri, Chief Executive Officer of ADNOC Gas, said: "We are pleased to sign this LNG supply agreement with PCI, further strengthening our presence in one of the world's fastest growing gas markets. China continues to be a key market for ADNOC Gas, and this agreement further reinforces our role as a major LNG supplier across East and South Asia, and beyond."

LNG serves as an important raw material in industrial value chains and its versatility allows its application across a broad range of industries, fostering economic growth.

Commenting on the agreement, Wu Junli, Chairman of PCI, said: "Energy is an important area of collaboration between China and the UAE. We are delighted to partner with ADNOC Gas, a company committed to providing stable and reliable energy supply with low-carbon emissions. This agreement signifies an extension of the cooperation between our two companies and reaffirms PCI's commitment to ADNOC Gas as our global partner."

This agreement follows several significant international LNG sales agreements, including those with Japan Petroleum Exploration Co., Ltd. (JAPEX), TotalEnergies Gas and Power, and India Oil

Corporation (IOCL), underscoring ADNOC Gas' position as a global export partner of choice.

ADNOC Gas continues to leverage opportunities arising from ADNOC's integrated gas masterplan, which links every part of the gas value chain in the UAE, ensuring a sustainable and economic supply of natural gas to meet local and international demand.

# # #

About ADNOC Gas

ADNOC Gas, listed on the ADX (ADX symbol: "ADNOCGAS" / ISIN: "AEE01195A234"), is a world-class, large-scale integrated gas processing company operating across the gas value chain, from receipt of raw gas feedstock from ADNOC through large, long-life operations for gas processing and fractionation to the sale of products to domestic and international customers. ADNOC Gas supplies approximately 60% of the UAE's sales gas needs and supplies end-customers in over 20 countries. To find out more, visit: www.adnocgas.ae.

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About PetroChina International Company Limited (PCI)

PetroChina International Co., Ltd. (PCI) is a 100% owned subsidiary of PetroChina. As the international trading arm of PetroChina, PCI undertakes global commodities trading, development of overseas integrated oil and gas operation hubs comprising refining, storage, logistics and sales & marketing capabilities, as well as the management of oil terminals and storage facilities at China's key international trading ports. With 40+ subsidiaries and branches in more than 20 countries, PCI has business coverage in all key oil and gas trading hubs and financial centres around the world.

WEATHER CLIMATE WATER

WORLD METEOROLOGICAL ORGANIZATION

GLOBAL SEASONAL CLIMATE UPDATE

TARGET SEASON: September-October-November 2023

Issued: 26 August 2023

Summary

During May-July 2023, the Pacific Niño sea-surface temperature (SST) index in the eastern Pacific (Niño 1+2) was much above-normal and the other three indices in the central Pacific were also positive. The observed SST conditions in the equatorial Pacific were characterized by a weak El Niño state. The Indian Ocean Dipole (IOD) was near normal. The North Tropical Atlantic (NTA) and the South Tropical Atlantic (STA) SST indices were also positive and reflected widespread warmth in the tropical Atlantic north of the equator.

Above-normal sea-surface temperature anomalies in the Niño 3.4 and Niño 3 regions are predicted to amplify during the September-November (SON) 2023 season, indicating the development of moderate to strong El Niño conditions. Farther west in the Niño 4 region, the sea-surface temperature anomaly is also predicted to be above-normal. The Indian Ocean Dipole (IOD) index is also predicted to be above-normal in SON 2023. In the equatorial Atlantic, SSTs are predicted to be above-normal in both the northern (NTA) and the southern (STA) areas during the season.

Consistent with the anticipated development of an El Niño in the equatorial central and eastern Pacific, together with the prediction of above-normal sea-surface temperatures over much of the global oceans, there is widespread prediction of above-normal temperatures over almost all land areas. Positive temperature anomalies are expected over almost the entire Northern Hemisphere except for a maritime area off the south-west coast of North America that extends into the central Pacific at about 20° N. The largest increase in probabilities for above-normal temperatures in the Northern Hemisphere is predicted generally south of about 40° N, and also over parts of Central and East Asia, north-eastern parts of North America. Elsewhere in the Northern Hemisphere, including Europe, Greenland, Asia north of about 45° N, and in North America north of about 30° N, the probabilities for above-normal temperature are moderately increased. There are also enhanced probabilities for above-normal temperatures over most of the Southern Hemisphere, except for the areas bordering the eastern tropical Indian Ocean, and southeast Pacific between 120 and 70° W where probabilities for below-normal temperature is enhanced. Over most other Southern Hemisphere land areas north of about 30° S, the probabilities for above-normal temperature are strongly increased. However, over Australia, New Zealand, and over the central and eastern Pacific Ocean islands south of about 20° S the probabilities for above-normal temperatures are only weakly increased. There is no clear signal over South America south of about 35° extending to the southern tip of the continent.

Predictions for rainfall are similar to some of the canonical rainfall impacts of El Niño, which is expected to strengthen in SON 2023. Probabilities for above-normal rainfall are enhanced over a narrow band along and just north of the equator from 150° E extending across the equator to the west coast of South America. Across most of the Pacific Ocean south of about 30° N, and immediately to the north of the wet band, rainfall is predicted to be below-normal. South of the equator and east of the Maritime continent, an area of strong enhancement in below-normal rainfall extends into the Indian Ocean to about 60° E and is consistent with the prediction for the positive phase of the IOD. This area of below-normal rainfall extends southeast towards the western coast of Australia, where it further extends eastward towards Tasmania. East of the Maritime continent, an area of below-normal rainfall extends towards the southeast to the Date Line where it curves southwestward towards the southeast coast of Australia. The probability for below-normal rainfall is also weakly enhanced over much of Australia, and in the middle of the Indian subcontinent. The probability for above-normal rainfall is enhanced in Southeast Asia and extends westward along the Indian Ocean north of the equator towards the eastern coast of Africa and into the Greater Horn of Africa. There is a weak enhancement in the probability of above-normal rainfall over most of western and northern Africa, the Arabian Peninsula, central and northern Asia, parts of eastern Asia, and northern Caribbean. Over North America, a weak enhancement in the probability of above-normal rainfall is predicted over the northwest while the probability for below-normal rainfall is enhanced in the southwest. The probability for below-normal rainfall is enhanced across much of the northern part of South America north of about 25° S, southern parts of Central America and the southern Caribbean. The probability for above-normal rainfall is enhanced in South America below 30° S, however, over the extreme southern tip of the continent the probability for below-normal rainfall is enhanced and extends westward along 55° S to about 120° W.

Surface Air Temperature, SON 2023 **Precipitation, SON 2023**

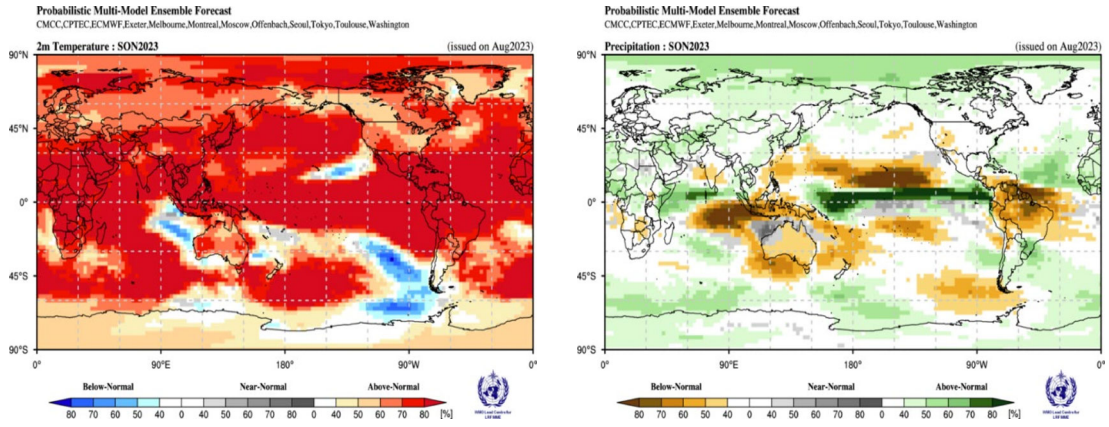


Figure 1. Probabilistic forecasts of surface air temperature and precipitation for the season September-November 2023. The tercile category with the highest forecast probability is indicated by shaded areas. The most likely category for below-normal, above-normal, and near-normal is depicted in blue, red, and grey shadings respectively for temperature, and orange, green and grey shadings respectively for precipitation. White areas indicate equal chances for all categories in both cases. The baseline period is 1993–2009.

1. Observations: May-July 2023

In the following sections, observed temperature and precipitation patterns for the previous season are discussed. For more detailed information about regional and local climate anomalies, the reader is referred to the concerned WMO Regional Climate Centres (RCCs) or RCC Networks, listed in Section 5.

1.1 Large-scale sea-surface temperature (SST) indices

During May-July 2023, the Pacific Niño sea-surface temperature (SST) index in the eastern Pacific (Niño 1+2) was much above-normal and the other three indices in the central Pacific were also positive. The observed SST conditions in the equatorial Pacific were characterized by a weak El Niño state. The Indian Ocean Dipole (IOD) was near normal. The North Tropical Atlantic (NTA) and the South Tropical Atlantic (STA) SST indices were also positive and reflected widespread warmth in the tropical Atlantic north of the equator.

Month	Niño 1+2	Niño 3	Niño 4	Niño 3.4	IOD	NTA	STA
May 2023	2.0	0.9	0.3	0.5	0.0	0.8	0.6
June 2023	2.6	1.2	0.6	0.9	-0.1	1.3	0.3
July 2023	3.2	1.6	0.7	1.1	0.1	1.3	0.3
May - July 2023	2.6	1.2	0.6	0.8	0.0	1.2	0.4

Table 1. Large-scale oceanic indices (°C). Anomalies are with respect to the 1991–2020 average. (*Source:* U.S. Climate Prediction Center)

2. Potential evolution of the state of the climate over the next three months (September - November 2023)

2.1 Large-scale SST-based indices, September - November (SON) 2023

Month	Nino 1+2	Nino 3	Nino 4	Nino3.4	IOD	NTA	STA
September 2023	2.8±0.4	2.1±0.3	1.2±0.2	1.7±0.3	1.0±0.2	1.1±0.2	0.4±0.2
October 2023	2.4±0.5	2.2±0.3	1.4±0.2	1.9±0.3	1.1±0.2	1.0±0.1	0.4±0.2
November 2023	2.2±0.5	2.3±0.3	1.5±0.3	2.1±0.3	0.9±0.3	1.0±0.1	0.5±0.2
September – November 2023	2.6±0.5	2.2±0.3	1.3±0.2	1.8±0.3	1.0±0.2	1.0±0.1	0.4±0.2

Table 2: Multi-model forecasts for oceanic indices (°C), with standard deviation. Values are the equal-member-weighting average of those derived, using each GPC model's own hindcast climate mean, from the GPCs supplying SST forecasts (GPC Beijing, CMCC, ECMWF, Exeter, Melbourne, Montreal, Offenbach, Seoul, Tokyo, Toulouse, Washington). The standard deviation is calculated on all ensemble members. The latitude/longitude bounds of the regions are given in the supplementary information section.

Observed sea-surface temperatures in the central tropical Pacific were characterized by a weak El Niño state during May-July 2023. Above-normal sea-surface temperature anomalies in the Niño 3.4 and Niño 3 regions are predicted to amplify during the September-November (SON) 2023 season, indicating the development of moderate to strong El Niño conditions. Farther west in the Niño 4 region, the sea-surface temperature anomaly is also predicted to be above-normal. The Indian Ocean Dipole (IOD) index is also predicted to be above-normal in SON 2023. In the equatorial Atlantic, SSTs are predicted to be above-normal in both the northern (NTA) and the southern (STA) areas during the season.

2.2 Predicted temperature, September - November 2023

For information on the construction of the multi-model forecast maps, refer to the supplementary information section. (Note: Maps indicating forecast consistency among GPC models are available in the supplementary information[1]).

[1] File with supplementary information can be downloaded from https://ftp.cpc.ncep.noaa.gov/mingyue/GSCUWMO/Forecasts/GSCU_SON2023_supplementary_info_LC-LRFMME.docx

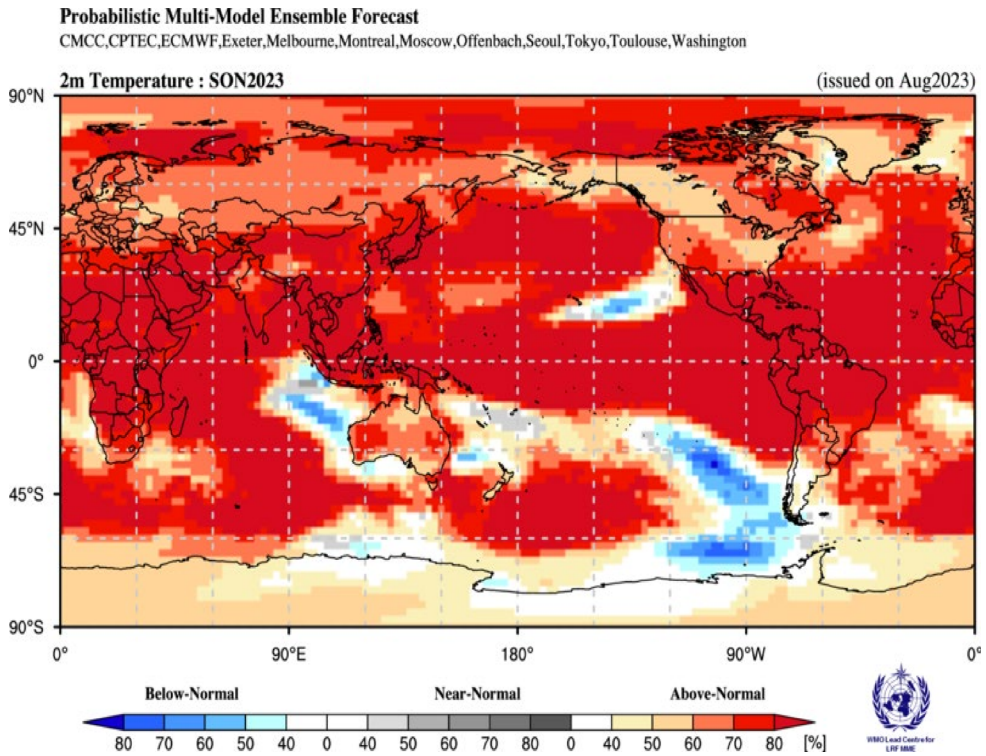


Figure 4. Probabilistic forecasts of surface air temperature for September-November 2023. The tercile category with the highest forecast probability is indicated by shaded areas. The most likely category for below-normal, above-normal, and near-normal is depicted in blue, red, and grey shadings, respectively. White areas indicate equal chances for all categories in both cases. The baseline period is 1993–2009. Figure is generated by The WMO Lead Centre for Long-Range Forecast Multi-Model Ensemble.

Consistent with the anticipated development of an El Niño in the equatorial central and eastern Pacific, together with the prediction of above-normal sea-surface temperatures over much of the global oceans, there is widespread prediction of above-normal temperatures over almost all land areas. Positive temperature anomalies are expected over almost the entire Northern Hemisphere except for a maritime area off the south-west coast of North America that extends into the central Pacific at about 20° N. The largest increase in probabilities for above-normal temperatures in the Northern Hemisphere is predicted generally south of about 40° N, and also over parts of Central and East Asia, north-eastern parts of North America. Elsewhere in the Northern Hemisphere, including Europe, Greenland, Asia north of about 45° N, and in North America north of about 30° N, the probabilities for above-normal temperature are moderately increased. There are also enhanced probabilities for above-normal temperatures over most of the Southern Hemisphere, except for the areas bordering the eastern tropical Indian Ocean, and southeast Pacific between 120 and 70° W where probabilities for below-normal temperature is enhanced. Over most other Southern Hemisphere land areas north of about 30° S, the probabilities for above-normal temperature are strongly increased. However, over Australia, New Zealand, and over the central and eastern Pacific Ocean islands south of about 20° S the probabilities for above-normal temperatures are only weakly increased. There is no clear signal over South America south of about 35° extending to the southern tip of the continent.

RA I (Africa): Enhanced probabilities of above-normal temperatures are indicated over all of mainland Africa and Madagascar. The probability increases are strong everywhere except along a small area of the west coast of Southern Africa extending towards the southernmost tip of Africa. Throughout the continent, model consistency is moderate to strong.

RA II (Asia): Enhanced probabilities for above-normal temperatures are indicated over all mainland Asia. Probabilities for above-normal temperatures are high almost everywhere south of about 40° N but are strongest over central inland Asia at about 90° E, and over the Arabian Peninsula. Over these regions model consistency is moderate to strong. North of 50° N above-normal temperatures is still the most likely outcome, but with the exception of far northern regions, probabilities are weaker than they are further south, and model consistency is moderate.

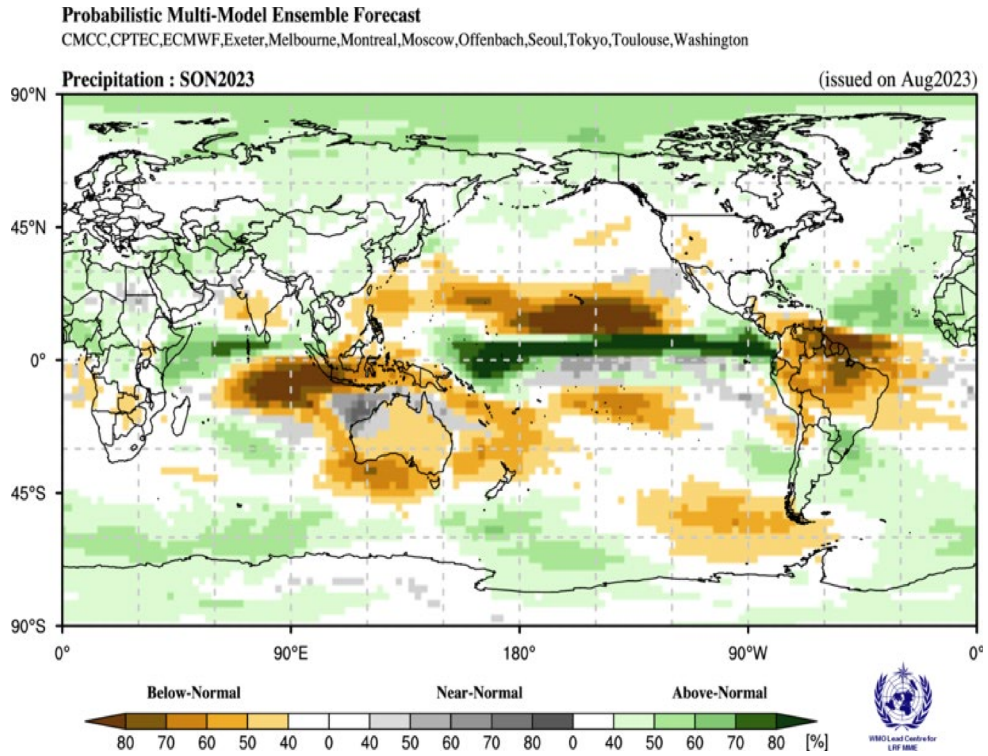
RA III (South America): Strongly enhanced probabilities for above-normal temperatures are indicated over South America north of about 25° S and extending south to about 30° S along the west coast. Model consistency is high over most of this region. In between 25° S and 35° S there is moderate increase in the probability for above-normal temperature. South of 35°S and extending to the southern tip of the continent there is no clear signal.

RA IV (North America, Central America, and the Caribbean): There are enhanced probabilities for above-normal temperatures over all of North America. The probabilities for above-normal temperatures are strongest over Central America and the Caribbean but also over the northeast of the continent. Model consistency is moderate to strong virtually everywhere. Along parts of the southwest coast of North America extending into the Pacific Ocean, there are weak probabilities of below-normal temperature that are consistent with an area of predicted negative sea-surface temperature anomalies. However, model consistency is only moderate to strong over the oceans.

RA V (Southwest Pacific): Strongly enhanced probabilities for above-normal temperatures are predicted across the whole of the Pacific Ocean within about 10 to 15° latitude of the equator. Further south, there are patches where probabilities for above-normal temperature are also strongly increased, including a large area extending from south of Australia, around New Zealand to about 120° W. Model consistency is moderate to high over most of these regions. In between 15 and 30° S and extending from the eastern coast of Australia to about 120° W probabilities for above-normal temperature are weakly enhanced. Over Australia, above-normal temperatures are indicated everywhere with higher probabilities in the middle of the continent, and model consistency is moderate to strong. North of the equator, above-normal temperatures are predicted almost everywhere except for an area of predicted below-normal temperatures extending from about 160° W towards North America. Model consistency is moderate in this cold area. In the Indian Ocean, east of the Maritime Continent, consistent with the prediction for the positive phase of the IOD, probabilities for below-normal temperature are enhanced.

RA VI (Europe): The probabilities for above-normal temperatures are increased over all of Europe with stronger probabilities located in the extreme southwest, and also over the extreme north. The model-to-model consistency is moderate to high.

2.3 Predicted precipitation, September - November 2023



https://climate.copernicus.eu/august-2023-second-warmest-month-closes-warmest-summer

MONTHLY CLIMATE BULLETIN

August 2023, second warmest month closes the warmest summer

DATE:7th September 2023

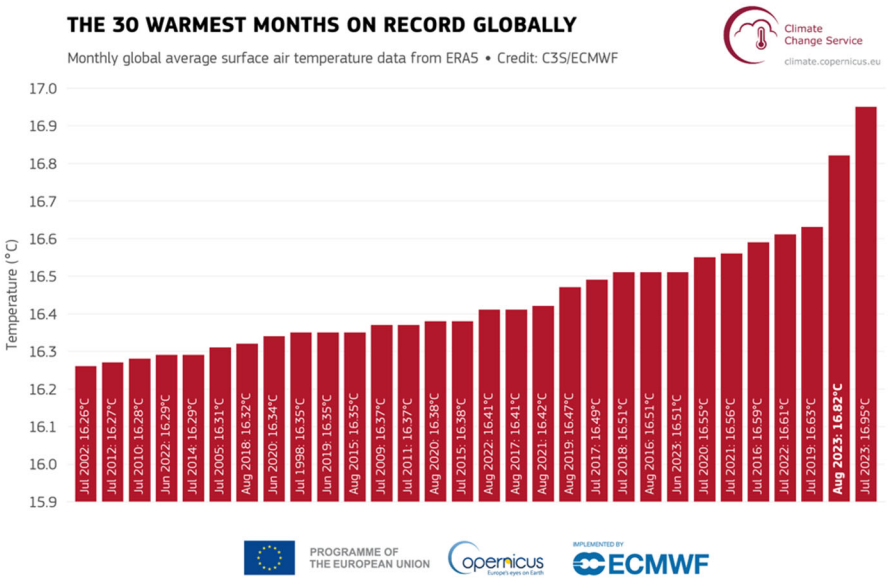
August 2023 is the warmest month of August in the ERA5 data record, as well as the second warmest month after July 2023. Global sea surface temperature (SST) continued to rise, Antarctica saw unprecedented low sea ice levels for this time of year, and the boreal summer (June, July, August) was the warmest on record by a large margin, according to the latest monthly bulletin of the Copernicus Climate Change Service (C3S).

The global-mean surface air temperature during August 2023 was 16.82°C, 0.71°C warmer than the 1991-2020 average for August, and 0.31°C warmer than the previous warmest August, in 2016.

Many parts of the Northern Hemisphere recorded heatwaves, but also some regions of the Southern Hemisphere saw well above average temperatures in the austral winter, including Australia, parts of South America and Antarctica.

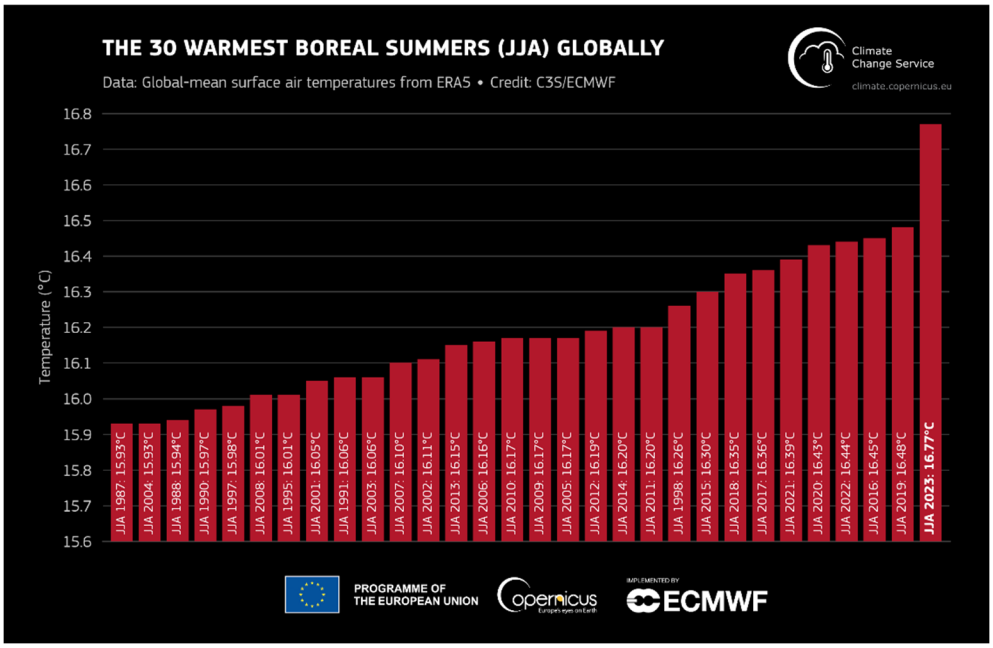
August 2023 ranks as the second warmest month ever recorded in the C3S ERA5 reanalysis dataset by a large margin, after July 2023.

High sea surface temperatures were observed in many areas of the global ocean, while El Niño conditions continue to develop. The exceptional SST temperatures recorded in the last months are reviewed in a separate article.



Global-mean surface air temperature for the 30 warmest months in the 1940–2023 period, ranked from lowest to highest temperature. The temperature for August 2023 is highlighted with bold font. Data: ERA5. Credit: C3S/ECMWF.

The surface air temperatures during the boreal summer (June, July, August) were largely above the climatological normal. The average temperature was 16.77°C, which is 0.66°C above the 1991-2020 seasonal average. In Europe however, temperatures during summer were 0.5 °C lower than the warmest summer, recorded in 2022.



Read the August 2023 Surface air temperature update in full.

The monthly C3S update about Hydrological Variables for August 2023 showed wetter-than-average conditions over a large part of central Europe and Scandinavia, often associated with heavy rains leading to flooding, amongst other regions.

The anomaly data for August 2023 shows drier-than-average conditions over the Iberian Peninsula, southern France, Iceland and much of Eastern Europe. Greece, Italy, France and Portugal experienced significant wildfires.

Elsewhere in the world, parts of North America experienced wetter-than-average conditions affected for example by hurricane Hilary.

Read the August 2023 Hydrological variables update in full.

Antarctic Sea ice extent remained at unprecedented low levels for this time of year, while approaching its annual maximum (usually in September). The monthly value is 12% below average, by far the largest negative anomaly for the month of August within the satellite era.

Arctic Sea Ice cover was further below average than in July, but well above the record minimum of August 2012.

Read the August 2023 Sea Ice update in full.

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Our File No.: 25827.341

September 7, 2023

By Electronic Filing

Canada Energy Regulator
Suite 210
517 Tenth Avenue SW
Calgary, AB T2R 0A8

Attention: Ramona Sladic, Secretary of the Commission

Dear Ramona Sladic:

Re: File OF-Tolls-Group1-T260-2023-03 01
Trans Mountain Pipeline ULC ("Trans Mountain")
Application for Interim Commencement Date Tolls and Other Related Matters related to the Transportation of Petroleum on the Expanded Trans Mountain Pipeline System
Written Comments in Relation to Information Request No. 1 Responses

In accordance with Process Letter No. 2,[1] in this submission Canadian Natural Resources Limited ("**Canadian Natural**") provides its comments on the information request no. 1 responses ("**IR Responses**").[2] Canadian Natural also provides its position on the Preliminary Decision and its views on the "broader issues" that should be considered as part of the Final Interim Tolls Decision or, in the alternative, when final tolls are adjudicated.[3]

INTRODUCTION

Canadian Natural is fully supportive of the two step process that the Commission has established for adjudicating the Interim Commencement Date Tolls ("**Interim Tolls**"). Canadian Natural respectfully requests that the Commission issue a Preliminary Decision which:

[1] CER Process Letter No. 2 (August 1, 2023) Filing ID: A8R9A8 [**CER Process Letter No. 2**].
[2] Trans Mountain, Response to CER Information Request No. 1 (August 16, 2023), Filing ID: A8S1R3 [**IR Responses**]; Vancouver Fraser Port Authority, Response to CER Information Request No. 1 (August 16, 2023), Filing ID: A8S1X1.
[3] CER Process Letter No. 2 at PDF p. 2.

Process Step	Responsible Participant	Deadline
Intervenors' Submission for Hearing	Intervenors	February 23, 2024
Applicant Submission for Hearing	Trans Mountain	March 8, 2024
Hearing	All parties	Late March or early April, 2024
Written or Oral Argument	All parties	Mid to end of April, 2024

As indicated above, Canadian Natural is committed to engaging with Trans Mountain to facilitate an efficient exchange of information to narrow the scope of determinations needed to be made by the Commission as part of the Final Interim Tolls Decision. Therefore, provided Trans Mountain is prepared to work constructively with shippers to facilitate a review of whether costs were reasonably and necessarily incurred, and properly categorized, these timelines may be condensed further. There is nothing preventing Trans Mountain from working directly with shippers during the Interim Tolls process to narrow the scope of issues that will be subject to the Review of Costs.

A Final Interim Tolls Decision may be issued in early Q2 of 2024, thereby substantially addressing the concerns Trans Mountain has raised with the establishment of Interim Tolls at the Mid-Point on an interim basis. Trans Mountain maintains that the Commencement Date will be late in Q1 2024. However, this remains uncertain as evidenced by: Trans Mountain's recent filing of an Application for Deviation which will require a hearing to take place on September 14 and 15, 2023,[38] and; Trans Mountain's previous predictions of a Commencement Date having not materialized.[39] Although Canadian Natural hopes for an earlier Commencement Date, unfortunately, it is probable that the Commencement Date will be delayed into Q2 or later in 2024. It is possible, depending on the eventual Commencement Date, that the Interim Tolls levied will never be based on the Mid-Point because a Final Interim Tolls Decision may be issued prior to the true Commencement Date. In any event, Interim Tolls will only be based on the Mid-Point for a limited time and will be subsequently based on what has been determined to be costs that were reasonably and necessarily incurred and properly

[38] CER, Letter to Trans Mountain re Segment 5.3 Pipsell Area – Oral hearing information and revised schedule (August 30, 2023), Filing ID: A8S3R3.
[39] Trans Mountain, "Trans Mountain Corporation Updates Expansion Project Cost and Schedule" (February 18, 2022), available online: <https://www.transmountain.com/news/2022/trans-mountain-corporation-updates-expansion-project-cost-and-schedule>, in which Trans Mountain claimed mechanical completion would "occur in the third quarter of 2023". The Application now states this will occur "by end of 2023"; See, Tans Mountain, Application for Approval of Interim Commencement Date Tolls and other Matters Related to the Transportation of Petroleum on the Expanded Trans Mountain Pipeline System (June 1, 2023), Filing ID: A8Q5Z9 at para 5 (PDF p. 4 of 145); pursuant to Section 67 of the Traffic, Tolls and Tariffs provisions in Part 3 of the Canada. Similarly, in Trans Mountain, "Trans Mountain Corporation Provides Update on the Expansion Project" (March 10, 2023), available online: <https://www.transmountain.com/news/2023/trans-mountain-corporation-provides-update-on-the-expansion-project>, where Trans Mountain advised that "[c]onstruction of the Project is close to 80 per cent complete, with mechanical completion expected to occur at the end of 2023, and the pipeline will be in service in the first quarter of 2024."

Excerpt https://www.transmountain.com/news/2023/trans-mountain-corporation-releases-second-quarter-2023-results

Trans Mountain Corporation Releases Second Quarter 2023 Results

Aug. 29, 2023

As of June 30, 2023, construction of the Project is approximately 90 per cent complete, with $24.0 billion in construction capital spending incurred plus $3.3 billion in financial carrying costs capitalized since the inception of the Project. TMC continues to target the end of 2023 for mechanical completion with commercial service of the Project anticipated to occur in the first quarter of 2024.

As of August 19, 2023, construction of the Project is 94 per cent mechanically complete with approximately 42 kilometres of pipe left to install. Berth 1 at the Westridge Marine Terminal has been operating since mid-July. We made significant progress on watercourse and highway crossings and construction in the Lower Mainland is 93 per cent complete and 97 per cent of our facilities in Alberta and B.C. (including Edmonton Terminal and Alberta/B.C. pump stations) are also complete. We have mitigation and contingency plans in place due to construction challenges in areas including Burnaby Mountain Tunnel, Jacko Lake and Mountain 3 in Spread 5B. We are currently planning and targeting the commencement of service on the expanded pipeline system near the end of the first quarter of 2024.

Excerpt https://www.transmountain.com/news/2023/trans-mountain-corporation-releases-first-quarter-2023-financial-results

Trans Mountain Corporation Releases First Quarter 2023 Financial Results

May 30, 2023

As of March 31, 2023, construction of the Trans Mountain Expansion Project (“the Project”) is approximately 82 per cent complete, with $21.5 billion in construction capital spending incurred plus $2.8 billion in financial carrying costs capitalized since the inception of the Project.

Trans Mountain anticipates mechanical completion of the Project to occur at the end of 2023 with commercial service expected to occur in the first quarter of 2024. The company’s projected Adjusted EBITDA is expected to be approximately $2.4 billion in the first full year of the expanded assets operation and expected to grow annually thereafter. These projections are underpinned by long-term contractual commitments for 80 per cent of the system’s 890,000 barrels a day of capacity and expected utilization of uncontracted capacity of the system once in service.

Excerpt https://www.transmountain.com/news/2023/trans-mountain-corporation-releases-fourth-quarter-and-year-end-2022-financial-results

Trans Mountain Corporation Releases Fourth Quarter and Year End 2022 Financial Results

May 9, 2023

As of December 31, 2022, construction of the Trans Mountain Expansion Project (“the Project”) is approximately 75 per cent complete, with $18.9 billion in construction capital spending incurred. Trans Mountain anticipates mechanical completion of the Project to occur at the end of 2023 with commercial service expected to occur in the first quarter of 2024. The company’s projected Adjusted EBITDA is expected to be approximately $2.4 billion in the first full year of the expanded assets operation and expected to grow annually thereafter. These projections are underpinned by long-term contractual commitments for 80 per cent of the system’s 890,000 barrels a day of capacity and expected utilization of uncontracted capacity of the system once in service.

https://www.reuters.com/markets/commodities/venezuelas-august-oil-exports-slump-38-crude-upgrading-falls-short-2023-09-04/?taid=64f5b9e2062cd500016dcdaf&utm_campaign=trueAnthem:+Trending+Content&utm_medium=trueAnthem&utm_source=twitter

Venezuela's August oil exports slump 38% as crude upgrading falls short

By Marianna Parraga and Mircely Guanipa
September 4, 20234:03 AM MDTUpdated 3 hours ago

is seen at Jose refinery cargo terminal in Venezuela in this undated file photo. File Photo *Acquire Licensing Rights*

Sept 4 (Reuters) - Venezuela's oil exports in August fell 38% from a three-year high in July as state-run oil company PDVSA struggled to keep its heavy crude upgraders in service, according to vessel monitoring data and internal company documents.

The South American country overall has slightly boosted oil production and exports this year, helped by fewer outages and higher output by Chevron (CVX.N) under a U.S. license received in November.

But PDVSA's lack of capital, U.S. sanctions since 2019 and poorly maintained infrastructure, including the upgraders the company uses to convert its extra heavy oil to exportable grades, put limits to what it can do to sustain the increases.

Venezuela's oil exports in August dropped to about 544,000 barrels per day (bpd) from more than 877,000 bpd in July, according to LSEG Eikon vessel tracking data.

China remained the main destination for most of the OPEC member's crude and fuel exports, including cargoes transshipped through Malaysia.

Chevron shipped some 147,000 bpd of crude to its refineries and to other U.S. buyers, below the 161,000 bpd exported in July.

Venezuela also exported some 214,000 tons of oil byproducts and petrochemicals, down from 412,000 tons in July, the data showed.

The two crude blending units of the Petrosinovensa project at Venezuela's Orinoco Belt, operated by PDVSA and China National Petroleum Corp (CNPC), suffered outages that halted them last month. One resumed operations on Aug. 16, an internal PDVSA document showed.

At the Petropiar crude upgrader, operated by PDVSA and Chevron and that processes extra heavy oil, maintenance affected a vacuum distillation unit. The facility fully resumed operations on Aug. 9, processing some 110,000 bpd since then.

The Petromonagas upgrader operated by PDVSA and Russia's Roszarubezhneft ran out of diluents, which took it out of service last month. A fourth Orinoco upgrading facility, Petrocedeno, reduced crude processing due to problems with a boiler, the document showed.

However, PDVSA said on social media this week it was increasing output of its lighter crude grades.
Venezuela produced a total of 810,000 bpd of crude in July, an 11% increase from January, according to official data.

PDVSA boosted shipments of crude, fuel oil, gasoline blend stock and gas oil to ally Cuba to some 65,000 bpd, from 53,000 bpd in July.
Venezuela also imported some 800,000 barrels of naphtha in August, including a cargo supplied by Chevron to its joint ventures and another provided by Italy's Eni (ENI.MI) as part of an expanded oil swap.

Reporting by Marianna Parraga in Houston and Mircely Guanipa in Maracay, Venezuela Editing by Marguerita Choy
Our Standards: The Thomson Reuters Trust Principles.

https://www.kurdistan24.net/en/story/32535

‘The ball is in Turkey’s court’, says Iraqi oil official on resumption of Kurdish oil export

The export outage has “negatively affected” every side, Jihad said, hoping the process resumes soon, as it would solve the remaining issues.

Kurdistan 24 3 Hours

ERBIL (Kurdistan 24) – Regarding the resumption of the Kurdistan Region’s oil export, the Iraqi Ministry of Oil told Kurdistan 24 on Sunday that the “ball is in Turkey’s court.”

The export has been halted since March 25 at the request of Baghdad after Iraq claimed victory against Ankara at the International Court of Arbitration in Paris for allowing Erbil to independently export its oil via the Turkish Ceyhan port.

The resumption is not in the hands of Iraq and Kurdistan Region; “The ball is in Turkey’s court”, ‘Asim Jihad, the spokesperson for the Iraqi Ministry of Oil, told Kurdistan 24 on Sunday on the sidelines of the International exhibition and conference for oil projects and licensing in Baghdad.

The export outage has “negatively affected” every side, Jihad said, hoping the process to be resumed soon as it would solve the remaining issues.

The chief diplomat of the Kurdistan Regional Government (KRG) has previously estimated the loss of the stoppage to be $5 billion since late March.

Iraq and Turkey have held numerous discussions since March 25 to resume the export. However, the outage is still ongoing, as both sides are struggling to reach an agreement on the remaining lawsuits filed by Baghdad against Turkey for allowing independent Kurdish exports.

The court has awarded Baghdad $1.5 billion in compensation for the damages the country has endured as a result of the export.

Ankara expects Baghdad to drop the remaining case against the country with regard to oil export.

Prior to the stoppage, the Kurdistan Region was exporting over 400,000 barrels of oil per day through a pipeline to Turkey’s Ceyhan port.

About 90,000 barrels of oil are currently being transferred to Baghdad by the Kurdish region in order to be used for domestic purposes, per an agreement inked in April between Kurdistan Region Prime Minister Masrour Barzani and Iraqi premier Mohammed Shia' Al-Sudani.

https://ina.iq/eng/28486-the-federal-government-has-fully-implemented-its-financial-obligations-towards-krg-government-spokesperson-al-awadi-says.html

The Federal Government has fully implemented its financial obligations towards KRG, Government Spokesperson Al-Awadi says

- 8-09-2023, 13:28

Baghdad-INA

Government spokesperson Bassem Al-Awadi confirmed on Friday, that the federal government has fully implemented its financial obligations towards Kurdistan region.

“The federal government has fully implemented its financial obligations towards the Kurdistan region, and has made the utmost efforts to provide solutions,” Al-Awadi said in a post on the “X” platform (formerly Twitter), followed by the Iraqi News Agency (INA)." "Until the end of June, the money owed by the region reached to more than three times the share of the region, according to the actual expenditure of the state, while Kurdistan Region Government-KRG did not deliver oil and non-oil revenues as required by the federal budget law."

"Notwithstanding the lack of commitment of KRG, the Federal Government has taken the decision not to hold Iraqi citizens in Kurdistan responsible for non-compliance, and we worked as permitted by law by taking a decision in the Council of Ministers to lend to the region until its financial problems are fundamentally resolved," Al-Awadi added.

Al-Awadi stressed that "The federal government is as keen on the rights of citizens in the Kurdistan region as it is on the rights of citizens in other governorates, and that adherence to federal laws and agreements concluded, under the constitution, is the shortest path to completing financial transfers and enhancing confidence."

https://www.rudaw.net/english/kurdistan/08092023

Iraqi govt spox says Baghdad met financial obligations towards Erbil

yesterday at 12:58

Rudaw

ERBIL, Kurdistan Region - The Iraqi government spokesperson said on Friday that the federal government had fulfilled its financial obligations towards the Kurdistan Region, accusing Erbil of not complying with the budget requirements.

In a statement on X (formerly known as Twitter), Iraqi government spokesperson Basem al-Awadi stated that Baghdad had "fully implemented its financial obligations" towards Erbil. This comes several days after the Kurdistan Regional Government (KRG) said it had not received enough money to pay salaries.

"By the end of June, the funds owed by the region [Kurdistan Region] amounted to more than three times the region's share in the Budget Law," Awadi said.

Earlier this week, Baghdad decided to send 500 billion Iraqi dinars (close to $382 million) for the salaries of the public servants of the Region, but the Region's finance ministry is yet to announce receiving the payment.

"The Iraqi government has not abided by its agreements with the Kurdistan Region… not only it has not sent the share of the Kurdistan Region, it also did not send the salaries of the public servants… We feel like this is a policy of starvation," Pehsawa Hawramani, the spokesperson of the KRG, said during a televised address in Erbil earlier this week.

Meetings between delegations from the KRG and the federal government have been ongoing over the past months, aimed at resolving lingering disputes over the Region's share in the federal budget.

"Despite the regional government's lack of commitment, the federal government took it upon itself not to burden the Iraqi citizens of Kurdistan with KRG's non-compliance," the statement added, noting that Baghdad would loan funds to Erbil.

Awadi also said the KRG had failed to "hand over oil and non-oil revenues as it was required according to the Federal Budget Law."

Iraq's federal finance ministry on Tuesday **announced** it will be signing a "loan agreement" with the KRG in order to help pay salaries, adding that Erbil's dues will be settled after it complies with its obligations within the budget. The agreement will be signed between the KRG finance ministry and Iraq's Rafidain and Rasheed banks.

Iraq passed its highly-contentious budget bill for the years 2023, 2024, and 2025 in June, which includes a record $152 billion in spending, of which the Kurdistan Region's share is 12.6.

The KRG has failed to pay its civil servants on time and in full for several years due to the financial crisis. Public sector employees have not been paid for the months of July and August following several failed deals with Baghdad.

https://www.rudaw.net/english/business/29082023

Iraq, Kurdistan Region have lost $5bn due to oil exports halt: Official

29-08-2023

Chenar Chalak@Chenar_Qader

ECONOMY

Safeen Dizayee, head of the KRG's Department of Foreign Relations, speaking to reporters in Erbil on August 29, 2023. Photo: Rudaw/screengrab

Also in ECONOMY

ERBIL, Kurdistan Region - Iraq and the Kurdistan Region have so far lost around five billion dollars due to the halt in the Region's oil exports through Turkey's Ceyhan port since March, a Kurdistan Regional Government (KRG) official told reporters on Tuesday, adding that Baghdad has not taken any "practical steps" to resume the exports.

Turkey stopped the flow of Kurdish oil through the Iraq-Turkey pipeline after a Paris arbitration court ruling on March 23 ruled in favor of Baghdad against Ankara, saying the latter had breached a 1973 pipeline agreement when it allowed the Kurdistan Region to begin independent oil exports in 2014.

Several meetings have been held between Iraqi and Turkish delegations since March, aimed at continuing the exports, but they have not yielded any results.

"Turkey supports the resumption of exporting the Kurdistan Region's oil, the Kurdistan Region is definitely very eager, and Baghdad, officially, say they are ready but they have not really taken any practical steps yet," Safeen Dizayee, head of the KRG's Department of Foreign Relations, told reporters on Tuesday.

Dizayee said that efforts are ongoing to reach a common ground and an understanding with Baghdad to restart the exports, adding that the resumption was needed for Erbil to fulfill its obligations within the federal budget law of handing over at least 400,000 barrels of crude oil per day to Iraq's State Oil Marketing Organization (SOMO).

The arbitration court ordered Turkey to pay a penalty of $1.5 billion in damages to Baghdad for allowing the KRG to independently export its oil between 2014 and 2018.

Dizayee said it was "mathematically illogical" for Baghdad to cost itself and Erbil five billion dollars in protest to not receiving $1.5 billion from Ankara.

Erbil and Baghdad signed an agreement to resume the Region's exports in April, but there is still no oil flowing through the pipeline to Turkey over four months later, as Ankara claims to be inspecting the port tubes that might have been damaged following February's earthquake.

Turkey Seeks Iraq Revenue-Sharing Deal to Restart Oil Exports
2023-08-25 10:12:01.470 GMT

By Selcan Hacaoglu and Onur Ant

(Bloomberg) -- Turkey is attempting to broker a deal between the central Iraqi government and the semi-autonomous Kurdish administration over how to resume Iraqi crude-oil exports via its territory, according to two Turkish officials.

Turkey halted flows through a twin-pipeline in March after an arbitration court ordered it to pay about $1.5 billion in damages to Iraq for transporting oil without Baghdad's approval. Ankara has no intention of paying the fine and is asking the Kurds to pay it to Baghdad as they were the benefactors, the officials said.

A compromise over competing demands from Iraq and the Kurdish administration over revenue-sharing from oil exports is being sought, the officials who are familiar with the matter said. The two sides have been quarreling for years over rights to Kurdistan oil sales, part of Baghdad's long-running attempt to rein in the semi-autonomous region.

Officials from the Baghdad government didn't comment, while the KRG declined to comment.

Turkey's Foreign Minister Hakan Fidan discussed energy, economic and security relations both with the president and prime minister of the Kurdish government in Erbil on Thursday, after holding talks with his Iraqi counterpart in Baghdad earlier in the week. Turkish Energy Minister Alparslan Bayraktar also traveled to Erbil and has had discussions with Iraqi Oil Minister Hayyan Abdul Ghani.

Repairing Ties

Turkey is reaching out to Baghdad to repair ties after years of estrangement as part of a reset in relations with Arab nations. Ankara is offering the Kurdistan Regional Government, or KRG, as well as the central government in Baghdad help in building power plants and other infrastructure.

Baghdad has asked Turkey to collect the money from oil exports and transfer it to Iraq after deducting 12.6% of the share allocated to the KRG, said the officials, speaking on condition of anonymity. The KRG, however, has told Turkey that it wants to claim the entire revenue from exports via its territory, arguing that it has been unable to collect funds from separate Iraqi oil exports, they said.

The pipeline running from Kirkuk to Turkey's Mediterranean port of Ceyhan remains operational and Iraqi crude exports could start quickly once there is a deal in place, the Turkish officials said, adding that Turkey aims to resolve the conflict as soon as possible.

The closure of the pipeline has cut off nearly half a million barrels of crude from global markets as Ankara refused to pay the $1.5 billion fine. Iraq had been exporting about 400,000 to 500,000 barrels a day from fields in the country's

north, including in the Kurdish region, via the now-halted pipeline.
It's unclear how much of that oil would flow back onto world markets if there was a deal, since Iraq is already pumping at very close to the limit under its OPEC quota.

--With assistance from Khalid Al-Ansary.

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Air Passenger Market Analysis

July 2023

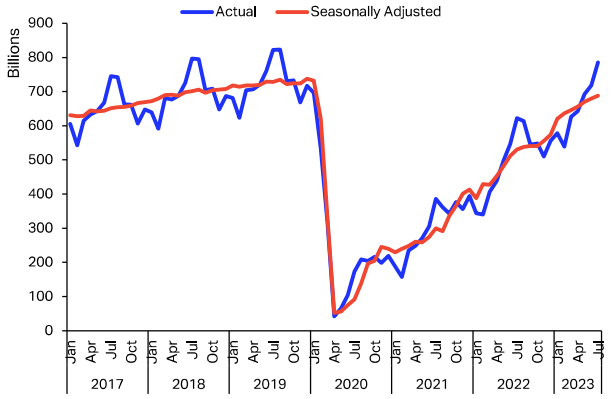
Robust growth in domestic RPKs bolsters global recovery

- Industry-wide revenue passenger-kilometers (RPKs) increased 26.2% year-on-year (YoY) in July, reaching 95.6% of the traffic numbers seen in 2019. Available seat-kilometers (ASKs) also saw a strong growth of 23.7% YoY, totaling 96.1% of the pre-pandemic capacity.
- Domestic passenger traffic reached an all-time high and rose 8.3% over 2019 levels, mainly driven by the surge in PR China, where domestic RPKs grew by 22.5% relative to 2019 figures.
- The recovery of international traffic remained stable in July, with industry-wide international RPKs standing at 11.3% below pre-covid levels.
- Passenger load factors approached the levels achieved in 2019, reaching an industry-wide average of 85.2%, only 0.4 percentage points (ppts) away from full recovery. The latest forward-looking ticket sales indicate that this recovery momentum is expected to continue in the near term.

Steady traffic growth continued in July…

Industry-wide revenue passenger-kilometers (RPKs) continued to expand in July, growing 26.2% year-on-year (YoY). In seasonally-adjusted terms, total passenger traffic climbed 1.7% month-on-month (MoM). This growth aligns with the steady recovery trend observed in the industry over the past seven months, exhibiting a slowing but resilient growth momentum (**Chart 1**).

Chart 1 – Global air passengers, revenue-passenger kilometers (RPKs), billions per month



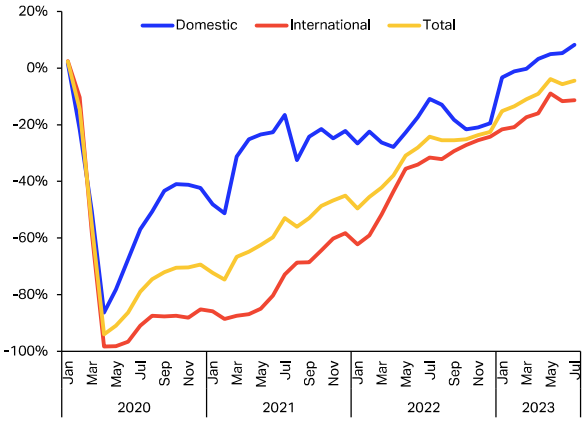
Sources: IATA Sustainability and Economics, IATA Monthly Statistics

Seat capacity, measured in available seat-kilometers (ASKs), increased 23.7% YoY, and 1.5% MoM in seasonally-adjusted terms. Industry-wide RPKs and ASKs were still 4.4% and 3.9% below 2019 levels, respectively. Overall, seat capacity growth aligned with the expansion of passenger traffic in July.

…while the recoveries in international and domestic RPKs diverged

The recovery in international traffic steadied this month as RPKs stood 11.3% under pre-pandemic levels, a modest 0.5 percentage point (ppt) improvement from the previous month. In contrast, domestic traffic expanded further and continued to rise over 2019 levels, achieving 8.3% growth over July 2019 levels and reaching an all-time high record, a development attributable to the strong performance of major markets and PR China in particular (**Chart 2**).

Chart 2 – Global domestic and international revenue passenger-kilometers (RPKs), YoY% change vs. 2019



Sources: IATA Sustainability and Economics, IATA Monthly Statistics

Air passenger market in detail - July 2023

	World share[1]	July 2023 (% year-on-year) RPK	ASK	PLF (%-pt)[2]	PLF (level)[3]	July 2023 (% ch vs the same month in 2019) RPK	ASK	PLF (%-pt)[2]	PLF (level)[3]
TOTAL MARKET	***100.0%***	**26.2%**	**23.7%**	**1.7%**	**85.2%**	**-4.4%**	**-3.9%**	**-0.4%**	**85.2%**
International	*58.1%*	29.6%	28.9%	0.5%	85.7%	-11.3%	-11.7%	0.4%	85.7%
Domestic	*41.9%*	21.5%	16.7%	3.3%	84.5%	8.3%	10.4%	-1.7%	84.5%

[1]% of industry RPKs in 2022 [2]Change in load factor [3]Load factor level

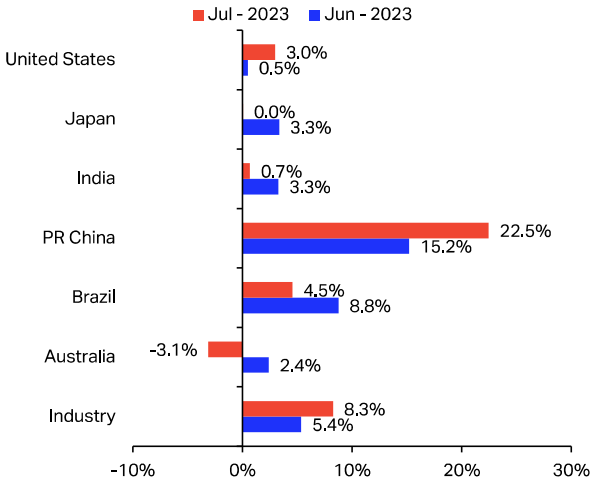
Domestic passenger traffic surged in China…

Domestic RPKs in China grew 22.5% compared to July 2019 and 71.9% YoY, propelled by record high domestic tourism (**Chart 3**). Seat capacity performed by Chinese airlines was 31.3% higher than July 2019 levels, outpacing passenger demand. The average passenger load factor in the country was only 5.7 ppts lower than pre-pandemic levels, reaching 79.2%.

In India, domestic RPKs rose 21.1% YoY and by 0.7% compared to 2019 levels. Over the past months, India has seen an uninterrupted positive growth pattern, in seasonally-adjusted terms, indicating that domestic traffic is likely to resume its expansion.

July was the third consecutive month where Japan's domestic traffic had fully recovered, with RPKs equalling those of 2019 levels and seat capacity only 1.2 ppts short on pre-pandemic ASKs. In Australia, passenger flows still trended near 2019 levels, as July numbers rose 3.5% YoY and were 3.1% short of full recovery.

Chart 3 – Domestic RPK growth by market, YoY% change vs. 2019



Sources: IATA Sustainability and Economics, IATA Monthly Statistics

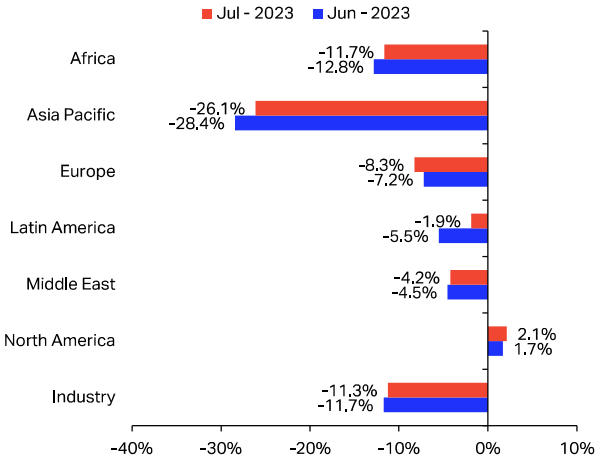
The US market still boasts strong results, with RPKs 3.0% above the pre-covid level, 11.1% YoY growth, and an average load factor within pre-pandemic territory. Brazil saw full monthly recovery for the third consecutive month, as domestic RPKs increased 4.5% on July 2019 levels (**Chart 3**). Both markets have exhibited overall growth trends over the past several months.

… but global international recovery slowed down

In July, industry-wide international RPKs and ASKs increased 29.6% and 28.9% YoY, respectively. Compared to 2019 levels, growth in passenger traffic also slightly outpaced growth in seat capacity. Overall, the industry load factor was 0.5 ppts and 0.4 ppts higher than last year and 2019 levels. While international traffic continues to ramp up, the recovery momentum steadied this month as regions faced different challenges.

Asia Pacific carriers doubled their international passenger traffic over the year, surging 105.8% YoY but remaining 26.1% lower than July 2019 numbers (**Chart 4**). The current state of international recovery diverges greatly from the overall performance of the region, primarily due to the slow rebound of intra-regional and inter-regional tourism.

Chart 4 – International RPK growth by airline region of registration, YoY% change versus 2019



Sources: IATA Sustainability and Economics, IATA Monthly Statistics

International RPKs for North American airlines outperformed pre-pandemic levels this month by 2.1%, with an average load factor of 90.3% (**Chart 4**).

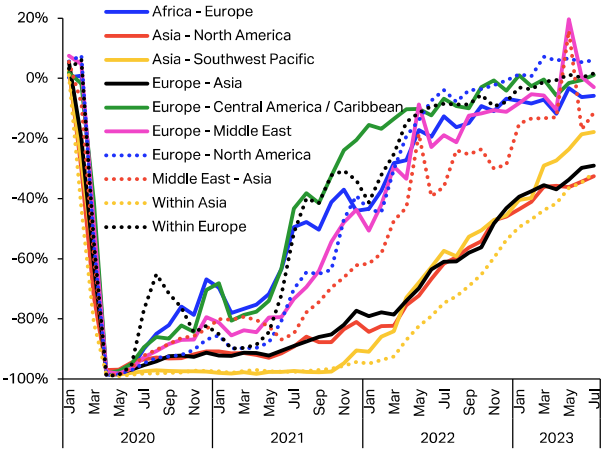
Compared to the previous year, international traffic for the region's airlines increased by 17.7%. Consistent with these positive trends, most route areas from North America continued to exceed pre-pandemic levels in July, especially those connecting markets in the Middle East and in Central America. The major Europe - North America route area expanded international RPKs by 6.0% compared to those of July 2019. Passenger flows on major routes between Asia Pacific and the rest of the world continued to increase in July (**Chart 5**).

International RPKs performed by European carriers grew 17.7% YoY and were 8.3% short on 2019 figures. In the region, the month of July was challenging as it was marked by strikes and exceptional weather conditions that caused traffic disruptions. Nonetheless, international RPKs within Europe rose 1.7% over pre-pandemic levels.

Latin American airlines have taken another significant step toward complete international traffic recovery this month, with international RPKs only 1.9 ppts lower than 2019 levels. The routes connecting Latin America to the rest of the world have shown a similar trend, mirroring the airlines' performance. Specifically,

international traffic within Central America has surged 15.8% compared to 2019 levels, and the major Europe – Central America/Caribbean route area has fully recovered (**Chart 5**).

Chart 5 – International RPKs, YoY% change vs. 2019 – Top 10 route areas in 2019



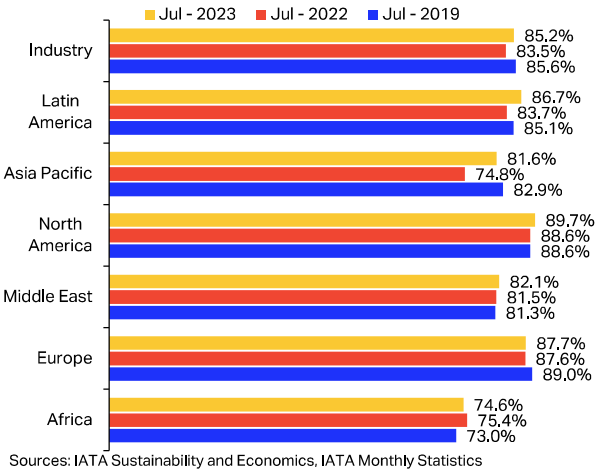
Sources: IATA Sustainability and Economics, IATA Monthly Statistics

For the Middle East, international recovery remained on track with passenger traffic up 22.6% YoY (down 4.2% on pre-covid levels). In Africa, international RPKs grew 25.6% YoY and remained 11.7% under 2019 levels.

High load factors recorded across all regions

All regions have seen improved passenger load factors, approaching pre-pandemic levels (**Chart 6**). However, this was achieved with less passenger traffic, marking a significant improvement from the previous year. Higher load factors amidst a period of continuous traffic recovery signal sustained high demand for air travel.

Chart 6 – Passenger load factors (PLF) by airline region of registration, total traffic



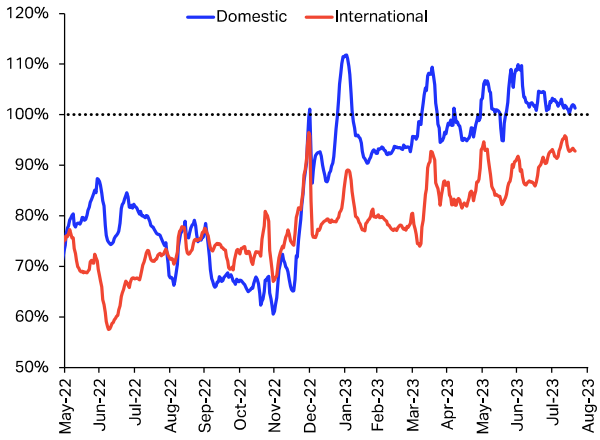
Sources: IATA Sustainability and Economics, IATA Monthly Statistics

Notably, the industry-wide load factor approached the all-time high level of 85.7% reached in August 2019. The industry average international load factor established a new record in July 2023, climbing up to 85.7%. This is an important development for the financial health of airlines, particularly in consideration of the current economic headwinds on consumers.

Ticket sales indicate sustained demand in upcoming months

As the third quarter draws to a close, ticket sales for domestic travel are trending slightly downwards, while international ticket sales have seen a slight acceleration in recovery **(Chart 7).** Across regions, demand was resilient in comparison to 2019 sales levels for both international and domestic travel. Ticket sales for travel from and to Asia Pacific have seen different develoments, with the recovery in international ticket sales rapidly approaching the resoration of domestic ticket sales. Overall, ticket sales continue to give a positive near term demand outlook for the global industry.

Chart 7 – Ticket sales by purchase date, 7-day moving average - % share of 2019 levels



Sources: IATA Sustainability and Economics, DDS

Air passenger market in detail - July 2023

	World share [1]	July 2023 (% year-on-year) RPK	ASK	PLF (%-pt)[2]	PLF (level)[3]	July 2023 (% ch vs the same month in 2019) RPK	ASK	PLF (%-pt)[2]	PLF (level)[3]
TOTAL MARKET	*100.0%*	**26.2%**	**23.7%**	**1.7%**	**85.2%**	**-4.4%**	**-3.9%**	**-0.4%**	**85.2%**
Africa	*2.1%*	25.0%	26.3%	-0.8%	74.6%	-8.2%	-10.1%	1.5%	74.6%
Asia Pacific	*22.1%*	67.1%	53.4%	6.7%	81.6%	-8.8%	-7.3%	-1.3%	81.6%
Europe	*30.8%*	11.7%	11.5%	0.2%	87.7%	-5.5%	-4.1%	-1.3%	87.7%
Latin America	*6.4%*	15.5%	11.4%	3.1%	86.7%	3.9%	1.9%	1.6%	86.7%
Middle East	*9.8%*	21.9%	21.0%	0.6%	82.1%	-4.4%	-5.4%	0.8%	82.1%
North America	*28.8%*	13.2%	11.9%	1.0%	89.7%	2.4%	1.2%	1.0%	89.7%
International	*58.1%*	**29.6%**	**28.9%**	**0.5%**	**85.7%**	**-11.3%**	**-11.7%**	**0.4%**	**85.7%**
Africa	*1.8%*	25.6%	27.4%	-1.0%	73.9%	-11.7%	-13.4%	1.4%	73.9%
Asia Pacific	*8.9%*	105.8%	96.2%	3.9%	84.5%	-26.1%	-27.9%	2.0%	84.5%
Europe	*26.5%*	13.8%	13.6%	0.1%	87.0%	-8.3%	-6.1%	-2.0%	87.0%
Latin America	*2.8%*	25.3%	21.2%	2.9%	89.1%	-1.9%	-5.8%	3.5%	89.1%
Middle East	*9.4%*	22.6%	22.1%	0.3%	82.6%	-4.2%	-5.7%	1.3%	82.6%
North America	*8.7%*	17.7%	17.2%	0.3%	90.3%	2.1%	-0.6%	2.4%	90.3%
Domestic	*41.9%*	**21.5%**	**16.7%**	**3.3%**	**84.5%**	**8.3%**	**10.4%**	**-1.7%**	**84.5%**
Dom. Australia[4]	*1.0%*	3.5%	8.5%	-4.1%	83.2%	-3.1%	-3.1%	0.0%	83.2%
Domestic Brazil[4]	*1.5%*	3.6%	-0.1%	3.0%	83.4%	4.5%	6.2%	-1.3%	83.4%
Dom. China P.R.[4]	*6.4%*	71.9%	49.1%	10.5%	79.2%	22.5%	31.3%	-5.7%	79.2%
Domestic India[4]	*2.0%*	21.1%	13.3%	5.3%	83.3%	0.7%	4.7%	-3.3%	83.3%
Domestic Japan[4]	*1.2%*	13.4%	1.3%	7.8%	72.7%	0.0%	-1.2%	0.9%	72.7%
Domestic US[4]	*19.2%*	11.1%	9.5%	1.3%	89.2%	3.0%	3.1%	-0.1%	89.2%

[1]% of industry RPKs in 2022 [2]Change in load factor [3]Load factor level

4 Note: the six domestic passenger markets for which broken-down data are available account for approximately 31.3% of global total RPKs and 74.6% of total domestic RPKs

Note: The total industry and regional growth rates are based on a constant sample of airlines combining reported data and estimates for missing observations. Airline traffic is allocated according to the region in which the carrier is registered; it should not be considered as regional traffic.

IATA Sustainability & Economics
economics@iata.org
6 September 2023

Air Cargo Market Analysis

July 2023

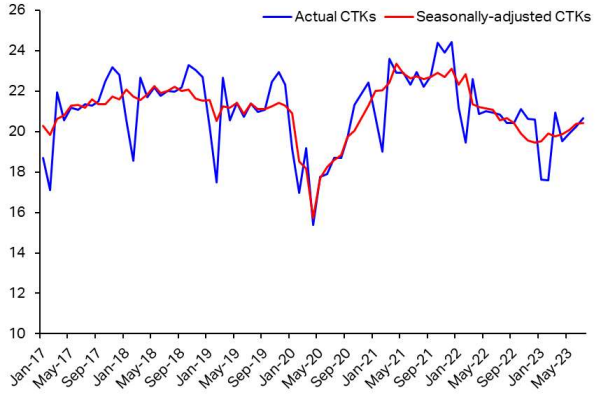
Air cargo maintains recovery momentum despite headwinds

- Industry air cargo demand decreased by 0.8% year-on-year in July, reflecting the sustained improvement in cargo tonne-kilometers (CTKs) and the low base of CTKs in 2022.
- Air cargo capacity, measured in available cargo tonne-kilometers (ACTKs), increased by 11.2%, primarily due to the continued restoration of belly cargo capacity during the summer season.
- Global trade contracted for the third consecutive month, with manufacturing output and new export orders deteriorating. China's weak performance in production and exports is a concerning development for the global economy.
- Inflation showed a mixed picture in July. The increase in US consumer prices picked up pace for the first time in 13 months, while both consumer and producer prices in China fell, suggesting a possible deflationary trend in the Chinese economy.
- Asia Pacific airlines experienced their first year-on-year growth in cargo traffic since March 2022, driven by increased trade with other regions and significant market improvements within Asia.

Global CTKs continued to improve in July

The global air cargo industry registered 20.7 billion cargo tonne-kilometers (CTKs) in July, extending its steady improvement since February. Year-on-year (YoY) industry CTKs narrowed the gap, now standing at 0.8% below July 2022 levels, while remaining 3.3% lower than their pre-pandemic level in 2019 **(Chart 1).** The improved annual growth rate in global CTKs is also a result of growth stemming from a lower 2022 baseline.

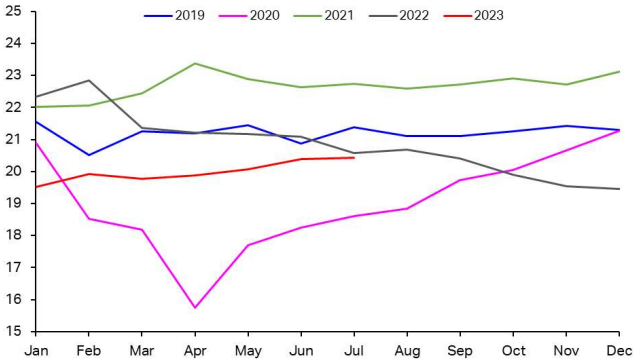
Chart 1 – Global CTKs (billions per month)



Sources: IATA Sustainability and Economics, IATA Monthly Statistics

Seasonally adjusted (SA) CTKs in July recorded a 0.7% YoY decline, marking a notable improvement of 2.7 percentage points (ppts) compared to the previous month **(Chart 2).** Due to the month-on-month (MoM) decline in SA CTKs throughout 2022, the July 2023 CTKs closely resembled the levels seen in July 2022. Conversely, SA CTKs have been consistently rising since March 2023, with July posting a 0.2% increase over the previous month's levels.

Chart 2 – Seasonally adjusted monthly CTKs (billions)



Sources: IATA Sustainability and Economics, IATA Monthly Statistics

Air cargo capacity growth picked up pace

Air cargo capacity, measured by available cargo tonne-kilometers (ACTKs), stood at 49.1 billion in July **(Chart 3).** This is a 11.2% increase compared to the 2022 level and a 3.2% increase over the same month in 2019. Compared with the ACTK growth in June, the annual growth of ACTKs was 1.6 ppts higher, largely due to the growth of belly cargo capacity in the summer season (29.3% YoY). On the other hand, international capacity

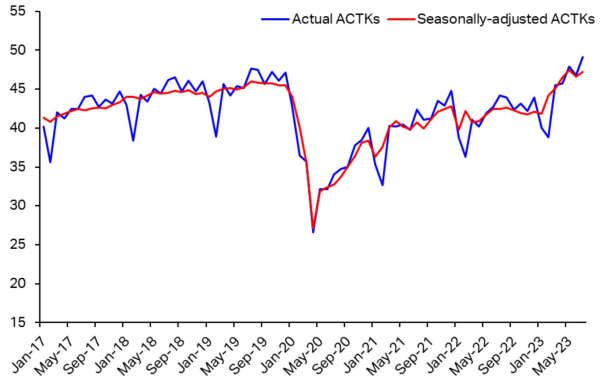
Air cargo market overview - July 2023

	World share [1]	July 2023 (% year-on-year)				July 2023 (% ch vs the same month in 2019)			
		CTK	ACTK	CLF (%-pt)[2]	CLF (level)[3]	CTK	ACTK	CLF (%-pt)[2]	CLF (level)[3]
TOTAL MARKET	***100.0%***	**-0.8%**	**11.2%**	**-5.1%**	**42.1%**	**-3.3%**	**3.2%**	**-5.7%**	**42.1%**
International	*86.9%*	-0.4%	10.8%	-5.4%	47.7%	-3.4%	0.9%	-4.5%	47.7%

[1]% of industry CTKs in 2022 [2]Change in load factor [3]Load factor level

growth for dedicated freighters remained weak in July at only 2.1% YoY.

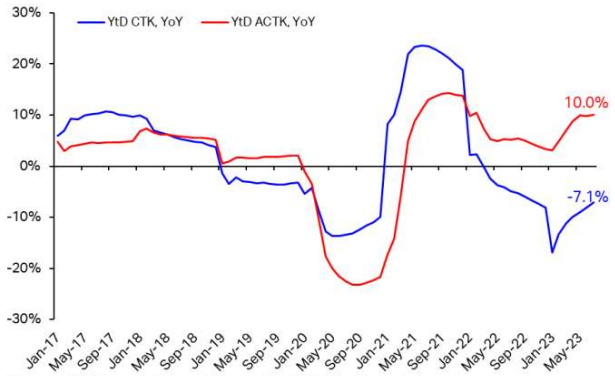
Chart 3 – Global ACTKs (billions per month)



Sources: IATA Sustainability and Economics, IATA Monthly Statistics

Year-to-date (YTD) industry CTKs reached 136.5 billion in July, steadily approaching 2022 levels. The annual contraction rate decreased from 8.1% in June to 7.1% this month. Meanwhile, YTD industry ACTKs totaled 313.8 billion, a substantial 10.0% increase above 2022 levels **(Chart 4)**. With the current softening of air cargo demand, it is anticipated that the growth of YTD air cargo capacity will slow down in the upcoming months.

Chart 4 – Year-to-date CTKs and ACTKs, year-on-year % change



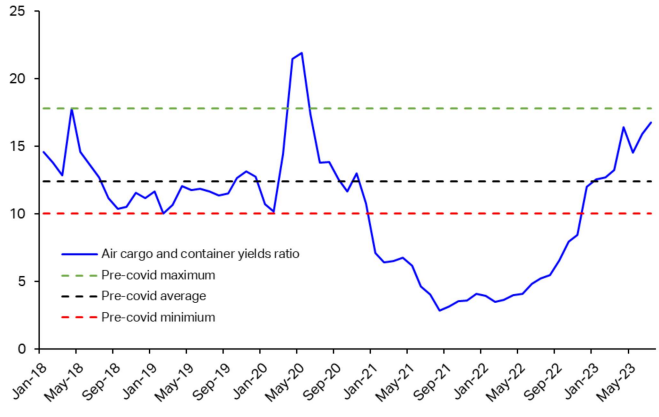
Sources: IATA Sustainability and Economics, IATA Monthly Statistics

Global goods trade remained sluggish

In June, Global goods trade sustained its annual decline, falling by 2.5% compared with 2022 levels. The weak activity in global trade reflects the cooling demand environment. The performance of air cargo relative to global trade, as measured by the difference between the growth rates of global goods trade and industry CTKs, shrank to -0.8 ppts in June, the smallest gap since January 2022. However, this difference highlights that the slowdown in global trade continues to impact air cargo more significantly than container cargo.

The weaker performance in global air cargo demand compared to maritime shipping in part reflects the pricing dynamics between the two transportation modes. Container yields in June declined by 81.3% YoY, reaching levels equivalent to those seen in 2019. In contrast, air cargo yields remained 35.4% higher than their 2019 levels. Consequently, the ratio of air cargo yields to container cargo yields is approaching its pre-pandemic maximum, implying a relative pricing advantage in favor of maritime shipping **(Chart 5)**.

Chart 5 – Ratio of chargeable weight rates (USD per kg) for air cargo and container shipping



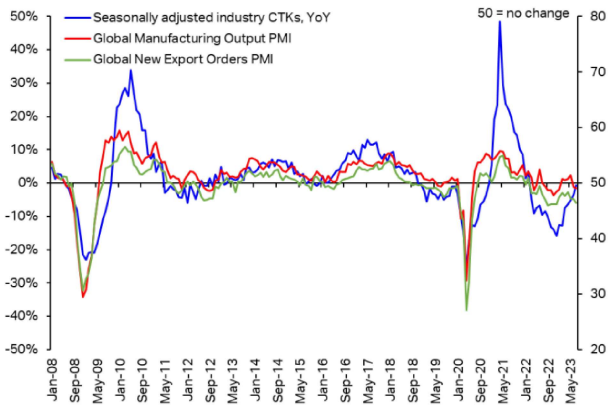
Source: IATA Sustainability and Economics, Boeing, IATA CargoIS, Freightos Baltic Index

Manufacturing output and new export orders continued to decline in July

The manufacturing output and new export order Purchasing Managers Indexes (PMIs) have historically served as leading indicators of global air cargo demand. Therefore, we closely monitor developments in these PMIs at a global level **(Chart 6)** and for major economies **(Chart 7)**.

In July, both manufacturing output PMI (49.0) and new export orders PMI (46.4) were below the critical threshold represented by the 50-mark, indicating a decline in global manufacturing production and exports **(Chart 6)**. In contrast, air cargo performance maintained its recovery trend in July.

Chart 6 – CTK (SA) growth, global manufacturing output and global new export orders PMIs (50 = no change)

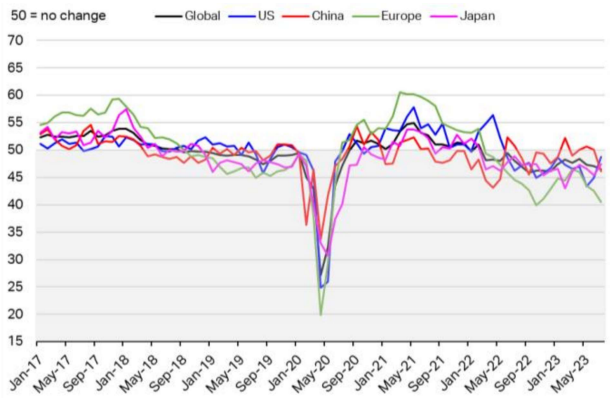


Sources: IATA Sustainability and Economics, IATA Monthly Statistics, S&P Global Markit

The decline in global new export orders PMI reflects the widespread softening of global goods trade. The downward trends in export orders were observed in major economies **(Chart 7)**. In July, all the major economies we track recorded new export order PMIs below the 50-mark. The new export PMI in the US was 48.7, despite a 3.7 ppt improvement compared with June. China's new export PMI dropped below 50 to 46.1 in July after staying slightly above 50 over the second quarter of 2023. Europe registered the lowest export order PMI at 40.5 in July, while Japan's PMI improved by 2 ppts to 47.4 from the June level.

The significant decline in China's new export orders PMIs mirrors the deceleration of the country's economy, which has heavily relied on exports for the past decade. Notably, China's housing sector has exhibited weakness, with property sales experiencing a decline of 4.7% YoY over the first seven months of this year. China's weakening economic performance is a concerning development that could impact both the global economy and air cargo industry.

Chart 7 – New export orders PMI in major economies (50 = no change)

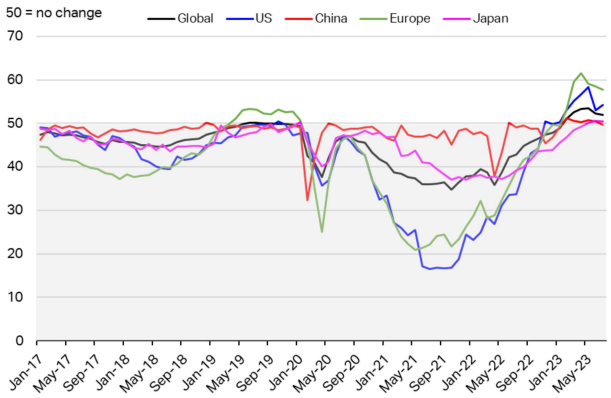


Sources: IATA Sustainability and Economics, S&P Global Markit

Supplier delivery times improved amid the soft demand environment

The suppliers' delivery time PMIs provide more insights into the recovery of the global supply chain **(Chart 8)**. In July, the global supplier delivery time PMI stood at 51.9, indicating fewer delays were experienced in the global supply chains under the weak export demand environment. Similarly, all major economies we track had PMIs above the 50-mark in July, with the exception of China (49.6). The US recorded a supplier delivery time PMI of 54.2, with Europe and Japan PMIs at 57.7 and 50.4, respectively.

Chart 8 – Supplier delivery times PMI (50 = no change)

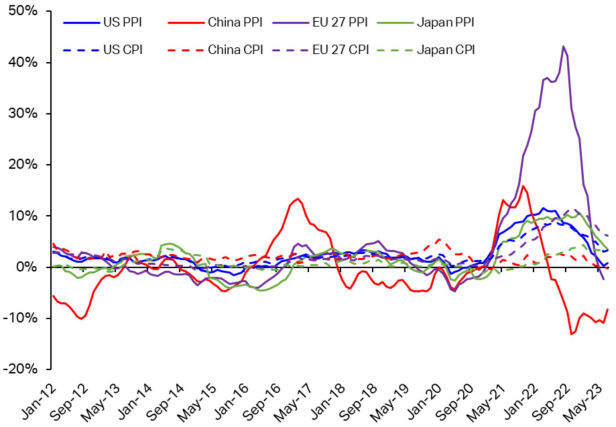


Sources: IATA Sustainability and Economics, S&P Global Markit

Mixed picture of inflation in major economies

After 13 months of slowdown, the annual growth of the US headline Consumer Price Index (CPI) increased for the first time in July, from 3.1% in June to 3.3% in July. In comparison, the YoY growth of CPI in the EU 27 countries continued to decrease to 6.1% in July (declined by 0.3 ppts compared to June), while Japan's CPI annual growth was unchanged at 3.3% compared to the previous month. China's CPI experienced an annual contraction of 0.2% in July, marking the first time that the country saw an annual decline in CPI since February 2021 **(Chart 9)**.

Chart 9 – Headline CPI and PPI inflation (YoY) in major economies



Sources: IATA Sustainability and Economics, Macrobond

Changes in producer prices in July, as measured by the Producer Price Index (PPI), were also mixed. The US saw an expansion of the annual growth in PPI from 0.3% in June to 0.8% in July, while Japan recorded a 3.6% YoY growth this month. China's PPI contracted 8.3% YoY in July. July PPI data for EU 27 countries has not been released yet, but it had declined by 2.4% YoY in June **(Chart 9)**.

As both the CPI and PPI in China show negative annual growth, the country is encountering growing deflationary pressures within its economy. A broader

pattern of falling prices across various sectors of China's economy poses challenges for stimulating consumer and business spending, as well as investment. This, in turn, is expected to have an adverse impact on air cargo demand in China.

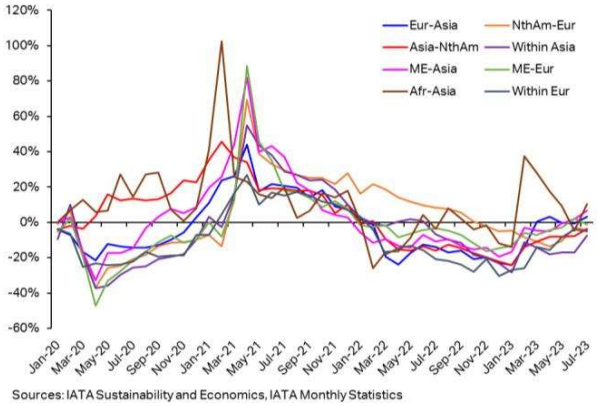
Three major trade lanes recorded growth, while demand also improved within Asia

International CTKs on the major trade lanes continued to show positive trends in July **(Chart 10)**. Notably, the Europe – Asia trade lane registered a 3.2% YoY growth this month, putting an end to the annual contractions seen over the second quarter. The Middle East – Asia market expanded its YoY growth from 1.8% in June to 6.6% in July. Meanwhile, the Africa – Asia trade lane saw the greatest improvement in its international CTKs in July, rebounding to double-digit growth of 10.3% YoY, following an annual contraction in June.

International air cargo demand within Asia slowed its annual decline by almost 10 ppts, from -17.2% in June to -7.5% in July. Despite remaining the worst performing market in July, the within Asia trade lane saw the smallest YoY contraction since August 2022.

The North America – Europe market recorded a 4.3% annual decline in July, which was slightly worse compared with the previous month. Similarly, the within Europe market contracted by 5.1% in July. In contrast, international CTKs on the Asia – North America trade lane declined by 3.5% in July, representing an improvement from their 7.7% annual contraction in June.

Chart 10 – International CTK growth (YoY) by route area



Sources: IATA Sustainability and Economics, IATA Monthly Statistics

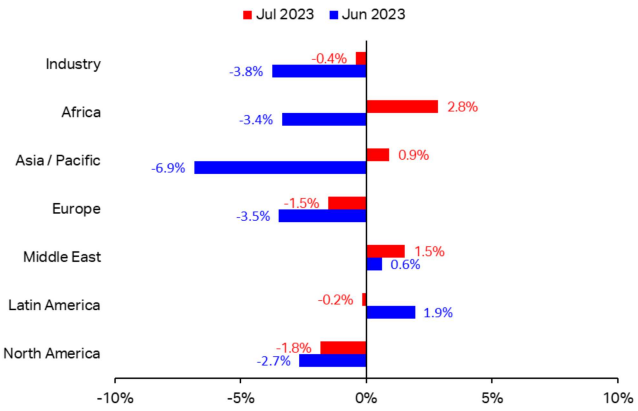
Asia Pacific airlines registered their first annual growth in international CTKs since March 2022

International CTKs narrowed their annual contractions from 3.8% in June to only 0.4% in July. The positive development in international air cargo demand was driven by the YoY growth achieved by airlines in Asia Pacific (0.9%), Middle East (1.5%), and Africa (2.8%) **(Chart 11)**. Particularly, it was the first annual growth seen by carriers registered in the Asia Pacific region since March 2022.

The growth of international CTKs by Asia Pacific airlines is a result of improvements of air cargo traffic on the Europe – Asia, Middle East – Asia, Africa – Asia, and the within Asia trade lanes **(Chart 10)**. African and Middle East airlines also benefited from this trend, seeing 1.5% and 2.8% annual growth in July, respectively.

On the other hand, airlines in Latin America faced an annual decline of 0.2% in their international CTKs in July, after growing 1.9% YoY in the previous month. North American and European airlines also registered YoY contractions of 1.8% and 1.5% this month, respectively. Nonetheless, these figures represent an improvement from their performances in June **(Chart 11)**.

Chart 11 – Growth in international CTKs by airline region of registration (YoY)



Sources: IATA Sustainability and Economics, IATA Monthly Statistics

Air cargo market in detail - July 2023

	World share[1]	July 2023 (% year-on-year) CTK	ACTK	CLF (%-pt)[2]	CLF (level)[3]	July 2023 (% ch vs the same month in 2019) CTK	ACTK	CLF (%-pt)[2]	CLF (level)[3]
TOTAL MARKET	***100.0%***	**-0.8%**	**11.2%**	**-5.1%**	**42.1%**	**-3.3%**	**3.2%**	**-2.8%**	**42.1%**
Africa	*2.0%*	2.9%	11.0%	-3.3%	41.7%	3.1%	-18.0%	8.5%	41.7%
Asia Pacific	*32.4%*	2.7%	26.0%	-10.4%	45.7%	-4.1%	8.7%	-6.1%	45.7%
Europe	*21.8%*	-1.5%	5.3%	-3.3%	47.2%	-14.1%	-11.8%	-1.2%	47.2%
Latin America	*2.7%*	0.4%	10.0%	-3.1%	32.2%	-0.7%	9.0%	-3.1%	32.2%
Middle East	*13.0%*	1.5%	17.1%	-6.3%	41.1%	1.7%	12.0%	-4.2%	41.1%
North America	*28.1%*	-5.2%	0.5%	-2.2%	37.0%	5.8%	6.4%	-0.2%	37.0%
International	***86.9%***	**-0.4%**	**10.8%**	**-5.4%**	**47.7%**	**-3.4%**	**0.9%**	**-2.1%**	**47.7%**
Africa	*2.0%*	2.8%	10.8%	-3.3%	42.5%	4.0%	-17.6%	8.8%	42.5%
Asia Pacific	*29.7%*	0.9%	18.4%	-9.4%	54.1%	-3.4%	5.1%	-4.8%	54.1%
Europe	*21.5%*	-1.5%	6.0%	-3.8%	49.6%	-14.5%	-13.4%	-0.6%	49.6%
Latin America	*2.3%*	-0.2%	13.8%	-5.1%	36.5%	1.7%	20.0%	-6.6%	36.5%
Middle East	*13.0%*	1.5%	17.3%	-6.4%	41.4%	1.7%	12.1%	-4.2%	41.4%
North America	*18.4%*	-1.8%	2.0%	-1.7%	44.8%	8.6%	4.8%	1.5%	44.8%

[1]% of industry CTKs in 2022 [2]Change in load factor [3]Load factor level

Note: the total industry and regional grow th rates are based on a constant sample of airlines combining reported data and estimates for missing observations. Airline traffic is allocated according to the region in w hich the carrier is registered; it should not be considered as regional traffic. Historical statistics are subject to revision.

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भारत 2023 INDIA

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ONE EARTH • ONE FAMILY • ONE FUTURE

G20 New Delhi Leaders' Declaration

New Delhi, India, 9-10 September 2023

Preamble

1. We are One Earth, One Family, and we share One Future.

2. We, the Leaders of the G20, met in New Delhi on 9-10 September 2023, under the theme 'Vasudhaiva Kutumbakam'. We meet at a defining moment in history where the decisions we make now will determine the future of our people and our planet. It is with the philosophy of living in harmony with our surrounding ecosystem that we commit to concrete actions to address global challenges.

3. G20 cooperation is essential in determining the course the world takes. Headwinds to global economic growth and stability persist. Years of cascading challenges and crises have reversed gains in the 2030 Agenda and its Sustainable Development Goals (SDGs). Global greenhouse gas (GHG) emissions continue to increase, with climate change, biodiversity loss, pollution, drought, land degradation and desertification threatening lives and livelihoods. Rising commodity prices, including food and energy prices are contributing to cost of living pressures. Global challenges like poverty and inequality, climate change, pandemics and conflicts disproportionately affect women and children, and the most vulnerable.

4. Together we have an opportunity to build a better future. Just energy transitions can improve jobs and livelihoods, and strengthen economic resilience. We affirm that no country should have to choose between fighting poverty and fighting for our planet. We will pursue development models that implement sustainable, inclusive and just transitions globally, while leaving no one behind.

5. As Leaders of G20, the premier global forum for international economic cooperation, we resolve to act in concrete ways through partnerships. We commit to:

    a. Accelerate strong, sustainable, balanced and inclusive growth.

    b. Accelerate the full and effective implementation of the 2030 Agenda for Sustainable Development.

    c. Pursue low-GHG/low-carbon emissions, climate-resilient and environmentally sustainable development pathways by championing an integrated and inclusive approach. We will urgently accelerate our actions to address development and climate challenges, promote Lifestyles for Sustainable Development (LiFE), and conserve biodiversity, forests and oceans.

    d. Improve access to medical countermeasures and facilitate more supplies and production capacities in developing countries to prepare better for future health emergencies.

    e. Promote resilient growth by urgently and effectively addressing debt vulnerabilities in developing countries.

    f. Scale up financing from all sources for accelerating progress on SDGs.

g. Accelerate efforts and enhance resources towards achieving the Paris Agreement, including its temperature goal.

h. Pursue reforms for better, bigger and more effective Multilateral Development Banks (MDBs) to address global challenges to maximise developmental impact.

i. Improve access to digital services and digital public infrastructure, and leverage digital transformation opportunities to boost sustainable and inclusive growth.

j. Promote sustainable, quality, healthy, safe and gainful employment.

k. Close gender gaps and promote the full, equal, effective and meaningful participation of women in the economy as decision-makers.

l. Better integrate the perspectives of developing countries, including LDCs, LLDCs, and SIDS, into future G20 agenda and strengthen the voice of developing countries in global decision making.

6. Through these actions today, we are building towards a system that better empowers countries to address global challenges, is human-centric, and brings prosperity and well-being to humanity.

For the Planet, People, Peace and Prosperity

7. We note with deep concern the immense human suffering and the adverse impact of wars and conflicts around the world.

8. Concerning the war in Ukraine, while recalling the discussion in Bali, we reiterated our national positions and resolutions adopted at the UN Security Council and the UN General Assembly (A/RES/ES-11/1 and A/RES/ES-11/6) and underscored that all states must act in a manner consistent with the Purposes and Principles of the UN Charter in its entirety. In line with the UN Charter, all states must refrain from the threat or use of force to seek territorial acquisition against the territorial integrity and sovereignty or political independence of any state. The use or threat of use of nuclear weapons is inadmissible.

9. Reaffirming that the G20 is the premier forum for international economic cooperation, and recognizing that while the G20 is not the platform to resolve geopolitical and security issues, we acknowledge that these issues can have significant consequences for the global economy.

10. We highlighted the human suffering and negative added impacts of the war in Ukraine with regard to global food and energy security, supply chains, macro-financial stability, inflation and growth, which has complicated the policy environment for countries, especially developing and least developed countries which are still recovering from the COVID-19 pandemic and the economic disruption which has derailed progress towards the SDGs. There were different views and assessments of the situation.

11. We appreciate the efforts of Türkiye and UN-brokered Istanbul Agreements consisting of the Memorandum of Understanding between the Russian Federation and the

Secretariat of the United Nations on Promoting Russian Food Products and Fertilizers to the World Markets and the Initiative on the Safe Transportation of Grain and Foodstuffs from Ukrainian Ports (Black Sea Initiative), and call for their full, timely and effective implementation to ensure the immediate and unimpeded deliveries of grain, foodstuffs, and fertilizers/inputs from the Russian Federation and Ukraine. This is necessary to meet the demand in developing and least developed countries, particularly those in Africa.

12. In this context, emphasizing the importance of sustaining food and energy security, we called for the cessation of military destruction or other attacks on relevant infrastructure. We also expressed deep concern about the adverse impact that conflicts have on the security of civilians thereby exacerbating existing socio-economic fragilities and vulnerabilities and hindering an effective humanitarian response.

13. We call on all states to uphold the principles of international law including territorial integrity and sovereignty, international humanitarian law, and the multilateral system that safeguards peace and stability. The peaceful resolution of conflicts, and efforts to address crises as well as diplomacy and dialogue are critical. We will unite in our endeavour to address the adverse impact of the war on the global economy and welcome all relevant and constructive initiatives that support a comprehensive, just, and durable peace in Ukraine that will uphold all the Purposes and Principles of the UN Charter for the promotion of peaceful, friendly, and good neighbourly relations among nations in the spirit of 'One Earth, One Family, One Future'.

14. Today's era must not be of war.

A. Strong, Sustainable, Balanced, and Inclusive Growth

Global Economic Situation

15. Cascading crises have posed challenges to long-term growth. Facing an uneven recovery, and cognizant of the need to boost long-term growth, we will implement well-calibrated macroeconomic and structural policies. We will protect the vulnerable, through promoting equitable growth and enhancing macroeconomic and financial stability. Such an approach will help resolve the cost-of-living crisis and unlock strong, sustainable, balanced, and inclusive growth.

16. Global economic growth is below its long-run average and remains uneven. The uncertainty around the outlook remains high. With notable tightening in global financial conditions, which could worsen debt vulnerabilities, persistent inflation and geoeconomic tensions, the balance of risks remains tilted to the downside. We, therefore, reiterate the need for well-calibrated monetary, fiscal, financial, and structural policies to promote growth, reduce inequalities and maintain macroeconomic and financial stability. We will continue to enhance macro policy cooperation and support the progress towards the 2030 Agenda for Sustainable Development. We reaffirm that achieving strong, sustainable, balanced and inclusive growth (SSBIG) will require policymakers to stay agile and flexible in their policy response, as evidenced during the recent banking turbulence in a few advanced economies where expeditious action by relevant authorities helped to maintain financial stability and manage spillovers. We welcome the initial steps taken by the Financial Stability Board (FSB), Standard Setting

vi. Emphasize the importance of enabling life-long learning focused on skilling, reskilling, and upskilling especially for vulnerable groups.

Culture as a Transformative Driver of SDGs

31. We call for the full recognition and protection of culture with its intrinsic value as a transformative driver and an enabler for the achievement of the SDGs and advance the inclusion of culture as a standalone goal in future discussions on a possible post-2030 development agenda. We reiterate our commitment to strengthen our fight against illicit trafficking of cultural property at national, regional or international levels to enable its return and restitution to their countries and communities of origin as relevant, and call for sustained dialogue and action in that endeavour, with a view to strengthen cultural diplomacy and intercultural exchanges, consistent with national law and relevant UNESCO Conventions. We encourage the international community to protect the living cultural heritage, including the intellectual property, notably with regard to the impact of the over commercialization and misappropriation of such living heritage on the sustainability and on the livelihoods of practitioners and community bearers as well as Indigenous Peoples.

C. Green Development Pact for a Sustainable Future

32. Recognising that the prosperity and well-being of present and future generations depends on our current development and other policy choices and actions, we resolve to pursue environmentally sustainable and inclusive economic growth and development in an integrated, holistic and balanced manner.

33. We commit to urgently accelerate our actions to address environmental crises and challenges including climate change. We recognize that the impacts of climate change are being experienced worldwide, particularly by the poorest and the most vulnerable, including in LDCs and SIDS. Mindful of our leadership role, we reaffirm our steadfast commitments, in pursuit of the objective of UNFCCC, to tackle climate change by strengthening the full and effective implementation of the Paris Agreement and its temperature goal, reflecting equity and the principle of common but differentiated responsibilities and respective capabilities, in light of different national circumstances. We note with concern that global ambition and implementation to address climate change remain insufficient to achieve the temperature goal of the Paris Agreement to hold the increase in the global average temperature to well below 2°C above pre-industrial levels, and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels. We highlight the importance of ambitious action on all pillars of the Paris Agreement, taking into account the best available science. Noting the IPCC assessments, that the impacts of climate change will be much lower at a temperature increase of 1.5°C compared with 2°C, we reiterate our resolve to pursue further efforts to limit the increase to 1.5°C. This will require meaningful and effective actions and commitment by all countries, taking into account different approaches, through the development of clear national pathways that align long term ambition with short and medium-term goals, and with international cooperation and support, including finance and technology and sustainable and responsible consumption and production as critical enablers, in the context of sustainable development. We recognize that limiting global warming to 1.5°C requires rapid, deep and sustained reductions in global GHG emissions of 43% by 2030 relative to the 2019 levels. We also take note of the finding

of the IPCC AR6 Synthesis Report, based on global modelled pathways and assumptions, stating that "Global GHG emissions are projected to peak between 2020 and at the latest before 2025 in global modelled pathways that limit warming to 1.5°C with no or limited overshoot and in those that limit warming to 2°C and assume immediate action." This does not imply peaking in all countries within this timeframe; timeframes for peaking may be shaped by sustainable development, poverty eradication needs, equity, and in line with different national circumstances. We further recognize that technology development and transfer on voluntary and mutually agreed terms, capacity building and financing can support countries in this regard.

34. We urge all countries that have not yet aligned their NDCs with the temperature goal of the Paris Agreement, to revisit and strengthen the 2030 targets in their NDCs, as necessary, by the end of 2023, taking into account different national circumstances, and we welcome those who have already done so. We recall the nationally determined nature of NDCs and Article 4.4 of the Paris Agreement, which provides that "Developed country Parties should continue taking the lead by undertaking economy-wide absolute emission reduction targets. Developing country Parties should continue enhancing their mitigation efforts, and are encouraged to move over time towards economy-wide emission reduction or limitation targets in the light of different national circumstances." In this context, we commend those countries whose NDCs include economy-wide targets covering all GHGs, and others are encouraged to include such economy-wide targets in their upcoming NDC cycle(s), in the light of different national circumstances. We will contribute to a successful conclusion of the first global stocktake at COP28 in Dubai, that drives enhanced climate action across mitigation, adaptation, and means of implementation and support. We reiterate our commitment to achieve global net zero GHG emissions/carbon neutrality by or around mid-century, while taking into account the latest scientific developments and in line with different national circumstances, taking into account different approaches including the Circular Carbon Economy, socio-economic, technological, and market development, and promoting the most efficient solutions.

Macroeconomic risks stemming from climate change and transition pathways

35. The macroeconomic costs of the physical impacts of climate change are significant both at aggregate and country levels, and the cost of inaction substantially outweighs that of orderly and just transitions. We recognise the importance of international dialogue and cooperation, including in the areas of finance and technology, and timely policy action consistent with country-specific circumstances. It is also critical to assess and account for the short, medium and long-term macroeconomic impact of both the physical impact of climate change and transition policies, including on growth, inflation, and unemployment. We endorse the G20 Report on Macroeconomic Risks Stemming from Climate Change and Transition Pathways. Building on analysis in this Report, we will consider further work on the macroeconomic implications, as appropriate, particularly as relevant for fiscal and monetary policies, drawing on the inputs from a diverse set of stakeholders.

Mainstreaming Lifestyles for Sustainable Development (LiFE)

36. Based on the G20 High-Level Principles on Lifestyles for Sustainable Development, we commit to robust collective actions that will enable the world to embrace sustainable

production and consumption patterns and mainstream Lifestyles for Sustainable Development. Relevant studies on it show that it could contribute to significant emission reduction by 2030 for a global net-zero future. We support the creation of an enabling policy environment to promote sustainable lifestyles for climate action. Towards this end, we:

i. Commit to implement the G20 High-Level Principles on Lifestyles for Sustainable Development.

ii. Support the implementation of the High-Level Principles (HLPs) through international cooperation, financial support, and development, deployment and dissemination of technology. We encourage International Organizations to incorporate the HLPs into their programs, as appropriate.

iii. Note the launch of "Travel for LiFE" and support the development of smart destinations that are responsible and sustainable.

Designing a Circular Economy World

37. In order to endeavour to decouple our economic growth from environmental degradation and enhance sustainable consumption and production, including primary resource consumption while supporting economic growth, we acknowledge the critical role played by circular economy, extended producer responsibility and resource efficiency in achieving sustainable development. We thank the Indian presidency in launching Resource Efficiency and Circular Economy Industry Coalition (RECEIC). We commit to enhance environmentally sound waste management, substantially reduce waste generation by 2030, and highlight the importance of zero waste initiatives.

Implementing Clean, Sustainable, Just, Affordable & Inclusive Energy Transitions

38. We commit to accelerating clean, sustainable, just, affordable and inclusive energy transitions following various pathways, as a means of enabling strong, sustainable, balanced and inclusive growth and achieve our climate objectives. We recognise the needs, vulnerabilities, priorities and different national circumstances of developing countries. We support strong international and national enabling environments to foster innovation, voluntary and mutually agreed technology transfer, and access to low-cost financing. To this end, we:

i. Emphasise the importance of maintaining uninterrupted flows of energy from various sources, suppliers and routes, exploring paths of enhanced energy security and market stability, including through inclusive investments to meet the growing energy demand, in line with our sustainable development and climate goals, while promoting open, competitive, non-discriminatory and free international energy markets.

ii. Recognizing that developing countries need to be supported in their transitions to low carbon/emissions, we will work towards facilitating low-cost financing for them.

iii. Support the acceleration of production, utilization, as well as the development of transparent and resilient global markets for hydrogen produced from zero and low-

emission technologies and its derivatives such as ammonia, by developing voluntary and mutually agreed harmonising standards as well as mutually recognised and inter-operable certification schemes. To realise this, we affirm the 'G20 High Level Voluntary Principles on Hydrogen', to build a sustainable and equitable global hydrogen ecosystem that benefits all nations. We take note of the Presidency's initiative to establish the Green Hydrogen Innovation Centre steered by the International Solar Alliance (ISA).

iv. Will work towards facilitating access to low-cost financing for developing countries, for existing as well as new and emerging clean and sustainable energy technologies and for supporting the energy transitions. We note the report on "Low-cost Financing for the Energy Transitions" prepared under the Indian Presidency and its estimation that the world needs an annual investment of over USD 4 trillion, with a high share of renewable energy in the primary energy mix.

v. Will pursue and encourage efforts to triple renewable energy capacity globally through existing targets and policies, as well as demonstrate similar ambition with respect to other zero and low-emission technologies, including abatement and removal technologies, in line with national circumstances by 2030. We also note the 'Voluntary Action Plan for Promoting Renewable Energy to Accelerate Universal Energy Access'.

vi. Pledge to advance cooperation initiatives to develop, demonstrate and deploy clean and sustainable energy technologies and solutions and other efforts for innovation.

vii. Take note of the 'Voluntary Action Plan on Doubling the Rate of Energy Efficiency Improvement by 2030'.

viii. Recognize the importance of sustainable biofuels in our zero and low- emission development strategies, and note the setting up of a Global Biofuels Alliance.

ix. Support reliable, diversified, sustainable and responsible supply chains for energy transitions, including for critical minerals and materials beneficiated at source, semi-conductors and technologies. We take note of the Presidency's "Voluntary High-Level Principles for Collaboration on Critical Minerals for Energy Transitions".

x. For countries that opt to use civil nuclear energy, will collaborate on voluntary and mutually agreed terms, in research, innovation, development & deployment of civil nuclear technologies including advanced and Small Modular Reactors (SMRs), in accordance with national legislations. These countries will promote responsible nuclear decommissioning, radioactive waste and spent fuel management and mobilizing investments, and share knowledge and best practices, through strengthening international cooperation to promote nuclear safety globally.

xi. Recognize the role of grid interconnections, resilient energy infrastructure and regional/cross-border power systems integration, where applicable in enhancing energy security, fostering economic growth and facilitating universal energy access for all.

xii. Will increase our efforts to implement the commitment made in 2009 in Pittsburgh to phase-out and rationalise, over the medium term, inefficient fossil fuel subsidies that encourage wasteful consumption and commit to achieve this objective, while providing targeted support for the poorest and the most vulnerable.

xiii. Recognise the importance to accelerate the development, deployment and dissemination of technologies, and the adoption of policies, to transition towards low-emission energy systems, including by rapidly scaling up the deployment of clean power generation, including renewable energy, as well as energy efficiency measures, including accelerating efforts towards phasedown of unabated coal power, in line with national circumstances and recognizing the need for support towards just transitions.

Delivering on Climate and Sustainable Finance

39. We welcome the Sustainable Finance Working Group (SFWG) recommendations on the mechanisms to support the timely and adequate mobilisation of resources for climate finance while ensuring support for transition activities in line with country circumstances. We also recognise the significant role of public finance as an important enabler of climate actions, such as leveraging much-needed private finance through blended financial instruments, mechanisms and risk-sharing facilities to address both adaptation and mitigation efforts in a balanced manner for reaching ambitious Nationally Determined Contributions (NDCs), carbon neutrality and net-zero considering different national circumstances. We welcome the SFWG recommendations for scaling up blended finance and risk-sharing facilities, including the enhanced role of MDBs in mobilizing climate finance. We underscore the importance of maximizing the effect of concessional resources, such as those of the multilateral climate funds, to support developing countries' implementation of the Paris Agreement and call for an ambitious second replenishment process of the Green Climate Fund for its upcoming 2024-2027 programming period We will undertake work to facilitate access to multilateral climate funds and enhance their leverage and ability to mobilize private capital. Recognizing the importance of supporting the commercialization of early-stage technologies that avoid, abate and remove greenhouse gas emissions and facilitate adaptation, we note the recommendations on financial solutions, policies, and incentives to encourage greater private flows for the rapid development, demonstration, and deployment of green and low-emission technologies. We reiterate the importance of a policy mix consisting of fiscal, market and regulatory mechanisms, including, as appropriate, the use of carbon pricing and non-pricing mechanisms and incentives toward carbon neutrality and net zero.

40. We endorse the multi-year G20 Technical Assistance Action Plan (TAAP) and the voluntary recommendations made to overcome data-related barriers to climate investments. We encourage the implementation of TAAP by relevant jurisdictions and stakeholders in line with the national circumstances. We look forward to reporting on the progress made in the implementation of the G20 Sustainable Finance Roadmap, which is voluntary and flexible in nature, and call for further efforts to advance the Roadmap's recommended actions that will scale up sustainable finance, including, among others, the implementation of the Transition Finance Framework. We look forward to the 2023 G20 Sustainable Finance Report. We welcome the finalization of the sustainability and climate-related disclosure standards published by the

International Sustainability Standards Board (ISSB) in June 2023, which provide the mechanisms that address proportionality and promote interoperability. It is important that flexibility, to take into account country-specific circumstances, is preserved in the implementation of those standards. When put into practice as above, those standards will help support globally comparable and reliable disclosures.

41. We recognise the need for increased global investments to meet our climate goals of the Paris Agreement, and to rapidly and substantially scale up investment and climate finance from billions to trillions of dollars globally from all sources. In this regard, it is essential to align all relevant financial flows with these objectives while scaling up finance, capacity building and technology transfer on voluntary and mutually agreed terms, taking into account the priorities and needs of developing countries. To achieve this, we:

i. Note the need of USD 5.8-5.9 trillion in the pre-2030 period required for developing countries, in particular for their needs to implement their NDCs, as well as the need of USD 4 trillion per year for clean energy technologies by 2030 to reach net zero emissions by 2050.

ii. We recall and reaffirm the commitment made in 2010 by the developed countries to the goal of mobilizing jointly USD 100 billion climate finance per year by 2020, and annually through 2025, to address the needs of the developing countries, in the context of meaningful mitigation action and transparency in implementation. Developed country contributors expect this goal to be met for the first time in 2023.

iii. We will work to successfully implement the decision at COP27 on funding arrangements for responding to loss and damage for assisting developing countries that are particularly vulnerable to the adverse effects of climate change, including establishing a fund. We will support the Transitional Committee established in this regard, and look forward to its recommendations on operationalization of the new funding arrangements including a fund at COP28.

iv. Call on Parties to set an ambitious, transparent and trackable New Collective Quantified Goal (NCQG) of climate finance in 2024, from a floor of USD 100 billion a year, taking into account the needs and priorities of developing countries in fulfilling the objective of the UNFCCC and implementation of the Paris Agreement.

v. Recalling para 18 of the Glasgow Climate Pact, we urge the developed countries to fulfil their commitment to at least double their collective provision of adaptation finance from 2019 levels by 2025, in the context of achieving scaled up financial resources.

vi. Call on all relevant financial institutions, such as MDBs and multilateral funds to further strengthen their efforts including by setting ambitious adaptation finance targets and announcing, where appropriate, revised and enhanced 2025 projections.

vii. Acknowledge the vital role of private climate finance in supplementing public climate finance and encourage the development of financing mechanisms such as blended finance, de-risking instruments and green bonds for projects in developing countries.

Conserving, Protecting, Sustainably Using and Restoring Ecosystems

42. We emphasize the importance of healthy ecosystems in addressing climate change, biodiversity loss, desertification, drought, land degradation, pollution, food insecurity and water scarcity. We commit to restoring by 2030 at least 30% of all degraded ecosystems and scaling up efforts to achieve land degradation neutrality. To achieve this, we:

i. Commit to the swift, full and effective implementation of the Kunming-Montreal Global Biodiversity Framework (GBF), and encourage others to do the same, and encourage actions to halt and reverse biodiversity loss by 2030. We also call for enhanced financial resources from all sources. To this end, we welcome the recent establishment of the Global Biodiversity Framework Fund within the Global Environment Facility (GEF).

ii. Support the G20 ambition to reduce land degradation by 50% by 2040 on a voluntary basis, as committed under the G20 Global Land Initiative (GLI) and note the discussions on the Gandhinagar Implementation Roadmap and the Gandhinagar Information Platform.

iii. Recognize that forests provide crucial ecosystem services, as well as for climate purposes acting as sinks, at the global and local levels for the environment, climate and people. We will scale up efforts to protect, conserve and sustainably manage forests and combat deforestation, in line with internationally agreed timelines, highlighting the contributions of these actions for sustainable development and taking into account the social and economic challenges of local communities and indigenous peoples. In the context of forests, we will avoid discriminatory green economic policies, consistent with WTO rules and multilateral environmental agreements. We are committed to mobilizing new and additional finance for forests from all sources, including concessional and innovative financing, in particular for developing countries. We commit to prevention and mitigation of wildfires and remediation of mining-degraded lands.

iv. Call for enhancing global cooperation and sharing of best practices on water, and welcome the deliberations at the UN 2023 Water Conference and G20 Dialogue on Water.

~~***Harnessing and Preserving the Ocean-based Economy***~~

43. We commit to conserving, protecting, restoring and sustainably using the world's ocean, marine ecosystems, and look forward to make progress and in this regard, contribute to the 2025 UN Ocean Conference. To this end, we:

i. Welcome the Chennai High-Level Principles for a Sustainable and Resilient Blue/Ocean-based Economy.

https://www.offshorewind.biz/2023/09/01/new-york-offshore-wind-developers-ask-for-inflation-related-price-relief-nyserda-argues-some-requests-not-tied-to-inflationary-pressures/

New York Offshore Wind Developers Ask for Inflation-Related Price Relief, NYSERDA Argues Some Requests 'Not Tied to Inflationary Pressures'

September 1, 2023, by Adrijana Buljan

This summer, the developers of the Sunrise Wind (Ørsted and Eversource) and Empire Wind 1 & 2 and Beacon Wind projects (Equinor and BP) filed petitions with the New York State Public Service Commission (PSC), seeking price adjustments to their contracts with the New York State Energy Research and Development Authority (NYSERDA).

In response to the petition filings, NYSERDA filed a document with estimates on how much the requested modifications would increase the strike prices of the four offshore wind farms and also noted that some components of the petitioners' requests were not directly related to inflationary pressures.

In this article:

- The increase in strike prices for Empire Wind 2 and Beacon Wind would amount to over 60 per cent if all requests are accepted.
- NYSERDA in favour of inflation- and global market conditions-related price adjustments.

The developers requested enhanced terms in their offshore renewable energy credit (OREC) contracts that would adjust for inflation, and also include interconnection cost adjustment, with the joint venture between Equinor and BP also requesting an extension of the contract by five years for the 810 MW Empire Wind 1 offshore wind farm (from 25 to 30 years).

In their petitions, the developers said that without price adjustments their offshore wind projects might not be able to move forward, with Ørsted and Eversource saying that without this intervention *"it would not be able to obtain a final investment decision (FID) allowing it to fully construct the Project"* and the Equinor-BP joint venture noting that price adjustments would *"restore the Projects' ability to attract the capital required for them to move forward"*.

However, in its response, NYSERDA argues that some components of the companies' requests do not completely align with the relief in inflationary pressures on which the petitions are based.

"[The] relief requested by the Petitions includes a number of distinct components, each of which has an individual impact on strike price. Some of those components appear less appropriate to include in an adjustment", NYSERDA stated.

For the requests made by both developers to apply an interconnection cost-sharing term, NYSERDA says that they *"appear designed to make those projects whole for changes (whether or not related to inflation) to one particular aspect of project costs, rather than to address the market-wide, unforeseeable inflationary pressures that have affected all aspects of projects"*. NYSERDA added that the increases in interconnection costs would be, at least partially, mitigated through the inflation adjustment formula.

Furthermore, as Equinor and BP asked for a contract term extension for Empire Wind 1 and a Consumer Price Index (CPI)-based escalator for the duration of the contract for the 1.26 GW Empire Wind 2 and 1.23 GW Beacon Wind agreements, NYSERDA argues that these requests do not seem to be tied to the market-wide inflationary pressures and that they are *"not well-connected to the circumstances underpinning the request"*.

"Finally, the change to the weighting factor of the inflation adjuster from 80% to 100% proposed by Empire/Beacon exposes ratepayers to inflation's entire effects, whereas it could be more appropriate for at least some of inflation's effects to be borne by developers", NYSERDA said.

As for Ørsted and Eversource's 924 MW Sunrise Wind, the developers have requested that an inflation adjustment and interconnection cost adjustment mechanism similar to those included in NYSERDA's third offshore wind solicitation be applied to the project's strike price. According to NYSERDA, the interconnection cost adjustment requested by the Sunrise Wind project is estimated to have a significantly smaller impact on price than the inflation adjustment.

In its response to the petitions, filed with the New York PSC, NYSERDA has also provided estimated adjusted strike prices based on the relief mechanisms proposed by the developers, according to which implementing all the requests for all four projects would result in an increase of the weighted average strike prices by 48 per cent.

Looking at the price impact per developer, Ørsted and Eversource's request is equivalent to a 27 per cent increase to its existing strike price based on current index values, while Equinor and BP's requests for their three offshore wind farms would result in a 54 per cent increase on average across their portfolio of projects.

The Empire Wind 2 and Beacon Wind projects are estimated to have the biggest increase in strike prices if the requests in the petitions are approved, as the strike price for Empire Wind 2 would go up by 66 per cent and Beacon Wind's strike price would jump by 62 per cent, according to NYSERDA's estimates.

Project	Original Strike Price ($/MWh)	Adjusted Strike Price ($/MWh)	Strike Price Increase
Sunrise Wind	$110.37	$139.99	+27%
Empire Wind 1	$118.38[34]	$159.64[35]	+35%
Empire Wind 2	$107.50	$177.84	+66%
Beacon Wind	$118.00	$190.82	+62%
Empire/Beacon portfolio (Wtd. Avg.)	$114.43	$176.36	+54%
Portfolio (Wtd. Avg.)	$113.40	$167.25	+48%

NYSERDA

Aside from the components of the petitions for relief that are found not to be in line with the basis of the petitions that refer to inflation and adverse global market conditions, NYSERDA has also made the case for price adjustments to strengthen the offshore wind projects, as well as protect consumers, moving forward.

"[If] no price adjustment is made, progress to Climate Act targets would be slowed, opportunities to realize earlier grid reliability and health benefits, as well as substantial economic development, would be missed", NYSERDA states.

Inflation adjustment mechanisms were included in the last solicitations, so applying a price adjustment that implements similar principles would be consistent with the approach already taken recently. Furthermore, including a price adjuster that is based on dynamic indices would safeguard projects from future inflation and would consequently benefit ratepayers if inflationary trends reverse going forward, according to NYSERDA.

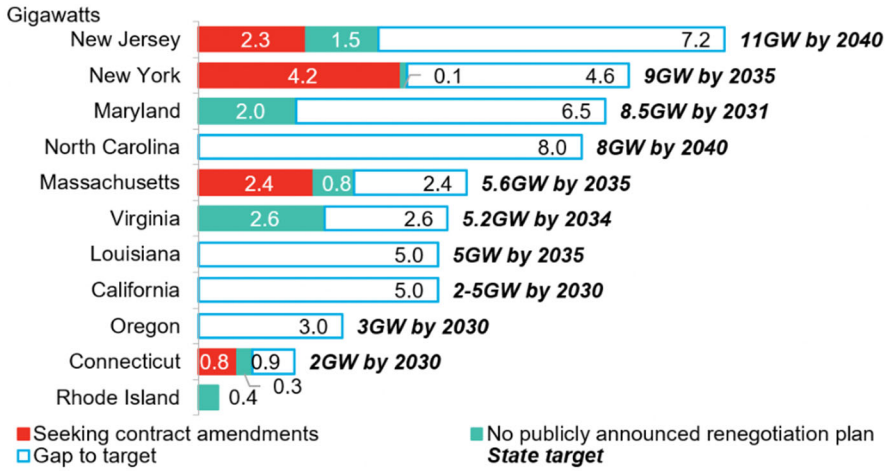
NYSERDA has pointed out that inflation, as well as certain market-wide developments and macroeconomic conditions affecting offshore wind such as supply chain bottlenecks and equipment costs, could not have reasonably been built into the prices bid into prior solicitations.

"Accordingly, applying an adjustment designed to adjust specifically for those matters would not undermine the competitiveness of prior solicitations or harm non-awardees in prior solicitations, nor would it be expected to provide a windfall to developers given that a well-designed price adjustment would correlate with actual cost exposures faced by projects", NYSERDA said.

Offshore Wind Goals in US Are Imperiled by Deal Revisions: BNEF
2023-07-10 14:00:00.0 GMT

By Atin Jain
(BloombergNEF) -- Several US states face a growing risk of missing their offshore wind goals due to a spate of contract renegotiation or cancellation attempts by project developers citing rising costs.
New York state has a target to add 9 gigawatts of cumulative offshore wind capacity by 2035 and contracted 4.36GW of projects in its two concluded solicitations. But renegotiation attempts mean that 95% of the contracted capacity is at risk of delays. Neighboring Massachusetts sees 75% of contracted capacities being delayed by renegotiation attempts. In Connecticut it's 73%. New Jersey, which is targeting of 11GW, risks delays to 60% of its contracted pipeline.
About 9.7GW of US offshore wind projects, or just over half of the 17.8GW total contracted, face delays, and more projects may soon face the same fate. Developers such as Avangrid, Shell-Ocean Winds, BP-Equinor and Orsted-Eversource have cited deteriorating economics due to rising costs in trying to renegotiate or cancel contracts.
The renegotiation efforts mean ambitious goals by state governments and the Biden administration to achieve 30GW of offshore wind capacity by 2030 are drifting further away from reality. The current situation highlights the challenges and complexities inherent in developing large-scale offshore wind projects.

Status of contracted offshore wind capacity and targets across US states



Source: BloombergNEF, news reports, company petitions

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What's Next for Britain's Struggling Offshore Wind Industry?
2023-09-09 06:00:00.0 GMT

By Rachel Morison, Priscila Azevedo Rocha and Jessica Shankleman

(Bloomberg) -- The UK's offshore wind energy plans, and the climate goals that go with it, have been brought to a sudden halt.

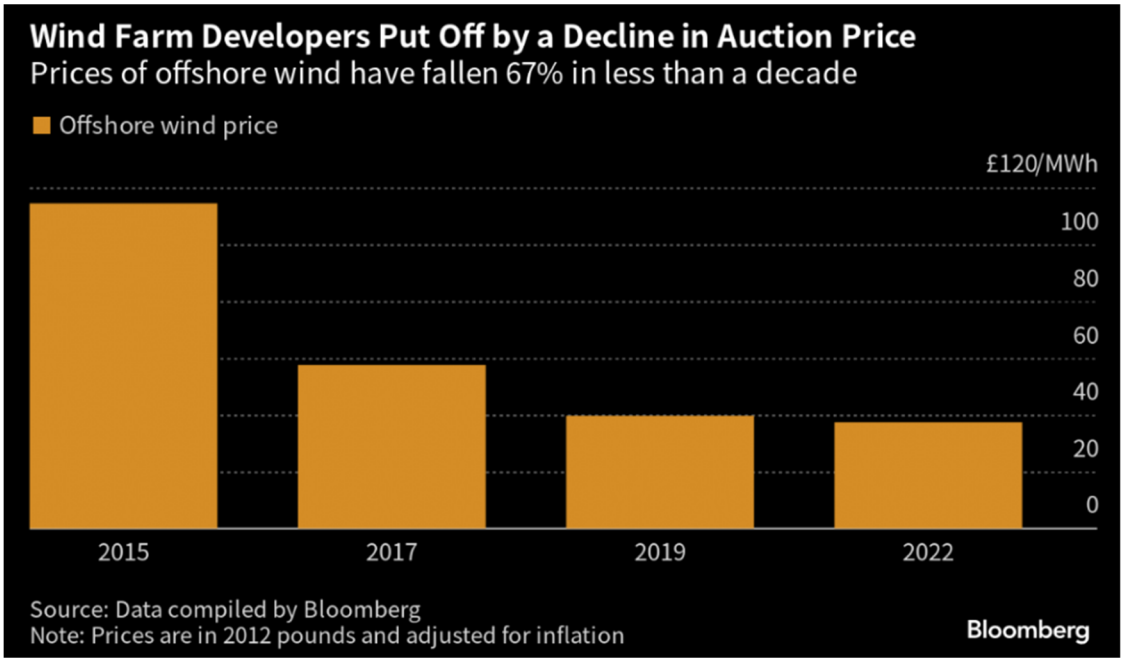
On Friday, an auction for contracts to build new wind farms received zero bids from developers. It's the first time that's happened since the current system was introduced almost a decade ago, and it raises major questions about the UK's environmental targets.

The aim of the subsidies is to ensure a guaranteed price, but firms say it needs to be much higher or the construction of new wind turbines at sea will grind to a halt.

The dilemma for Prime Minister Rishi Sunak is how to find a fix without spending too much money or pushing up energy costs for households. It's pitting the short-term political cycle — an election is due by early 2025 — against the long-term need to address climate change.

Anything that increases bills will be a hard sell to voters still reeling from the worst cost-of-living crisis in decades, particularly if the optics include handouts to power companies. But with Sunak's commitment to net zero already being questioned, accusations that the Conservatives have allowed a successful UK industry to fail would also be damaging.

This is "a major setback at a critical time when we should be looking to accelerate renewables," said Simon Virley, head of energy and natural resources at KPMG.



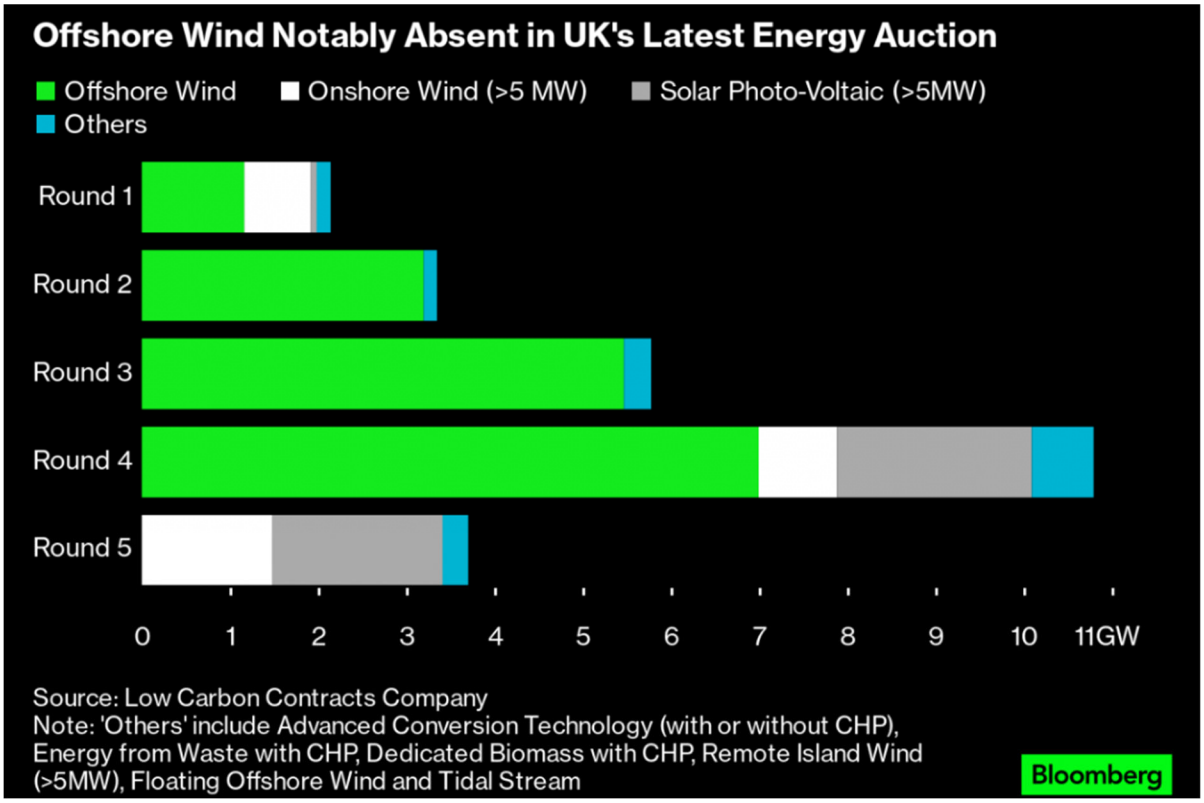
Britain is the second biggest market for offshore wind in the world, behind China. Its success has come from the rapid

reduction in the cost of the technology as projects have scaled up.

But the industry has been warning more recently that inflation pressures and soaring costs for raw materials mean that the declining cost curve can't continue forever.

The UK desperately needs to fix the current situation if it's to have any chance of meeting its offshore wind energy targets. It aims to have 50 gigawatts of power by 2030. There will be just over 15 GW at the end of this year, less than a third of its goal, according to BloombergNEF.

Ashutosh Padelkar, senior research associate at Aurora Energy Research, said the government needs to get 10 GW of offshore wind at its next two auctions to ensure that its target can be met. The highest in any auction so far has been 7 GW.



Friday's blow effectively means a missing year for offshore wind development at a crucial time. On top of that, projects in the previous auction are being put on ice because rising costs. In July, Vattenfall AB, a winner of last year's auction, shelved a 1.4-gigawatt wind farm, which would have provided power for 1.5 million UK homes, saying the development is no longer viable after costs soared as much as 40%. Orsted A/S Chief Executive Mads Nipper has warned that its huge Hornsea-3 project, which also won a contract in 2022, is at risk.

The UK is aiming for a carbon free electricity grid by 2035, ambitious even before this week's disaster. Tom Glover, UK country chair for German power company RWE AG, said such targets are "unlikely to be met without decisive government action."

"Our industry needs the certainty of stable, future contracts for difference auction rounds based on sustainable

pricing, separate pots for offshore wind, and realistic assumptions," he said.

Read More: European Renewables Hit Three-Year Low as Wind Malaise Deepens

If power developers were looking for positive signs from the government, there wasn't much to cling to in an initial statement from the Department for Energy Security and Net Zero. It highlighted the results in the solar and onshore wind auctions, and merely noted the lack of offshore bids was "in line with similar results" elsewhere in Europe. It added that it will review its approach before the next auction, without any details.

Pricing System

Under the Contract for Difference auction system, the government sets a baseline price for the power generated. Companies have to pay anything in excess of that level back to the Treasury, while they get compensated if electricity market prices fall below.

Because developing offshore wind projects is extremely capital- and labor-intensive, securing a guaranteed government contract can help with funding.

The other option is for developers to use power purchase agreements with large consumers like manufacturers or data centers to guarantee revenues. This is seen as more risky because markets are volatile and companies want long-term contracts.

Some in the industry want the government to call time on the CfD auctions, saying they're no longer fit for purpose. The Energy Systems Catapult, part funded by the government, says they are making the shift to net zero harder because they create a "winner-takes-all market," leaving other developers without a route in.

A slowdown in offshore wind will mean "the big losers are UK industry and consumers, who will continue to pay high power prices for years to come," said Eirik Hogner, partner and deputy portfolio manager at hedge fund Clean Energy Transition LLP. "The fix is extremely easy and quick; re-run the auction and let the market set the prices. I doubt that the UK government will act quickly however."

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Is there a perfect storm brewing in the offshore wind industry?

In recent weeks, for the first time, offshore wind projects in Europe and the U.S. have been stopped, mainly citing cost increases. In other news, turbine manufacturers were once again in the red in their latest quarterly reports, with losses running into billions.

This is not good news, it's in fact the worst-case scenario for the energy transition when large projects that have already been awarded are not realised as planned. Happening at a time when the entire offshore industry has to scale up to achieve expansion targets, this quickly calls into question the achievement of climate protection goals.

This dilemma is fuelled by a combination of factors, including cost increases due to ongoing inflation and rising interest rates, as well as structural supply shortages and the strained state of supply chains.

This development must serve as a wake-up call for policymakers to adapt the regulatory framework to market realities. Five areas of action can help navigate through the storm.

1. A frontloaded auction schedule can increase the investment certainty for the whole industry. That includes the early auctioning of large sea areas.

2. Grid connection of offshore wind farms have to be accelerated and developers need to have certainty about connection dates.

3. Allowance for dual route-to-market: 2-sided Contracts for Difference (CfDs) with inflation indexation as one element, and a second element which allows the marketing of offshore power to industrial customers through private PPAs. In addition, qualitative auction criteria can strengthen the European supply chain, sustainability, and deliverability.

4. When auction schemes cap budgets, for example like CfDs in the UK, governments need to recognise the inflationary environment and that costs have gone up significantly. Sticking with the old assumptions of nominal cost reduction will simply slow down or stop offshore technology deployment.

5. Direct and indirect financial support to stimulate investments in European manufacturing capacities and a master plan to secure access to vital raw materials.

In a nutshell: we need a framework that allows for more investment certainty for both manufacturers and

developers.

At RWE, we are building and driving forward the development of several projects where we have been awarded the seabeds: in Germany, the UK, the Netherlands, Denmark, Ireland, Poland and the U.S. To deal with the challenging market situation, securing financing and strong relationships with your supply chain are key.

However, the right framework and policies, as outlined here, are imperative for offshore wind energy to realise its fullest potential in the future.

Excerpt Vattenfall interim report on July 20, 2023

CEO's comment

A positive development for the customer business and challenges in offshore wind power

Vattenfall's business is in general progressing well. We benefit from our integrated business model with better results from Distribution, Heat and Customers & Solutions. However, overall we report a lower result for the half year, mainly due to an impairment in offshore wind power. Falling market prices were partly compensated by our price hedges.

Lower market prices and effects of price hedging

Compared to 2022, electricity prices in the Nordics have almost halved, while the difference between electricity price areas have decreased significantly. In northern Sweden, spot prices have nevertheless been higher, which together with the effects of price hedging has contributed to Vattenfall being paid more for its electricity in the Nordics. On the continent, electricity prices have also been significantly lower, which affects the result from the Wind segment. This has an additional impact on the Power Generation segment where the results from our continental price hedges are reported. These have not been as effective as in the Nordics.

Higher costs, especially in offshore wind power

Although demand for fossil-free electricity is greater than ever, the market for offshore wind power is challenging. Higher inflation and capital costs are affecting the entire energy sector, but the geopolitical situation has made offshore wind and its supply chain particularly vulnerable. Overall, we see cost increases up to 40%. This development affects future profitability and means that Vattenfall makes an impairment for wind power in Norfolk, UK, with a total impact on earnings of SEK 5.5 billion. We have decided to stop the development of Norfolk Boreas in its current form and not take an investment decision now due to mentioned factors, which triggers the impairment.

We will examine the best way forward for the entire Norfolk Zone, which in addition to Boreas also includes the Vanguard East and West projects. Over the past decade, Vattenfall has built up its wind operations which today is a valuable and profitable business generating an underlying profit of more than SEK 16 billion last year. We have attractive wind power projects in the pipeline, and investment decisions will always be based on profitability. We are convinced that offshore wind power is crucial for energy security and meeting the climate goals in Europe.

The profit for the period in the first half of the year amounted to SEK 6.9 billion, which is SEK 3.4 billion lower than in 2022. The impairment of Norfolk Boreas is partly offset by a positive financial net due to higher returns from the Nuclear Waste Fund.

A profitable and sustainable business model

Vattenfall reports higher contributions from both the heat and customer business. In Germany, we now have over 5 million customers, which makes Vattenfall one of the three largest energy suppliers for private customers in the country. However, lower contributions from Power Generation and Wind generate a lower underlying profit for the first half of 2023. The underlying profit for Vattenfall is SEK 14.6 billion, which is SEK 1.7 billion less compared to the same period in 2022.

Overall, Vattenfall has a continued stable capital structure with reassuring cash flow in relation to our financial commitments. The return on capital employed amounted to 0.5% and is affected by impairments and the valuation of electricity and fuel contracts at fair value. On an underlying basis, the figure however amounted to 10.7%, which demonstrates that our diversified and integrated business model is working.

Additional steps towards a fossil-free future

Vattenfall's goal is to enable fossil-free living. This permeates all of our operations and means we stand strong as a company. In June, Vattenfall was one of nine companies globally to have its net-zero emissions targets by 2040 verified by the Science Based Target Initiative (SBTi). We also recently inaugurated Vattenfall's largest onshore wind farm in the UK, South Kyle, and have completed the construction of the offshore wind farm Hollandse Kust Zuid in the Netherlands.

We continue to work on our preliminary study on the feasibility regarding new construction of small modular nuclear reactors (SMR) in Sweden, a study which is scheduled to be completed by the end of the year. New nuclear power, alongside other fossil-free energy sources, will be crucial in ensuring that Sweden will meet the increasing demand for electricity in the long-term.

Anna Borg
President and CEO

Profit for the period	Underlying operating profit	FFO/adjusted net debt	Return on capital employed
First half of 2023	First half of 2023	Last 12 months	Last 12 months
6.9 SEK billion	**14.6** SEK billion	**30.6%**	**0.5%**
(10.3)	(16.3)	(103.0)	(19.3)

Excerpt Vattenfall March 29, 2023 Corporate Factbook

Main projects in our 5 core countries

Country	Name	Capacity (MW)	Support scheme	Awarded	Duration of support	Owner-ship (%)	Commission-ing	Current status
NL	Hollandse Kust Zuid 1-4	1,520	-	X	-	51	2023	Under construction, Partnering with BASF
DK	Vesterhav	344	FIT	X	50.000hrs	100	2023/2024	Under construction
UK	South Kyle	240	-	N/A	-	100	2023	Under construction
NL	Windplan Blauw	77	SDE+	X	15 yrs	100	2023	Under construction
UK	Battery@Ray	20	-		-	100	2023	Under construction
In construction		**2,201**						
UK	Norfolk projects	3,600	CfD		15 yrs	100	2027-2029	Norfolk Boreas received CfD in AR4, Norfolk Vanguard is preparing for CfD bid in AR5
UK	Scotwind	750	CfD			50	2030	Under development with consenting and permitting progressing to ensure participation in the CfD bid, JV with Fred Olsen
GE	N-7.2 (Global Tech II)	980	-		-	100	2027	Development rights received in September 2022, FID planned for 2023
In development (in mature stage)		**5,330**						

Offshore Onshore Solar Batteries

[1] The project has been sold but Vattenfall will build and operate the wind farm

BN 09/05 15:22 Orsted Ready to Abandon US Wind Projects Without Help (Correct)

Orsted Ready to Abandon US Wind Projects as It Asks for Help (3)
2023-09-05 18:30:46.865 GMT

By Priscila Azevedo Rocha and Todd Gillespie
(Bloomberg) -- Orsted A/S said it's prepared to walk away from US projects unless the White House guarantees more support, highlighting the myriad challenges facing wind-energy developers in the country.
The US, far behind Europe and China in the race to build offshore wind, is targeting a jump to 30 gigawatts by the end of the decade fromnext to nothing now. While the Biden administration has touted its landmark clean-energy subsidy program to kick-start projects, developers must ensure a large chunk of components are US-made to take full advantage of the incentives, and that's proving hard to achieve.
"We are still upholding a real option to walk away," Orsted Chief Executive Officer Mads Nipper said in an interview in London. "But right now, we are still working toward a final investment decision" on projects in America.
The Danish firm has had a turbulent few months, with supply-chain glitches and soaring interest rates weighing on US plans. Shares fell 8.3% Tuesday, bringing the year-to-date decline to 37%.
While offshore farms are seen as critical to ridding the US power grid of fossil fuels and avoiding the worst effects of climate change, they're also extremely capital- and labor-intensive. In order for the industry to bring future projects to fruition, it's "inevitable" that consumer prices for energy will increase, Nipper said.
"And if they don't, neither we nor any of our colleagues are going to build more offshore," Nipper said. "It's very simple."
It's a tough time for offshore wind globally, with costs for steel and other materials spiraling higher just as countries push to add more turbines. Large projects by the likes of Vattenfall AB and Iberdrola SA have already been scrapped this year.
Read More: The Great US Offshore Wind-Power Boom Has Begun to Falter
Orsted's delays were triggered by bureaucratic uncertainties during the previous US administration and were intensified by supply-chain disruptions during the Covid-19 pandemic. Biden's push on clean energy helped accelerate some plans, but high interest rates and delays in procuring foundations, known as monopiles, for its wind turbines slowed developments even more.
Because final investment decisions weren't made and the projects were being funded by the company's balance sheet, the fact that long-term interest rates in the US soared above 3% means Orsted's cost of capital is higher.

“For a company like ours, where the targeted range of returns is 150 to 300 basis points above our cost of capital, it has essentially made this extremely tough,” Nipper said.

Nipper said Orsted couldn’t have predicted the industry turmoil, yet an investor selloff saw the company lose $8 billion in value last week after impairments were booked on several US projects. Longer-term plans also are at risk, with developments near New Jersey and Delaware not investible right now, he said.

“We have spent money essentially since 2018 and also made supplier commitments,” Nipper said. “We have also said to our investors: We will take a forward-looking view and if you consider these costs really sunk, then actually the forward-looking business case is comfortable for this portfolio of projects.”

Despite shareholder concern, the CEO said he’s had the support of the board since the stock price slumped. JPMorgan Chase & Co. says it hosted a roadshow with the firm Monday, and it highlights concern around the risk of further impairments.

The bank said the profit warning was mainly company specific, but there’s a wider read-across on higher rates.

Read More: Orsted Shares Plunge as Company Warns of $2.3 Billion US Hit

Under the Inflation Reduction Act, Orsted and other developers can already tap into tax credits generally worth 30%. At issue is the ability to claim additional bonus credits under the law that reward developers for using domestic content and projects that benefit so-called energy communities, such as those with coal mines and plants.

Nipper has asked the White House to guarantee subsidies without the domestic content requirement at first and requested extra time to overcome the difficulties in sourcing American-made material.

“What we proposed was a grace period, say, so give us three to five years,” the CEO said. “Right now, it can’t deliver.”

Biden administration officials working to implement the Inflation Reduction Act’s tax provisions have emphasized that the domestic content bonus is an added incentive meant to help spur new clean-energy supply chains inside the US.

The law “includes critical incentives to promote clean energy development while ensuring that US manufacturers and workers benefit from the growth of the clean energy economy,” Treasury Department spokeswoman Ashley Schapitl said. The agency “is laser-focused on implementing these landmark incentives in a way that follows the law and its underlying goals.”

--With assistance from Jennifer A. Dlouhy.

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https://www.argusmedia.com/en//news/2485870-italy-mulls-return-to-nuclear-in-10-years?backToResults=true

Italy mulls return to nuclear in 10 years

Published date: 04 September 2023

Share:

The Italian government has restated its ambition to revive the Italian nuclear energy industry, with several ministers announcing plans to restart nuclear generation within the next 10 years.

"I count that within the next 10 years this government, in its current formation, will be able to inaugurate the first [energy] production derived from nuclear," Italian transport minister and deputy prime minister Matteo Salvini said at the European House-Ambrosetti economic forum on Sunday.

Meanwhile, environment minister Gilberto Pichetto Fratin announced that he will chair the first meeting of the national platform for sustainable nuclear on 21 September. The "platform" is intended to be a co-ordinating entity for companies and institutions involved in various branches of the nuclear industry, including safety, radioprotection and toxic waste.

"We are not talking about building nuclear plants, but clarifying the state's commitment to research, experimentation, and implementing Italy's strong knowledge in the nuclear sector," Pichetto said.

The minister also said fourth-generation fission technology will be the government's main focus of attention, which means "considering small modular reactors to be a real possibility for the country over the next 10 years".

Italy had four nuclear reactors with approximately 1.4GW of aggregated capacity by 1966, according to the World Nuclear Association. The last two were shut down in 1990, following the Chernobyl disaster four years earlier, while a programme launched by the Berlusconi government in 2008 to reach 25pc of nuclear in the Italian power mix by 2030 was ruled out by a referendum in 2011.

Prime minister Giorgia Meloni's right-wing coalition has often expressed its ambition of reviving nuclear power in Italy as an aid to the green transition. Earlier this year, the government supported a French-sponsored alliance of pro-nuclear EU countries, although it has only attended the bloc's meetings as an observer.

And speaking at a conference in Milan in October, Pichetto said his government is "in favour of experimenting with the new generation of nuclear power" to deal with the energy crisis, adding that it "should be fully resorted to".

Currently, around 6pc of Italy's electricity demand is met by nuclear power imported from neighbouring markets.

By Timothy Santonastaso

Electricity Generation by fuel*

Terawatt-hours	2021 Oil	Natural gas	Coal	Nuclear energy	Hydro-electricity	Renew-ables	Other‡	Total	2022 Oil	Natural Gas	Coal	Nuclear energy	Hydro-electricity	Renew-ables	Other‡	Total
Canada	2.9	80.1	34.4	92.0	382.8	49.8	4.8	**646.8**	2.7	81.0	34.1	86.6	398.4	52.1	4.7	**659.6**
Mexico	32.9	189.5	13.6	11.9	34.9	47.3	^	**330.0**	34.2	191.8	21.9	10.8	35.7	46.2	–	**340.7**
US	20.6	1698.1	977.8	820.7	249.0	622.0	12.7	**4400.9**	25.1	1816.6	904.2	812.1	258.6	719.5	11.5	**4547.7**
Total North America	**56.5**	**1967.6**	**1025.8**	**924.6**	**666.6**	**719.1**	**17.5**	**5377.7**	**62.0**	**2089.4**	**960.2**	**909.6**	**692.7**	**817.8**	**16.2**	**5548.0**
Argentina	13.1	89.9	2.4	10.2	19.6	17.4	0.5	**153.2**	16.7	80.4	2.1	7.5	23.9	19.4	0.8	**150.8**
Brazil	20.2	87.0	24.2	14.7	362.8	144.8	2.4	**656.1**	10.1	42.1	16.5	14.6	427.1	164.5	2.3	**677.2**
Other S. & Cent. America	65.7	106.7	46.9	–	286.3	64.1	-^	**569.7**	66.3	114.0	38.0	–	295.2	68.8	-^	**582.4**
Total S. & Cent. America	**99.0**	**283.6**	**73.5**	**24.9**	**668.7**	**226.3**	**2.9**	**1378.9**	**93.1**	**236.5**	**56.6**	**22.0**	**746.2**	**252.8**	**3.1**	**1410.4**
France	2.0	35.3	4.1	379.4	58.7	61.4	6.8	**547.6**	2.3	46.9	3.1	294.7	44.6	68.0	8.1	**467.7**
Germany	4.6	90.3	164.7	69.1	19.7	214.4	26.5	**589.3**	4.4	79.8	180.6	34.7	17.5	236.5	23.8	**577.3**
Italy	12.0	144.0	16.0	–	45.4	68.2	3.5	**289.1**	9.7	156.3	17.6	–	28.2	72.0	3.6	**287.3**
Netherlands	1.3	56.7	17.3	3.8	0.1	40.4	2.5	**122.1**	1.6	47.8	17.3	4.2	0.1	48.3	2.7	**122.0**
Poland	2.0	15.8	129.8	–	2.3	28.2	1.4	**179.6**	1.7	11.6	127.4	–	2.0	34.7	1.7	**179.1**
Spain	10.0	71.5	6.0	56.6	29.6	96.1	4.5	**274.3**	10.1	89.3	9.4	58.6	18.2	103.3	4.9	**293.7**
Türkiye	0.3	111.2	103.4	–	55.9	64.0	^	**334.7**	3.1	71.8	112.8	–	67.2	71.4	–	**326.2**
Ukraine	0.8	10.3	36.8	86.2	10.4	11.0	–	**155.5**	0.5	7.2	24.8	62.1	11.1	7.0	–	**112.7**
United Kingdom	1.8	123.2	6.5	45.9	5.5	116.7	9.1	**308.7**	2.1	125.3	5.6	47.7	5.3	129.5	10.5	**326.0**
Other Europe	17.8	141.7	146.9	241.3	426.9	242.6	25.5	**1242.8**	17.1	132.0	151.4	239.5	372.8	269.4	26.6	**1208.8**
Total Europe	**52.7**	**799.9**	**631.5**	**882.3**	**654.5**	**942.9**	**79.8**	**4043.6**	**52.6**	**768.0**	**650.0**	**741.5**	**566.9**	**1040.1**	**81.9**	**3900.9**
Kazakhstan	0.1	27.1	75.2	–	9.2	3.4	0.2	**115.1**	0.1	23.7	76.8	–	9.2	4.2	–	**114.0**
Russian Federation	8.1	519.9	181.2	222.4	214.5	5.7	5.2	**1157.1**	6.7	533.9	192.3	223.7	197.7	7.4	5.3	**1166.9**
Other CIS	4.6	156.9	6.4	7.8	41.2	1.2	0.6	**218.7**	4.0	159.8	6.2	7.5	40.9	1.6	0.6	**220.7**
Total CIS	**12.8**	**703.9**	**262.8**	**230.2**	**265.0**	**10.3**	**6.0**	**1490.9**	**10.7**	**717.3**	**275.4**	**231.2**	**247.8**	**13.3**	**5.8**	**1501.6**
Iran	33.8	290.6	0.8	3.5	14.9	1.8	–	**345.3**	31.2	300.2	0.8	6.6	7.5	2.0	–	**348.1**
Saudi Arabia	157.9	234.2	–	–	–	0.8	–	**392.9**	131.4	269.4	–	–	–	0.8	–	**401.6**
United Arab Emirates	^	132.2	–	10.5	–	6.3	–	**149.0**	^	127.7	–	20.1	–	7.0	–	**154.7**
Other Middle East	135.4	283.8	17.2	–	5.0	13.6	0.2	**455.1**	134.8	285.8	17.8	–	4.9	17.2	0.2	**460.6**
Total Middle East	327.1	940.9	17.9	14.1	19.9	22.4	0.2	**1342.4**	297.3	983.0	18.5	26.7	12.4	27.0	0.2	**1365.1**
Egypt	10.9	174.0	–	–	14.3	10.5	–	**209.7**	17.6	159.3	–	–	13.8	10.2	–	**200.8**
South Africa	3.2	–	206.1	12.4	2.0	15.9	4.7	**244.3**	3.6	–	197.2	10.1	3.1	16.3	4.5	**234.8**
Other Africa	45.0	202.0	36.9	–	136.1	22.5	0.5	**442.9**	49.4	203.9	39.2	–	139.8	24.3	0.5	**457.1**
Total Africa	**59.1**	**376.0**	**243.1**	**12.4**	**152.4**	**48.8**	**5.2**	**896.9**	**70.6**	**363.2**	**236.4**	**10.1**	**156.7**	**50.8**	**5.0**	**892.7**
Australia	4.7	47.6	137.4	–	15.9	61.3	0.4	**267.5**	5.0	46.3	130.9	–	17.1	73.7	0.5	**273.6**
China	11.8	287.1	5328.8	407.5	1300.0	1148.7	50.3	**8534.3**	11.9	290.6	5397.8	417.8	1303.1	1367.0	60.4	**8848.7**
India	2.3	59.8	1274.1	43.9	160.3	173.2	1.1	**1714.8**	2.5	47.0	1380.1	46.2	174.9	205.9	1.3	**1858.0**
Indonesia	6.6	56.3	190.0	–	24.7	31.5	0.3	**309.4**	6.1	56.1	205.3	–	27.3	38.0	0.6	**333.4**
Japan	34.0	326.1	301.9	61.2	79.6	136.4	80.6	**1019.7**	40.6	319.7	309.0	51.8	74.9	152.1	85.4	**1033.6**
Malaysia	1.3	60.9	78.0	–	30.9	3.7	–	**174.7**	1.8	68.4	76.4	–	32.5	3.9	–	**182.9**
South Korea	7.2	178.1	211.7	158.0	3.1	39.8	4.2	**601.9**	6.9	173.3	208.7	176.1	3.5	47.7	4.2	**620.3**
Taiwan	5.3	108.3	128.9	27.8	3.5	12.2	5.0	**291.0**	4.5	111.8	121.2	23.8	5.8	16.2	4.9	**288.1**
Thailand	0.7	113.1	36.1	–	4.5	21.9	-^	**176.4**	1.7	114.6	35.5	–	6.6	21.9	^	**180.4**
Vietnam	0.2	26.2	114.2	–	75.9	28.3	^	**244.9**	0.7	27.8	100.8	–	96.0	34.8	–	**260.0**
Other Asia Pacific	52.3	230.1	155.5	15.7	163.3	37.8	0.7	**655.4**	60.5	218.2	154.4	22.3	169.7	41.5	1.0	**667.6**
Total Asia Pacific	**126.4**	**1493.7**	**7956.4**	**714.1**	**1861.7**	**1694.8**	**142.5**	**13989.7**	**142.2**	**1473.9**	**8120.1**	**737.9**	**1911.5**	**2002.6**	**158.3**	**14546.4**
Total World	**733.5**	**6565.6**	**10211.1**	**2802.5**	**4288.8**	**3664.6**	**254.2**	**28520.2**	**728.6**	**6631.4**	**10317.2**	**2679.0**	**4334.2**	**4204.3**	**270.5**	**29165.1**
of which: OECD	153.5	3370.9	2247.8	1912.2	1450.2	1916.1	181.3	**11232.0**	163.0	3454.1	2197.3	1789.3	1408.2	2157.8	187.5	**11357.3**
Non-OECD	580.0	3194.6	7963.3	890.4	2838.5	1748.5	72.9	**17288.2**	565.6	3177.3	8119.8	889.7	2926.0	2046.6	83.0	**17807.9**
European Union	47.3	548.7	439.8	731.7	347.3	725.5	64.3	**2904.6**	43.9	556.2	461.2	608.6	276.9	801.7	63.5	**2812.0**

‡ Includes electricity generated from: geothermal, biomass and other sources of renewable energy (not already itemized).
* Based on gross output. Includes uncategorised generation, statistical differences and sources not specified elsewhere e.g. pumped hydro, non-renewable waste and heat from chemical sources.
^ Less than 0.05.

https://www.ercot.com/news/release/2023-09-06-ercot-expects-tight
News Release
Sep 6, 2023

ERCOT Expects Tight Grid Conditions, Requests Conservation Today from 6 p.m. to 9 p.m. CT

(Austin, TX) – Due to continued high temperatures, high demand, low wind, and declining solar power generation this evening, operating reserves are expected to be low into the evening hours. As a result, ERCOT is asking Texans to conserve electricity use, if safe to do so, today, September 6, from 6 p.m. – 9 p.m. CT.

Today's conservation appeal does not indicate ERCOT is experiencing emergency conditions at this time. Current forecasts are showing a potential for low reserves this evening because of continued high temperatures, high demand, low wind, and declining solar power generation into the evening hours. ERCOT will continue to closely monitor conditions throughout the day and will keep the public informed through our communications channels.

ERCOT is requesting all government agencies (including city and county offices) to implement all programs to reduce energy use at their facilities.

ERCOT continues to use additional tools to manage the grid reliably, including using reserve power, calling upon reductions by large electric customers that have volunteered to lower their energy use, and bringing more generation online sooner. ERCOT is also working with out-of-state Independent System Operators (ISOs) and Market Participants to obtain additional power generation capacity.

Conservation is a widely used industry tool that can help lower demand for a specific period of peak demand time, which is typically late afternoon into the evening hours. Energy-saving tips can be found on the TXANS webpage at ercot.com/txans.

If you are experiencing an outage at this time, it is local in nature and not related to overall grid reliability. Please check with your local electric provider for more information.

Why the Request to Reduce Usage?

- **Heat**. Continued statewide high temperatures.
- **Demand**. Texas is seeing high demand due to the heat.
- **Solar**. Solar generation starts to decline earlier in the afternoon hours towards the end of summer before completely going offline at sunset.
- **Wind**. Wind generation is forecasted to be low this evening during peak demand time.

Peak Demand

- ERCOT set a new, all-time, unofficial peak demand record of 85,435 MW on August 10, 2023.
- ERCOT set a new all-time September peak demand record of 81,674 MW on September 5, 2023, surpassing the previous September peak of 78,459 MW set on September 4.
- This summer, ERCOT has set 10 new all-time peak demand records.
- Last summer, ERCOT set 11 new peak demand records with a high of 80,148 MW on July 20.

Consumer Assistance

- Public Utility Commission of Texas Hotline: 1-888-782-8477

Stay Updated

- Sign up for TXANS notifications on the TXANS webpage.
- Download the ERCOT Mobile App for additional notifications: iOS | Android.
- Monitor real-time and extended conditions at ercot.com.
- Subscribe to ERCOT Emergency Alerts, which are not sent through TXANS notifications.
- Follow ERCOT on Twitter (@ERCOT_ISO), Facebook (Electric Reliability Council of Texas), and LinkedIn (ERCOT).

Oct 14, 2023 - Annular Solar Eclipse

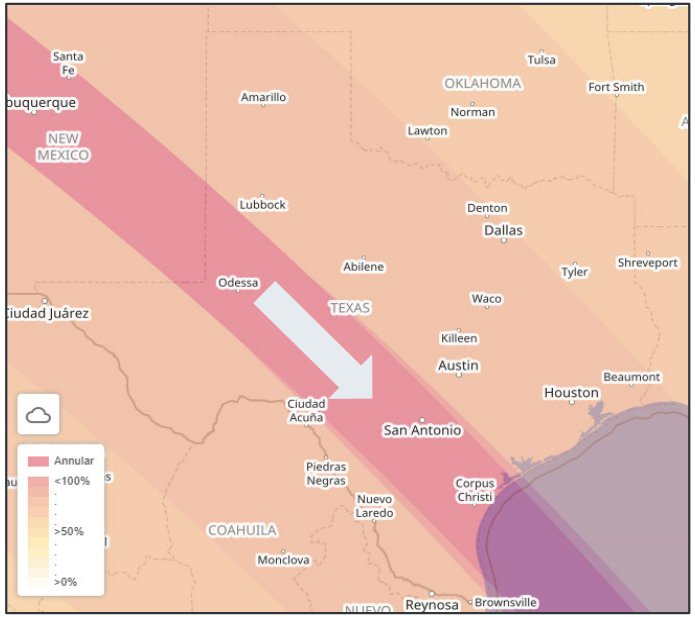
ROS

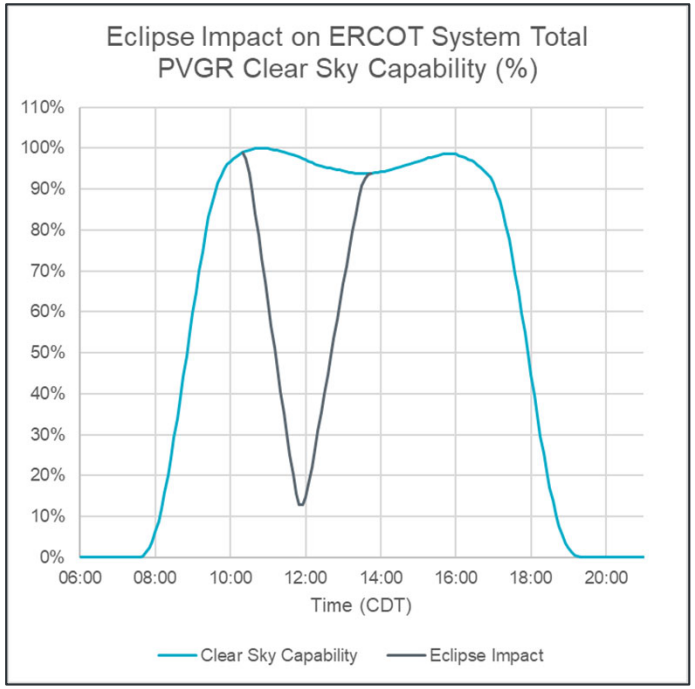
Luke Butler
Resource Forecasting and Analysis

9/7/2023

Annular Solar Eclipse - October 14, 2023

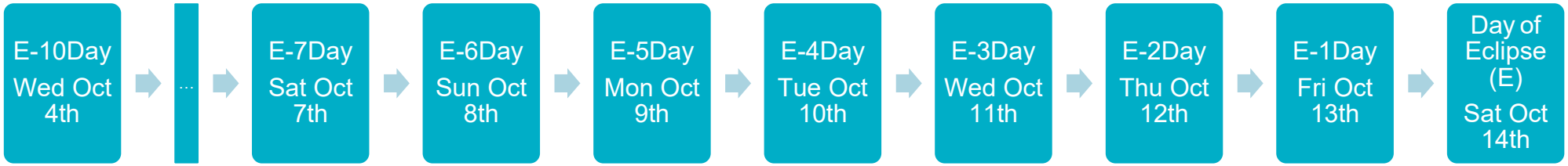
- On Saturday, October 14, 2023, an annular solar eclipse will pass through the ERCOT region.
- The eclipse will impact PhotoVoltaic Generation Resources (PVGR) in ERCOT between 10:15AM and 1:40PM CDT. PVGRs will experience a maximum coverage of sun ranging from 76% to 90%, with the system total PVGR clear sky capability reducing to a minimum of 13% at the time of maximum impact at 11:50AM CDT.
- ERCOT is working with solar forecast vendors to ensure the forecasting models account for the impact of the eclipse. ERCOT will pre-posture the system as necessary to meet both the down and up solar ramps and use Ancillary Services for additional balancing needs.





Key Takeaway: ERCOT is planning for the annular solar eclipse on October 14, 2023, and will use available tools to balance the system.

Activities Prior to Eclipse



- **Day of Eclipse(E) - 10Day(D), Wed Oct 4th**: Receive and review ad-hoc forecasts from vendors for day of eclipse.

- **E-9D, Thurs Oct 5th**: Send 1st market notice reminding market of eclipse.

- **E-7D, Sat Oct 7th**: Review forecast selections, monitor weather and potential for net load up-ramp.

- **E-2D, Thurs Oct 12th**:
  - Prior to Friday's DAM, review forecast selections and AS requirements for the eclipse hours and assess if changes are necessary.
  - Send 2nd market notice reminding market of eclipse.

- **E-1D, Fri Oct 13th:**
  - After DAM clears and prior to DRUC, assess sufficient capacity margin for eclipse window and if forecast selection changes are needed.
  - After DRUC, review any RUC recommendations and projected committed capacity margin for eclipse hours.

- **Day of Eclipse**:
  - At 08:00AM, 2 hours prior to operating hour of eclipse window, assess forecast performance and review GTBD parameters.

WORLD NUCLEAR ASSOCIATION

https://www.world-nuclear.org/press/press-statements/nuclear-fuel-report-2023-decarbonization,-energy-s.aspx

Nuclear Fuel Report 2023: Decarbonization, energy security and SMRs drive increase in nuclear capacity

7 September 2023

The global effort to decarbonize energy supplies, heightened political commitment to ensuring energy security and sovereignty, and growing interest in deploying SMRs along with larger reactors has led to significant increases in projections for future nuclear capacity, and demand for nuclear fuel cycle services, in the latest edition of the Nuclear Fuel Report: Global Scenarios for demand and Supply Availability 2023-2040, published today.

Geopolitical instability, notably resulting from the Russia-Ukraine war has also led to increased interest in nuclear power for energy security and sovereignty. The same instability has had significant implications for the globalized market for nuclear fuel cycle services, with utilities, suppliers and governments in North America and Europe pursuing opportunities to diversify supplies.

Extending the planned operating lifetimes of the existing fleet of nuclear reactors is one of the positive changes from the previous edition of the report. Several countries with larger reactor fleets are allowing existing plants to operate for up to 60 years, and in the USA, to 80 years. Upwards of 140 reactors could be subject to extended operation in the period to 2040, driven by economics, emissions reduction targets, as well as security of supply.

Together with gigawatt-scale reactors, governments, utilities and industrial end-users are showing a strong interest in small modular reactors and microreactors, including advanced designs that offer simpler construction and financing. SMRs contribute up to 10% of total large-scale capacity in the Upper Scenario in 2040, although only 0.4% in the Lower Scenario.

Primary production of uranium from mines, conversion plants and enrichment plants continues to supply the majority of the demand for nuclear reactors around the globe. In the near term, secondary supplies of uranium will continue to play a role in bridging the gap between supply and demand. However, secondary supply is projected to have a gradually diminishing role in the world market, decreasing from the current level in supplying 11-14% of reactor uranium requirements to 4-11% in 2050.

The report concludes that there is no doubt that sufficient uranium resources exist to meet future needs; however, producers have been waiting for the market to rebalance before starting to invest in new capacity. Additional conversion and enrichment capacities are also likely to be needed.

Notes to Editors

The Nuclear Fuel Report: Global Scenarios for demand and Supply Availability 2023-2040, considers three scenarios, the Reference Scenario, informed by government and utility targets and objectives, the Lower Scenario, which assumes delays in implementing these plans, and the Upper Scenario, which is underpinned by more favourable conditions, largely reflecting the targets announced in many countries to achieve net-zero carbon emissions, and the acceptance that nuclear power will play an indispensable role in reaching this goal.

From the current 391 GWe of operable nuclear capacity, the Reference Scenario projects that nuclear capacity will reach 686 GWe by 2040 (up 71 GWe from the 2021 edition), with capacity reaching 931 GWe in the Upper Scenario (up 92 GWe) and 486 GWe in the Lower Scenario (up 37 GWe).

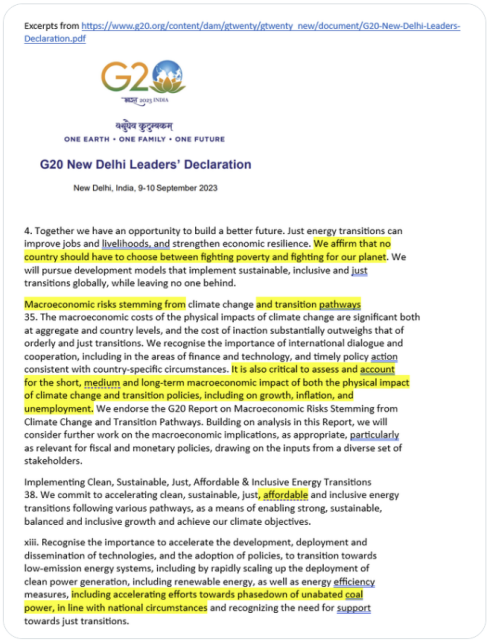
World reactor requirements for uranium in 2023 are estimated at about 65,650 tU. In the Reference Scenario these are expected to rise to almost 130,000 tU in 2040, with requirements rising to 184,300 tU in the Upper Scenario and nearly 87,000 tU in the Lower Scenario by the same date.

Dan Tsubouchi @Energy_Tidbits · 4h

Reality check moving from G7 to G20 on #EnergyTransition

"critical to assess & account for the short, medium & long-term macroeconomic impact of both the physical impact of climate change **and transition policies,** including on growth, inflation, & unemployment"

"just,... Show more



Excerpts from https://www.g20.org/content/dam/gtwenty/gtwenty_new/document/G20-New-Delhi-Leaders-Declaration.pdf

वसुधैव कुटुम्बकम्
ONE EARTH • ONE FAMILY • ONE FUTURE

G20 New Delhi Leaders' Declaration

New Delhi, India, 9-10 September 2023

4. Together we have an opportunity to build a better future. Just energy transitions can improve jobs and livelihoods, and strengthen economic resilience. We affirm that no country should have to choose between fighting poverty and fighting for our planet. We will pursue development models that implement sustainable, inclusive and just transitions globally, while leaving no one behind.

Macroeconomic risks stemming from climate change and transition pathways

35. The macroeconomic costs of the physical impacts of climate change are significant both at aggregate and country levels, and the cost of inaction substantially outweighs that of orderly and just transitions. We recognise the importance of international dialogue and cooperation, including in the areas of finance and technology, and timely policy action consistent with country-specific circumstances. It is also critical to assess and account for the short, medium and long-term macroeconomic impact of both the physical impact of climate change and transition policies, including on growth, inflation, and unemployment. We endorse the G20 Report on Macroeconomic Risks Stemming from Climate Change and Transition Pathways. Building on analysis in this Report, we will consider further work on the macroeconomic implications, as appropriate, particularly as relevant for fiscal and monetary policies, drawing on the inputs from a diverse set of stakeholders.

Implementing Clean, Sustainable, Just, Affordable & Inclusive Energy Transitions

38. We commit to accelerating clean, sustainable, just, affordable and inclusive energy transitions following various pathways, as a means of enabling strong, sustainable, balanced and inclusive growth and achieve our climate objectives.

xiii. Recognise the importance to accelerate the development, deployment and dissemination of technologies, and the adoption of policies, to transition towards low-emission energy systems, including by rapidly scaling up the deployment of clean power generation, including renewable energy, as well as energy efficiency measures, including accelerating efforts towards phasedown of unabated coal power, in line with national circumstances and recognizing the need for support towards just transitions.

Dan Tsubouchi @Energy_Tidbits · 17h

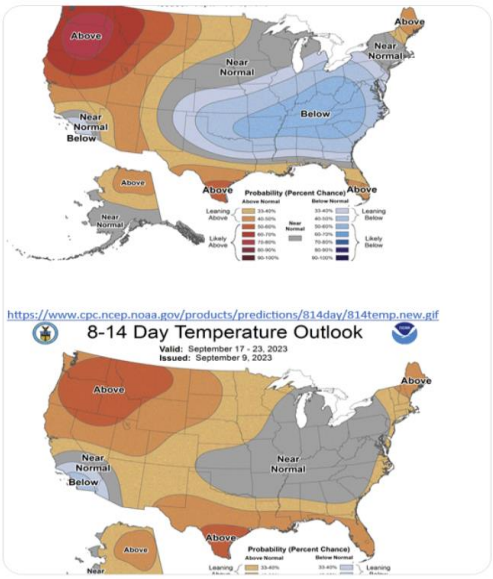
Today's @NOAA updated 6-10 & 8-14 day temperature outlook covering Sept 15-23.

Next few days are hot most everywhere but then turning to normal temps in the east.

Even Texas to move from crazy hot to just hot.

Won't do much for #NatGas.

#OOTT



1 1 4 1,929

Dan Tsubouchi @Energy_Tidbits · 23h

Support for #Oil prices

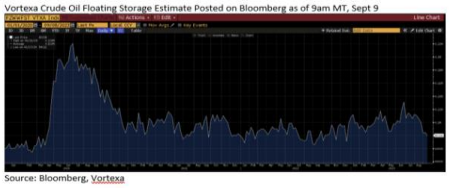
#Vortexa crude #Oil floating storage at 09/08 est 80.34 mmb, -4.19 mmb WoW vs revised up by +2.38 09/01 of 84.53 mmb.

3rd consecutive wk below 85 mmb.

80.34 mmb is down whopping 50 mmb vs recent 06/23/23 peak 130.99 mmb.

Thx @Vortexa @business. #OOTT

Vortexa Crude Oil Floating Storage Estimate Posted on Bloomberg as of 9am MT, Sept 9



Source: Bloomberg, Vortexa

Posted Sept 9, 9am MT

Date	Last Px
Fr 09/08/2023	80338
Fr 09/01/2023	84534
Fr 08/25/2023	84359
Fr 08/18/2023	100.352k
Fr 08/11/2023	105.557k
Fr 08/04/2023	110.301k
Fr 07/28/2023	112.572k
Fr 07/21/2023	105.787k
Fr 07/14/2023	111.475k
Fr 07/07/2023	114.175k
Fr 06/30/2023	106.65k

Sept 2, 9am MT

Date	Last Px
Fr 09/01/2023	82150
Fr 08/25/2023	84056
Fr 08/18/2023	105.039k
Fr 08/11/2023	108.074k
Fr 08/04/2023	113.596k
Fr 07/28/2023	114.702k
Fr 07/21/2023	106.866k
Fr 07/14/2023	110.974k
Fr 07/07/2023	113.323k
Fr 06/30/2023	106.441k
Fr 06/23/2023	131.033k

Aug 26, 9am MT

Date	Last Px
Fr 08/25/2023	80314
Fr 08/18/2023	105.222k
Fr 08/11/2023	109.279k
Fr 08/04/2023	111.806k
Fr 07/28/2023	112.657k
Fr 07/21/2023	105.57k
Fr 07/14/2023	109.817k
Fr 07/07/2023	115.064k
Fr 06/30/2023	106.307k
Fr 06/23/2023	129.814k
Fr 06/16/2023	117.33k

Source: Bloomberg, Vortexa

Vortexa Crude Oil Floating Storage by Region (mmb)

Region	Sept 8/23	Sept 1/23	WoW	Original Posted Sept 1/23	Recent Peak Jun 23/23	Sep 8vs Jun 23
Asia	43.93	42.67	1.26	37.80	74.58	-30.65
Europe	3.53	4.87	-1.34	4.96	6.52	-2.99
Middle East	3.32	4.09	-0.77	7.36	7.00	-3.68
West Africa	8.08	7.57	0.51	8.42	3.96	4.12
US Gulf Coast	2.32	2.70	-0.38	1.48	1.74	0.58
Other	19.16	22.63	-3.47	22.13	37.19	-18.03
Global Total	80.34	84.53	-4.19	82.15	130.99	-50.65

Vortexa crude oil floating storage posted on Bloomberg 9am MT on Sept 9

Source: Vortexa, Bloomberg

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

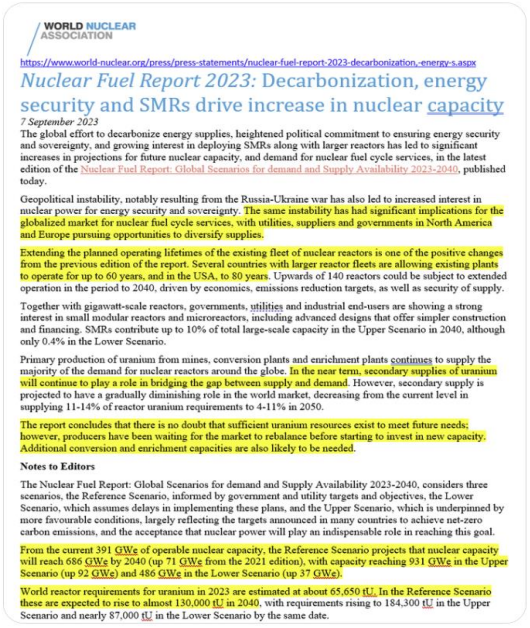
6 25 3,856

Dan Tsubouchi @Energy_Tidbits · Sep 9

Uranium sounds like #Oil supply risk for 20s - Yrs of underinvestment.

West has pivoted back to #Nuclear for 24/7 power during #EnergyTransition, which means @WorldNuclear now fcsts reactor uranium needs double by 2040.

Another reason #NatGas will be needed for longer.
#OOTT



WORLD NUCLEAR ASSOCIATION

https://www.world-nuclear.org/press/press-statements/nuclear-fuel-report-2023-decarbonization,-energy-s.aspx

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Together with gigawatt-scale reactors, governments, utilities and industrial end-users are showing a strong interest in small modular reactors and microreactors, including advanced designs that offer simpler construction and financing. SMRs contribute up to 10% of total large-scale capacity in the Upper Scenario in 2040, although only 0.4% in the Lower Scenario.

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4 29 3,841

Dan Tsubouchi @Energy_Tidbits · Sep 9

Here's why Cdn No Frack #Oil plays are big.

Looks like $TVE CEO showing 👇 slide.

No Frack Clearwater vs top quartile Permian Delaware Wolfcamp.

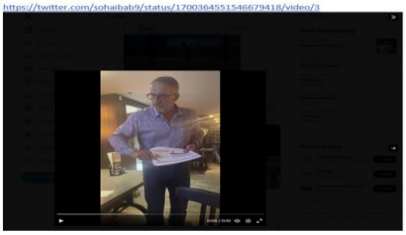
Faster payout: 0.4 yrs vs 0.7.

NPV is 5.3x vs well cost vs 1.2x

More reserves per $, secondary recovery potential, etc.

#OOTT

https://twitter.com/sohaibab9/status/1700364551546679418/video/3



> **Sohaib Abbas** @sohaibab9 · Sep 8
>
> 
>
> Thanks 2 all that showed up, Brian put up an absolute clinic. I've always felt if you invest in great people first you'll almost always come out on top. It's really obvious for anyone that cares to look, $TVE gonna have a remarkable 2H blow out quarter's ! Brian was ...

6 15 78 43.7K

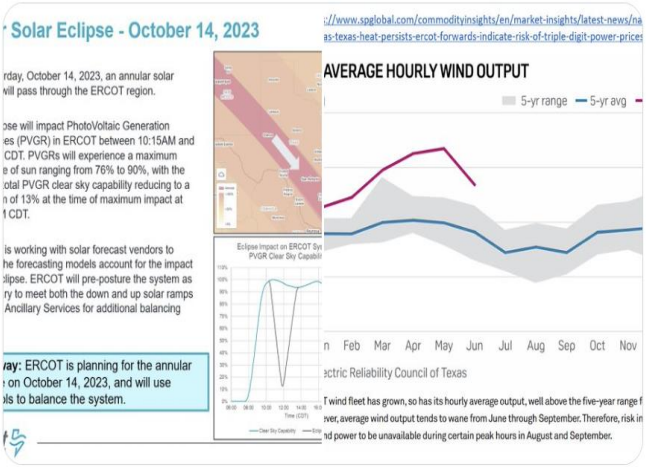
Dan Tsubouchi @Energy_Tidbits · Sep 8

Add solar eclipse as a new risk to running out of power, for a few hours, risk under #EnergyTransition.

@ERCOT_ISO warns on annular solar eclipse on Oct 14.

Good thing it's a Sat and not until Oct when demand is less & Texas wind should be better

#NatGas will be needed.
#OOTT

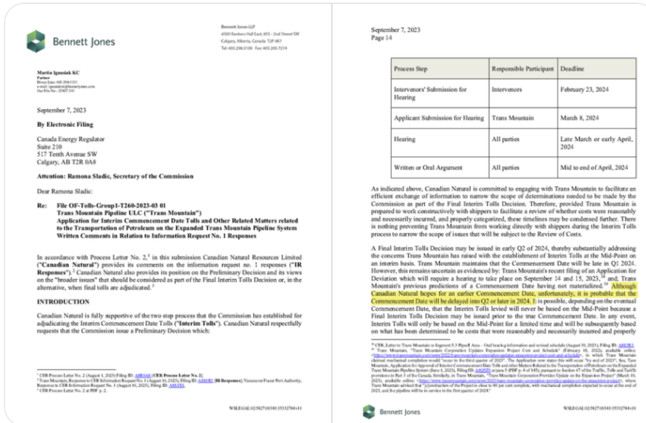


2 8 1,973

Dan Tsubouchi @Energy_Tidbits · Sep 7

CNQ expects #TMX delay. CER filing "Although $CNQ hopes for an earlier Commencement Date, unfortunately, it is probable that the Commencement Date will be delayed into Q2 or later in 2024".

Fits 👇 08/30/23 tweet on Trans Mountain changed language on TMX start.
#OOTT



Bennett Jones

Bennett Jones LLP
4500 Bankers Hall East, 855 - 2nd Street SW
Calgary, Alberta, Canada T2P 4K7
Tel 403.298.3100 Fax 403.265.7219

Martin Ignasiak KC
Partner

September 7, 2023

By Electronic Filing

Canada Energy Regulator
Suite 210
517 Tenth Avenue SW
Calgary, AB T2R 0A8

Attention: Ramona Sladic, Secretary of the Commission

Dear Ramona Sladic:

Re: **File OF-Tolls-Group1-T260-2023-03 01**
Trans Mountain Pipeline ULC ("Trans Mountain")
Application for Interim Commencement Date Tolls and Other Related Matters related to the Transportation of Petroleum on the Expanded Trans Mountain Pipeline System
Written Comments in Relation to Information Request No. 1 Responses

In accordance with Process Letter No. 2,[1] in this submission Canadian Natural Resources Limited (**"Canadian Natural"**) provides its comments on the information request no. 1 responses (**"IR Responses"**).[2] Canadian Natural also provides its position on the Preliminary Decision and its views on the "broader issues" that should be considered as part of the Final Interim Tolls Decision or, in the alternative, when final tolls are adjudicated.[3]

INTRODUCTION

Canadian Natural is fully supportive of the two step process that the Commission has established for adjudicating the Interim Commencement Date Tolls (**"Interim Tolls"**). Canadian Natural respectfully requests that the Commission issue a Preliminary Decision which:

September 7, 2023
Page 14

Process Step	Responsible Participant	Deadline
Intervenors' Submission for Hearing	Intervenors	February 23, 2024
Applicant Submission for Hearing	Trans Mountain	March 8, 2024
Hearing	All parties	Late March or early April, 2024
Written or Oral Argument	All parties	Mid to end of April, 2024

As indicated above, Canadian Natural is committed to engaging with Trans Mountain to facilitate an efficient exchange of information to narrow the scope of determinations needed to be made by the Commission as part of the Final Interim Tolls Decision. Therefore, provided Trans Mountain is prepared to work constructively with shippers to facilitate a review of whether costs were reasonably and necessarily incurred, and properly categorized, these timelines may be condensed further. There is nothing preventing Trans Mountain from working directly with shippers during the Interim Tolls process to narrow the scope of issues that will be subject to the Review of Costs.

A Final Interim Tolls Decision may be issued in early Q2 of 2024, thereby substantially addressing the concerns Trans Mountain has raised with the establishment of Interim Tolls at the Mid-Point on an interim basis. Trans Mountain maintains that the Commencement Date will be late in Q1 2024. However, this remains uncertain as evidenced by: Trans Mountain's recent filing of an Application for Deviation which will require a hearing to take place on September 14 and 15, 2023,[38] and; Trans Mountain's previous predictions of a Commencement Date having not materialized.[39] Although Canadian Natural hopes for an earlier Commencement Date, unfortunately, it is probable that the Commencement Date will be delayed into Q2 or later in 2024. It is possible, depending on the eventual Commencement Date, that the Interim Tolls levied will never be based on the Mid-Point because a Final Interim Tolls Decision may be issued prior to the true Commencement Date. In any event, Interim Tolls will only be based on the Mid-Point for a limited time and will be subsequently based on what has been determined to be costs that were reasonably and necessarily incurred and properly

Bennett Jones

Dan Tsubouchi @Energy_Tidbits · Aug 30

Hmmm!

Note 👇 Trans Mountain's new Q2 language on #TMX start vs Q1 & Q4.
...

2 · 9 · 16 · 10.3K

Dan Tsubouchi @Energy_Tidbits · Sep 7

#Chevron Australia LNG workers to begin strikes on Friday. Workers at Chevron's two major liquefied natural gas(LNG) projects in Australia will begin planned strike action on Friday, a union alliance said. reports @renjujose.

#OOTT #NatGas

finance.yahoo.com

Chevron Australia LNG workers to begin strikes on Friday

Workers at Chevron's two major liquefied natural gas(LNG) projects in Australia will begin planned strike action on Friday, a union alliance ...

1 9 1,728

Dan Tsubouchi @Energy_Tidbits · Sep 7

Texas @ERCOT_ISO electricity warning reminds of two renewable fundamentals.

#Solar goes to zero every night.

And remember Texas #Wind generation is seasonally low in the summer. See 👇 07/26/22 tweet @SPGlobalPlatts graph.

It's why #NatGas is needed to save the day.

#OOTT

https://www.ercot.com/news/release/2023-09-06-ercot-expects-tight
News Release
Sep 6, 2023
ERCOT Expects Tight Grid Conditions, Requests Conservation Today from 6 p.m. to 9 p.m. CT

(Austin, TX) – Due to continued high temperatures, high demand, low wind, and declining solar power generation this evening, operating reserves are expected to be low into the evening hours. As a result, ERCOT is asking Texans to conserve electricity use, if safe to do so, today, September 6, from 6 p.m. – 9 p.m. CT.

Today's conservation appeal does not indicate ERCOT is experiencing emergency conditions at this time. Current forecasts are showing a potential for low reserves this evening because of continued high temperatures, high demand, low wind, and declining solar power generation into the evening hours. ERCOT will continue to closely monitor conditions throughout the day and will keep the public informed through our communications channels.

ERCOT is requesting all government agencies (including city and county offices) to implement all programs to reduce energy use at their facilities.

ERCOT continues to use additional tools to manage the grid reliably, including using reserve power, calling upon reductions by large electric customers that have volunteered to lower their energy use, and bringing more generation online sooner. ERCOT is also working with out-of-state Independent System Operators (ISOs) and Market Participants to obtain additional power generation capacity.

Conservation is a widely used industry tool that can help lower demand for a specific period of peak demand time, which is typically late afternoon into the evening hours. Energy-saving tips can be found on the TXANS webpage at ercot.com/txans.

If you are experiencing an outage at this time, it is local in nature and not related to overall grid reliability. Please check with your local electric provider for more information.

Why the Request to Reduce Usage?

- **Heat**. Continued statewide high temperatures.
- **Demand**. Texas is seeing high demand due to the heat.
- **Solar**. Solar generation starts to decline earlier in the afternoon hours towards the end of summer before completely going offline at sunset.
- **Wind**. Wind generation is forecasted to be low this evening during peak demand time.

Peak Demand

- ERCOT set a new, all-time, unofficial peak demand record of 85,435 MW on August 10, 2023.
- ERCOT set a new all-time September peak demand record of 81,674 MW on September 5, 2023, surpassing the previous September peak of 78,459 MW set on September 4.
- This summer, ERCOT has set 10 new all-time peak demand records.
- Last summer, ERCOT set 11 new peak demand records with a high of 80,148 MW on July 20.

Consumer Assistance

- Public Utility Commission of Texas Hotline: 1-888-782-8477

Stay Updated

- Sign up for TXANS notifications on the TXANS webpage.
- Download the ERCOT Mobile App for additional notifications: iOS | Android.
- Monitor real-time and extended conditions at ercot.com.
- Subscribe to ERCOT Emergency Alerts, which are not sent through TXANS notifications.
- Follow ERCOT on Twitter (@ERCOT_ISO), Facebook (Electric Reliability Council of Texas), and LinkedIn (ERCOT).

> **Dan Tsubouchi** @Energy_Tidbits · Jul 26, 2022
>
> 
>
>
> Texas #Wind generation up big in 2022, however, average wind output tends to wane from June thru Sept. and risk increases for sufficient wind power to be unavailable during certain peak hours in Aug & Sept. Great reminder from @SPGlobalPlatts Mark Watson. ...

5 13 4,590

Dan Tsubouchi @Energy_Tidbits · Sep 7

For those not near their laptops. At 9am MT, @EIAgov released its #Oil #Gasoline #Distillates inventory as of Sept 1. Table below compares EIA data vs @business expectations and vs @APIenergy yesterday. Prior to release, WTI was $87.50. #OOTT

Oil/Products Inventory Sept 1: EIA, Bloomberg Survey Expectations, API

(million barrels)	EIA	Expectations	API
Oil	-6.31	-2.00	-5.52
Gasoline	-2.67	-1.00	-5.09
Distillates	0.68	1.00	0.31
	-8.30	-2.00	-10.30

Note: Oil is commercial so builds in a build of 0.8 mmb in SPR for the Sept 1 week
Note: Included in the oil data, Cushing had a 1.75 mmb draw for Sept 1 week
Source EIA, Bloomberg
Prepared by SAF Group https://safgroup.ca/news-insights/

1 1 7 1,257

Dan Tsubouchi @Energy_Tidbits · Sep 7

always great to see a 🇨🇦 E&P stock highlighted on @SquawkCNBC. billionaire investor Leon Cooperman just now to @BeckyQuick @andrewrsorkin on his Paramount Resources $POU holding. #OOTT #NatGas

5 41 7,734

Dan Tsubouchi @Energy_Tidbits · Sep 7

Summer is over, so 5th consecutive WoW increase in China city-level road congestion.

China Baidu city-level road congestion +6.5% WoW to 136.3% of Jan/21 levels.

Top 15 cities in aggregate up YoY, but biggest cities Shanghai & Beijing down YoY.

Thx @BloombergNEF
#OOTT

3 9 1,447

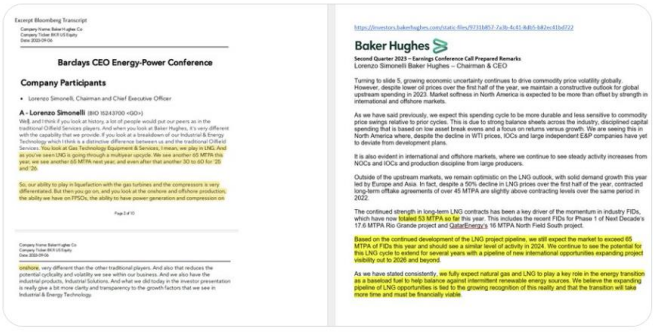
Dan Tsubouchi @Energy_Tidbits · Sep 6

#BakerHughes CEO Simonelli reaffirms 07/22 Q2 bullish outlook for #LNG FIDs over next 18 mths and added expectations for 25/26.

FIDs.
2023: 8.6 bcf/d
2024: 8.6 bcf/d
2025 & 2026: 3.95 to 7.90 bcf/d.

Surely #LNGCanada brownfield 1.8 bcfd Phase 2 is part of next 18 mths.

#OOTT



Excerpt Bloomberg Transcript

Company Name: Baker Hughes Co
Company Ticker: BKR US Equity
Date: 2020-09-16

Bardays CEO Energy-Power Conference

Company Participants

- Lorenzo Simonelli, Chairman and Chief Executive Officer

A - Lorenzo Simonelli (BIO 15243700 <GO>)

Well, and I think if you look at history, a lot of people would put our peers as in the traditional Oilfield Services players. And when you look at Baker Hughes, it's very different with the capability that we provide. If you look at a breakdown of our Industrial & Energy Technology which I think is a distinctive difference between us and the traditional Oilfield Services. You look at Gas Technology Equipment & Services, I mean, we play in LNG. And as you've seen LNG is going through a multiyear upcycle. We see another 65 MTPA this year, we see another 65 MTPA next year, and even after that another 30 to 60 for '25 and '26.

So, our ability to play in liquefaction with the gas turbines and the compressors is very differentiated. But then you go on, and you look at the onshore and offshore production, the ability we have on FPSOs, the ability to have power-generation and compression on

Page 3 of 10

Company Name: Baker Hughes Co
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Date: 2020-09-16

onshore, very different than the other traditional players. And also that reduces the potential cyclicality and volatility we see within our business. And we also have the industrial products, Industrial Solutions. And what we did today in the investor presentation is really give a bit more clarity and transparency to the growth factors that we see in Industrial & Energy Technology.

https://investors.bakerhughes.com/static-files/9731b857-7a3b-4c41-8d65-b82ec41bd722

Baker Hughes

Second Quarter 2023 – Earnings Conference Call Prepared Remarks
Lorenzo Simonelli Baker Hughes – Chairman & CEO

Turning to slide 5, growing economic uncertainty continues to drive commodity price volatility globally. However, despite lower oil prices over the first half of the year, we maintain a constructive outlook for global upstream spending in 2023. Market softness in North America is expected to be more than offset by strength in international and offshore markets.

As we have said previously, we expect this spending cycle to be more durable and less sensitive to commodity price swings relative to prior cycles. This is due to strong balance sheets across the industry, disciplined capital spending that is based on low asset break evens and a focus on returns versus growth. We are seeing this in North America where, despite the decline in WTI prices, IOCs and large independent E&P companies have yet to deviate from development plans.

It is also evident in international and offshore markets, where we continue to see steady activity increases from NOCs and IOCs and production discipline from large producers.

Outside of the upstream markets, we remain optimistic on the LNG outlook, with solid demand growth this year led by Europe and Asia. In fact, despite a 50% decline in LNG prices over the first half of the year, contracted long-term offtake agreements of over 45 MTPA are slightly above contracting levels over the same period in 2022.

The continued strength in long-term LNG contracts has been a key driver of the momentum in industry FIDs, which have now totaled 53 MTPA so far this year. This includes the recent FIDs for Phase 1 of Next Decade's 17.6 MTPA Rio Grande project and QatarEnergy's 16 MTPA North Field South project.

Based on the continued development of the LNG project pipeline, we still expect the market to exceed 65 MTPA of FIDs this year and should see a similar level of activity in 2024. We continue to see the potential for this LNG cycle to extend for several years with a pipeline of new international opportunities expanding project visibility out to 2026 and beyond.

As we have stated consistently, we fully expect natural gas and LNG to play a key role in the energy transition as a baseload fuel to help balance against intermittent renewable energy sources. We believe the expanding pipeline of LNG opportunities is tied to the growing recognition of this reality and that the transition will take more time and must be financially viable.

> **Dan Tsubouchi** @Energy_Tidbits · Jul 22
>
> 
>
> >10 bcfd LNG FIDs in next 18 mths.
>
> $BKR CEO @simonelli_l: 7.0 bcfd #LNG FIDs so far in 2023. Expects another 1.6 bcfd FIDs in 2023 and a further 8.6 bcfd FIDs in 2024....

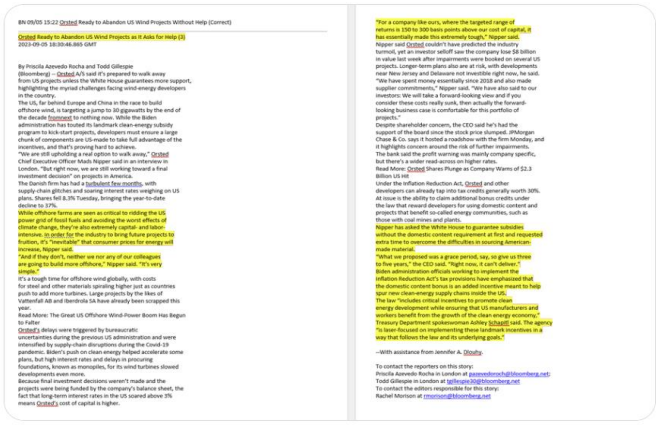
5 15 5,936

Dan Tsubouchi @Energy_Tidbits · Sep 6

Reality check. Energy costs will be higher in #EnergyTransition.

It's "*inevitable*" that electricity prices have to go higher, "a*nd if they don't, neither we nor any of our colleagues are going to more offshore"* in US. #Orsted CEO.

Thx @priazrocha @_ToddGillespie
#OOTT #NatGas



BN 09/05 15:22 Orsted Ready to Abandon US Wind Projects Without Help (Correct)

Orsted Ready to Abandon US Wind Projects as It Asks for Help (3)
2023-09-05 16:30:46.865 GMT

By Priscila Azevedo Rocha and Todd Gillespie
(Bloomberg) -- Orsted A/S said it's prepared to walk away from US projects unless the White House guarantees more support, highlighting the myriad challenges facing wind-energy developers in the country.
The US, far behind Europe and China in the race to build offshore wind, is targeting a jump to 30 gigawatts by the end of the decade frontward to nothing now. While the Biden administration has touted its landmark clean-energy subsidy program to kick-start projects, developers must ensure a large chunk of components are US-made to take full advantage of the incentives, and that's proving hard to achieve.
"We are still upholding a real option to walk away," Orsted Chief Executive Officer Mads Nipper said in an interview in London. "But right now, we are still working toward a final investment decision" on projects in America.
The Danish firm has had a turbulent few months, with supply-chain glitches and soaring interest rates weighing on US plans. Shares fell 8.3% Tuesday, bringing the year-to-date decline to 37%.
While offshore farms are seen as critical to ridding the US power grid of fossil fuels and avoiding the worst effects of climate change, they're also extremely capital- and labor-intensive, in order for the industry to bring future projects to fruition, it's "inevitable" that consumer prices for energy will increase, Nipper said.
"And if they don't, neither we nor any of our colleagues are going to build more offshore," Nipper said. "It's very simple."
It's a tough time for offshore wind globally, with costs for steel and other materials spiraling higher just as countries push to add more turbines. Large projects by the likes of Vattenfall AB and Iberdrola SA have already been scrapped this year.
Read More: The Great US Offshore Wind-Power Boom Has Begun to Falter
Orsted's delays were triggered by bureaucratic uncertainties during the previous US administration and were intensified by supply-chain disruptions during the Covid-19 pandemic. Biden's push on clean-energy helped accelerate some plans, but high interest rates and delays in procuring foundations, known as monopiles, for its wind turbines slowed developments even more.
Because final investment decisions weren't made and the projects were being funded by the company's balance sheet, the fact that long-term interest rates in the US soared above 3% means Orsted's cost of capital is higher.

"For a company like ours, where the targeted range of returns is 150 to 300 basis points above our cost of capital, it has essentially made this extremely tough," Nipper said.
Nipper said Orsted couldn't have predicted the industry turmoil, yet an investor selloff saw the company lose $8 billion in value last week after impairments were booked on several US projects. Longer-term plans also are at risk, with developments near New Jersey and Delaware not investible right now, he said.
"We have spent money essentially since 2018 and also made supplier commitments," Nipper said. "We have also said to our investors: We will take a forward-looking view and if you consider these costs really sunk, then actually the forward-looking business case is comfortable for this portfolio of projects."
Despite shareholder concern, the CEO said he's had the support of the board since the stock price slumped. JPMorgan Chase & Co. says it hosted a roadshow with the firm Monday, and it highlights concern around the risk of further impairments.
The bank said the profit warning was mainly company specific, but there's a wider read-across on higher rates.
Read More: Orsted Shares Plunge as Company Warns of $2.3 Billion US Hit
Under the Inflation Reduction Act, Orsted and other developers can already tap into tax credits generally worth 30%. At issue is the ability to claim additional bonus credits under the law that reward developers for using domestic content and projects that benefit so-called energy communities, such as those with coal mines and plants.
Nipper has asked the White House to guarantee subsidies without the domestic content requirement at first and requested extra time to overcome the difficulties in sourcing American-made material.
"What we proposed was a grace period, say, so give us three to five years," the CEO said. "Right now, it can't deliver."
Biden administration officials working to implement the Inflation Reduction Act's tax provisions have emphasized that the domestic content bonus is an added incentive meant to help spur new clean-energy supply chains inside the US.
The law "includes critical incentives to promote clean energy development while ensuring that US manufacturers and workers benefit from the growth of the clean energy economy," Treasury Department spokeswoman Ashley Schaaff said. The agency "is laser-focused on implementing these landmark incentives in a way that follows the law and its underlying goals."

--With assistance from Jennifer A. Dlouhy.

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> **Dan Tsubouchi** @Energy_Tidbits · Sep 4
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> 
>
> Looks like @NYSERDA knows have to renegotiate and pay up or else major NY #OffshoreWInd won't happen.
>
> So expect delays and higher than promised prices for wind electricity to consumers for the ...

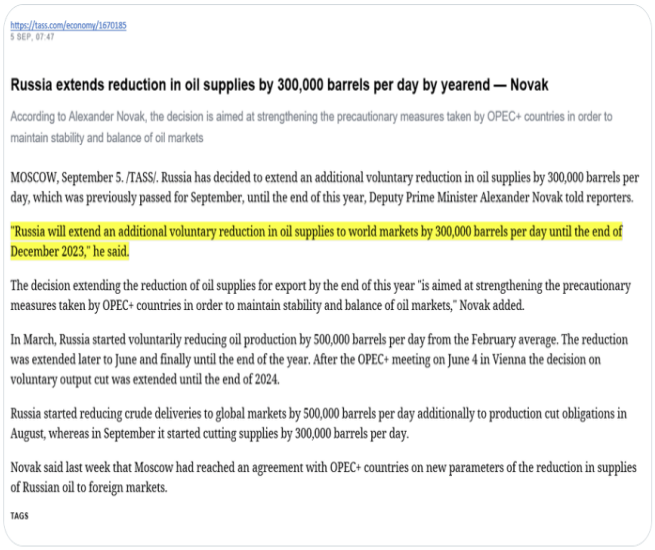
2 9 20 9,318

Dan Tsubouchi @Energy_Tidbits · Sep 5

ICYMI. Brent is $89.75.

"Russia will extend an additional voluntary reduction in oil supplies to world markets by 300,000 barrels per day until the end of December 2023," RUS Deputy PM Novak.

#OOTT



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Russia extends reduction in oil supplies by 300,000 barrels per day by yearend — Novak

According to Alexander Novak, the decision is aimed at strengthening the precautionary measures taken by OPEC+ countries in order to maintain stability and balance of oil markets

MOSCOW, September 5. /TASS/. Russia has decided to extend an additional voluntary reduction in oil supplies by 300,000 barrels per day, which was previously passed for September, until the end of this year, Deputy Prime Minister Alexander Novak told reporters.

"Russia will extend an additional voluntary reduction in oil supplies to world markets by 300,000 barrels per day until the end of December 2023," he said.

The decision extending the reduction of oil supplies for export by the end of this year "is aimed at strengthening the precautionary measures taken by OPEC+ countries in order to maintain stability and balance of oil markets," Novak added.

In March, Russia started voluntarily reducing oil production by 500,000 barrels per day from the February average. The reduction was extended later to June and finally until the end of the year. After the OPEC+ meeting on June 4 in Vienna the decision on voluntary output cut was extended until the end of 2024.

Russia started reducing crude deliveries to global markets by 500,000 barrels per day additionally to production cut obligations in August, whereas in September it started cutting supplies by 300,000 barrels per day.

Novak said last week that Moscow had reached an agreement with OPEC+ countries on new parameters of the reduction in supplies of Russian oil to foreign markets.

TAGS

5 12 1,996

Dan Tsubouchi @Energy_Tidbits · Sep 5

China schedule domestic flights -1.2% WoW to 103,637 as summer ends & Typhoon Saola.

next 4-wks -1.3% to 102,285 BUT @BloombergNEF warns # of scheduled flights is at risk. Since the early days of the pandemic, China has routinely cut several thousand scheduled flights wk or so... Show more

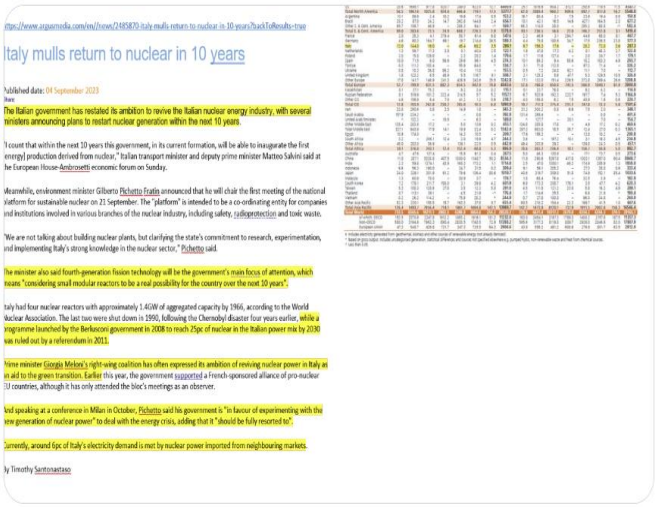
2 3 1,784

Dan Tsubouchi @Energy_Tidbits · Sep 4

Italy latest to look to bring back nuclear power for green transition ie. mini-nukes (small modular reactors)

But until some distant time (ie. >2040?), will need #NatGas for 24/7 power as gas was 54.4% of 2022 electricity.

Thx @ArgusMedia @TimothySanton @EnergyInstitute #OOTT



https://www.argusmedia.com/en/news/2489870-italy-mulls-return-to-nuclear-in-10-years?backToResults=true

Italy mulls return to nuclear in 10 years

Published date: 04 September 2023

Rome

The Italian government has restated its ambition to revive the Italian nuclear energy industry, with several ministers announcing plans to restart nuclear generation within the next 10 years.

"I count that within the next 10 years this government, in its current formation, will be able to inaugurate the first [energy] production derived from nuclear," Italian transport minister and deputy prime minister Matteo Salvini said at the European House-Ambrosetti economic forum on Sunday.

Meanwhile, environment minister Gilberto Pichetto Fratin announced that he will chair the first meeting of the national platform for sustainable nuclear on 21 September. The "platform" is intended to be a co-ordinating entity for companies and institutions involved in various branches of the nuclear industry, including safety, radioprotection and toxic waste.

"We are not talking about building nuclear plants, but clarifying the state's commitment to research, experimentation, and implementing Italy's strong knowledge in the nuclear sector," Pichetto said.

The minister also said fourth-generation fission technology will be the government's main focus of attention, which means "considering small modular reactors to be a real possibility for the country over the next 10 years".

Italy had four nuclear reactors with approximately 1.4GW of aggregated capacity by 1966, according to the World Nuclear Association. The last two were shut down in 1990, following the Chernobyl disaster four years earlier, while a programme launched by the Berlusconi government in 2008 to reach 25pc of nuclear in the Italian power mix by 2030 was ruled out by a referendum in 2011.

Prime minister Giorgia Meloni's right-wing coalition has often expressed its ambition of reviving nuclear power in Italy as an aid to the green transition. Earlier this year, the government supported a French-sponsored alliance of pro-nuclear EU countries, although it has only attended the bloc's meetings as an observer.

And speaking at a conference in Milan in October, Pichetto said his government is "in favour of experimenting with the new generation of nuclear power" to deal with the energy crisis, adding that it "should be fully resorted to".

Currently, around 6pc of Italy's electricity demand is met by nuclear power imported from neighbouring markets.

By Timothy Santonastaso

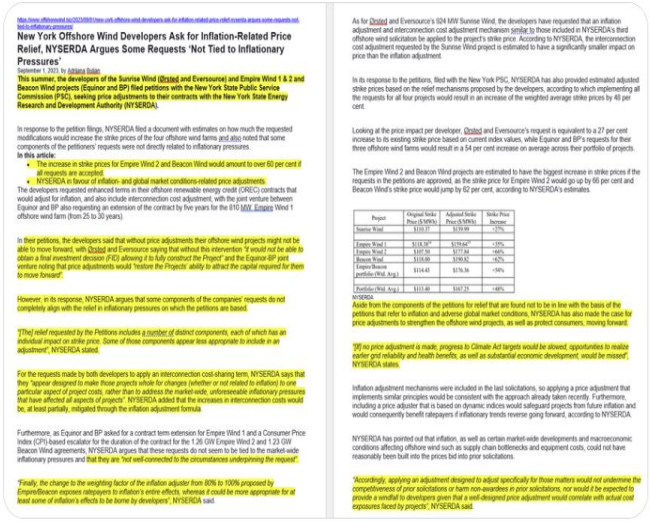
2 3 2,210

Dan Tsubouchi @Energy_Tidbits · Sep 4

Looks like @NYSERDA knows have to renegotiate and pay up or else major NY #OffshoreWInd won't happen.

So expect delays and higher than promised prices for wind electricity to consumers for the #EnergyTransition.

Thx @OffshoreWINDbiz Adrijana Buljan.
#OOTT #NatGas



https://www.offshorewind.biz/2023/09/01/new-york-offshore-wind-developers-ask-for-inflation-related-price-relief-nyserda-argues-some-requests-not-tied-to-inflationary-pressures/

New York Offshore Wind Developers Ask for Inflation-Related Price Relief, NYSERDA Argues Some Requests 'Not Tied to Inflationary Pressures'

September 1, 2023, by Adriana Buljan

This summer, the developers of the Sunrise Wind (Ørsted and Eversource) and Empire Wind 1 & 2 and Beacon Wind projects (Equinor and BP) filed petitions with the New York State Public Service Commission (PSC), seeking price adjustments to their contracts with the New York State Energy Research and Development Authority (NYSERDA).

In response to the petition filings, NYSERDA filed a document with estimates on how much the requested modifications would increase the strike prices of the four offshore wind farms and also noted that some components of the petitioners' requests were not directly related to inflationary pressures.

In this article:

- The increase in strike prices for Empire Wind 2 and Beacon Wind would amount to over 60 per cent if all requests are accepted
- NYSERDA in favour of inflation- and global market conditions-related price adjustments.

The developers requested enhanced terms in their offshore renewable energy credit (OREC) contracts that would adjust for inflation, and also include interconnection cost adjustment, with the joint venture between Equinor and BP also requesting an extension of the contract by five years for the 810 MW Empire Wind 1 offshore wind farm (from 25 to 30 years).

In their petitions, the developers said that without price adjustments their offshore wind projects might not be able to move forward, with Ørsted and Eversource saying that without this intervention *"it would not be able to obtain a final investment decision (FID) allowing it to fully construct the Project"* and the Equinor-BP joint venture noting that price adjustments would *"restore the Projects' ability to attract the capital required for them to move forward"*.

However, in its response, NYSERDA argues that some components of the companies' requests do not completely align with the relief in inflationary pressures on which the petitions are based.

"[The] relief requested by the Petitions includes a number of distinct components, each of which has an individual impact on strike price. Some of those components appear less appropriate to include in an adjustment", NYSERDA stated.

For the requests made by both developers to apply an interconnection cost-sharing term, NYSERDA says that they *"appear designed to make those projects whole for changes (whether or not related to inflation) to one particular aspect of project costs, rather than to address the market-wide, unforeseeable inflationary pressures that have affected all aspects of projects"*. NYSERDA added that the increases in interconnection costs would be, at least partially, mitigated through the inflation adjustment formula.

Furthermore, as Equinor and BP asked for a contract term extension for Empire Wind 1 and a Consumer Price Index (CPI)-based escalator for the duration of the contract for the 1.26 GW Empire Wind 2 and 1.23 GW Beacon Wind agreements, NYSERDA argues that these requests do not seem to be tied to the market-wide inflationary pressures and that they are *"not well-connected to the circumstances underpinning the request"*.

"Finally, the change to the weighting factor of the inflation adjustor from 80% to 100% proposed by Empire/Beacon exposes ratepayers to inflation's entire effects, whereas it could be more appropriate for at least some of inflation's effects to be borne by developers", NYSERDA said.

As for Ørsted and Eversource's 924 MW Sunrise Wind, the developers have requested that an inflation adjustment and interconnection cost adjustment mechanism similar to those included in NYSERDA's third offshore wind solicitation be applied to the project's strike price. According to NYSERDA, the interconnection cost adjustment requested by the Sunrise Wind project is estimated to have a significantly smaller impact on price than the inflation adjustment.

In its response to the petitions, filed with the New York PSC, NYSERDA has also provided estimated adjusted strike prices based on the relief mechanisms proposed by the developers, according to which implementing all the requests for all four projects would result in an increase of the weighted average strike prices by 49 per cent.

Looking at the price impact per developer, Ørsted and Eversource's request is equivalent to a 27 per cent increase to its existing strike price based on current index values, while Equinor and BP's requests for their three offshore wind farms would result in a 54 per cent increase on average across their portfolio of projects.

The Empire Wind 2 and Beacon Wind projects are estimated to have the biggest increase in strike prices if the requests in the petitions are approved, as the strike price for Empire Wind 2 would go up by 66 per cent and Beacon Wind's strike price would jump by 62 per cent, according to NYSERDA's estimates.

Project	Original Strike Price ($/MWh)	Adjusted Strike Price ($/MWh)	Strike Price Increase
Sunrise Wind	$110.37	$139.99	+27%
Empire Wind 1	$118.74[a]	$199.64[a]	+35%
Empire Wind 2	$107.50	$177.84	+66%
Beacon Wind	$119.00	$190.82	+62%
Empire/Beacon portfolio (Wtd. Avg.)	$114.43	$176.36	+54%
Portfolio (Wtd. Avg.)	$113.40	$167.23	+48%

NYSERDA

Aside from the components of the petitions for relief that are found not to be in line with the basis of the petitions that refer to inflation and adverse global market conditions, NYSERDA has also made the case for price adjustments to strengthen the offshore wind projects, as well as protect consumers, moving forward.

"[If] no price adjustment is made, progress to Climate Act targets would be slowed, opportunities to realize earlier grid reliability and health benefits, as well as substantial economic development, would be missed", NYSERDA states.

Inflation adjustment mechanisms were included in the last solicitations, so applying a price adjustment that implements similar principles would be consistent with the approach already taken recently. Furthermore, including a price adjuster that is based on dynamic indices would safeguard projects from future inflation and would consequently benefit ratepayers if inflationary trends reverse going forward, according to NYSERDA.

NYSERDA has pointed out that inflation, as well as certain market-wide developments and macroeconomic conditions affecting offshore wind such as supply chain bottlenecks and equipment costs, could not have reasonably been built into the prices bid into prior solicitations.

"Accordingly, applying an adjustment designed to adjust specifically for those matters would not undermine the competitiveness of prior solicitations or harm non-awardees in prior solicitations, nor would it be expected to provide a windfall to developers given that a well-designed price adjustment would correlate with actual cost exposures faced by projects", NYSERDA said.

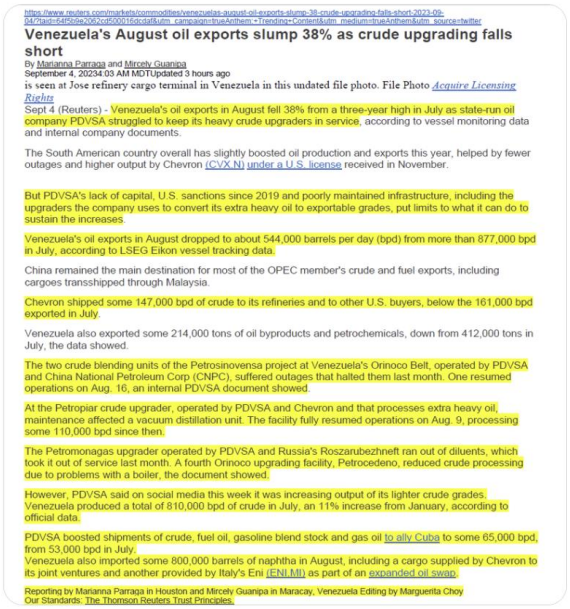
5 6 12K

Dan Tsubouchi @Energy_Tidbits · Sep 4

Venezuela needs capital & diluents as it must upgrade its heavy oil to meet export specs.

Exports Aug 544,000 b/d vs July 877,000. Upgraders either down or short diluent.

#Chevron VEN #Oil into PADD 3 was Aug 147,000 b/d vs July 161,000.
Thx @mariannaparraga @MircelyG
#OOTT



https://www.reuters.com/markets/commodities/venezuelas-august-oil-exports-slump-38-crude-upgrading-falls-short-2023-09-04/?taid=64f50e2062cdf500016dcdd6&utm_campaign=trueAnthem:+Trending+Content&utm_medium=trueAnthem&utm_source=twitter

Venezuela's August oil exports slump 38% as crude upgrading falls short

By Marianna Parraga and Mircely Guanipa
September 4, 20234:03 AM MDTUpdated 3 hours ago

is seen at Jose refinery cargo terminal in Venezuela in this undated file photo. File Photo *Acquire Licensing Rights*

Sept 4 (Reuters) - Venezuela's oil exports in August fell 38% from a three-year high in July as state-run oil company PDVSA struggled to keep its heavy crude upgraders in service, according to vessel monitoring data and internal company documents.

The South American country overall has slightly boosted oil production and exports this year, helped by fewer outages and higher output by Chevron (CVX.N) under a U.S. license received in November.

But PDVSA's lack of capital, U.S. sanctions since 2019 and poorly maintained infrastructure, including the upgraders the company uses to convert its extra heavy oil to exportable grades, put limits to what it can do to sustain the increases.

Venezuela's oil exports in August dropped to about 544,000 barrels per day (bpd) from more than 877,000 bpd in July, according to LSEG Eikon vessel tracking data.

China remained the main destination for most of the OPEC member's crude and fuel exports, including cargoes transshipped through Malaysia.

Chevron shipped some 147,000 bpd of crude to its refineries and to other U.S. buyers, below the 161,000 bpd exported in July.

Venezuela also exported some 214,000 tons of oil byproducts and petrochemicals, down from 412,000 tons in July, the data showed.

The two crude blending units of the Petrosinovensa project at Venezuela's Orinoco Belt, operated by PDVSA and China National Petroleum Corp (CNPC), suffered outages that halted them last month. One resumed operations on Aug. 16, an internal PDVSA document showed.

At the Petropiar crude upgrader, operated by PDVSA and Chevron and that processes extra heavy oil, maintenance affected a vacuum distillation unit. The facility fully resumed operations on Aug. 9, processing some 110,000 bpd since then.

The Petromonagas upgrader operated by PDVSA and Russia's Roszarubezhneft ran out of diluents, which took it out of service last month. A fourth Orinoco upgrading facility, Petrocedeno, reduced crude processing due to problems with a boiler, the document showed.

However, PDVSA said on social media this week it was increasing output of its lighter crude grades. Venezuela produced a total of 810,000 bpd of crude in July, an 11% increase from January, according to official data.

PDVSA boosted shipments of crude, fuel oil, gasoline blend stock and gas oil to ally Cuba to some 65,000 bpd, from 53,000 bpd in July.
Venezuela also imported some 800,000 barrels of naphtha in August, including a cargo supplied by Chevron to its joint ventures and another provided by Italy's Eni (ENI.MI) as part of an expanded oil swap.

Reporting by Marianna Parraga in Houston and Mircely Guanipa in Maracay, Venezuela Editing by Marguerita Choy
Our Standards: The Thomson Reuters Trust Principles.

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Dan Tsubouchi @Energy_Tidbits · Sep 4

#EV range becoming less of an issue for winter countries for the higher income.

#Mercedes CEO Kaellenius new EV Concept CLA - Class.

"More than 750 km range"

"12 kwh per 100 km"

"400 km range charged in only 15 minutes"

#OOTT @youseftv @ocrook

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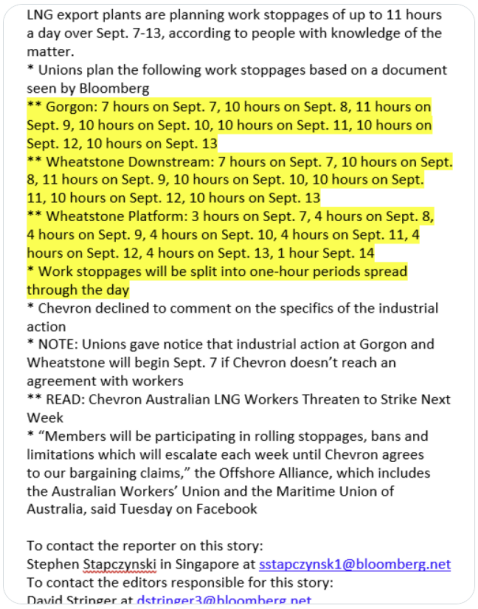
Dan Tsubouchi @Energy_Tidbits · Sep 3

Work stoppages to start Sept 7 if no labor deal at #Chevron's Gorgon LNG 2.1 bcfd & Wheatstone 1.2 bcfd in AUS.

Note stoppages to be split into 1-hr periods spread thru the day. ie. a 7 hr stoppage covers >14 hrs.

Schedule per @SStapczynski.

#OOTT #NatGas #LNG



LNG export plants are planning work stoppages of up to 11 hours a day over Sept. 7-13, according to people with knowledge of the matter.
* Unions plan the following work stoppages based on a document seen by Bloomberg
** Gorgon: 7 hours on Sept. 7, 10 hours on Sept. 8, 11 hours on Sept. 9, 10 hours on Sept. 10, 10 hours on Sept. 11, 10 hours on Sept. 12, 10 hours on Sept. 13
** Wheatstone Downstream: 7 hours on Sept. 7, 10 hours on Sept. 8, 11 hours on Sept. 9, 10 hours on Sept. 10, 10 hours on Sept. 11, 10 hours on Sept. 12, 10 hours on Sept. 13
** Wheatstone Platform: 3 hours on Sept. 7, 4 hours on Sept. 8, 4 hours on Sept. 9, 4 hours on Sept. 10, 4 hours on Sept. 11, 4 hours on Sept. 12, 4 hours on Sept. 13, 1 hour Sept. 14
* Work stoppages will be split into one-hour periods spread through the day
* Chevron declined to comment on the specifics of the industrial action
* NOTE: Unions gave notice that industrial action at Gorgon and Wheatstone will begin Sept. 7 if Chevron doesn't reach an agreement with workers
** READ: Chevron Australian LNG Workers Threaten to Strike Next Week
* "Members will be participating in rolling stoppages, bans and limitations which will escalate each week until Chevron agrees to our bargaining claims," the Offshore Alliance, which includes the Australian Workers' Union and the Maritime Union of Australia, said Tuesday on Facebook

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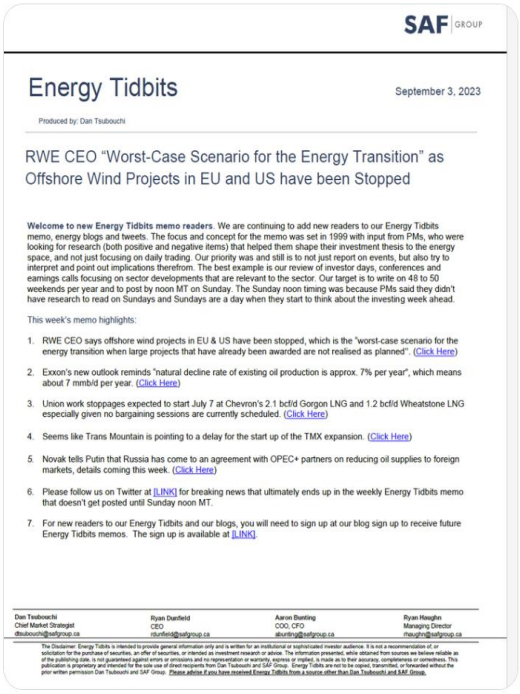
1 10 15 5,321

Dan Tsubouchi @Energy_Tidbits · Sep 3

SAF Group Sept 3, 2023 Energy Tidbits memo is posted on SAF Group website. this 72-pg energy research memo expands upon & covers more items than tweeted this week. Available at news/insights section of SAF website #Oil #OOTT #LNG #NatGas #EnergyTransition



SAF GROUP

Energy Tidbits

September 3, 2023

Produced by: Dan Tsubouchi

RWE CEO "Worst-Case Scenario for the Energy Transition" as Offshore Wind Projects in EU and US have been Stopped

Welcome to new Energy Tidbits memo readers. We are continuing to add new readers to our Energy Tidbits memo, energy blogs and tweets. The focus and concept for the memo was set in 1999 with input from PMs, who were looking for research (both positive and negative items) that helped them shape their investment thesis to the energy space, and not just focusing on daily trading. Our priority was and still is to not just report on events, but also try to interpret and point out implications therefrom. The best example is our review of investor days, conferences and earnings calls focusing on sector developments that are relevant to the sector. Our target is to write on 48 to 50 weekends per year and to post by noon MT on Sunday. The Sunday noon timing was because PMs said they didn't have research to read on Sundays and Sundays are a day when they start to think about the investing week ahead.

This week's memo highlights:

1. RWE CEO says offshore wind projects in EU & US have been stopped, which is the "worst-case scenario for the energy transition when large projects that have already been awarded are not realised as planned". (Click Here)
2. Exxon's new outlook reminds "natural decline rate of existing oil production is approx. 7% per year", which means about 7 mmb/d per year. (Click Here)
3. Union work stoppages expected to start July 7 at Chevron's 2.1 bcf/d Gorgon LNG and 1.2 bcf/d Wheatstone LNG especially given no bargaining sessions are currently scheduled. (Click Here)
4. Seems like Trans Mountain is pointing to a delay for the start up of the TMX expansion. (Click Here)
5. Novak tells Putin that Russia has come to an agreement with OPEC+ partners on reducing oil supplies to foreign markets, details coming this week. (Click Here)
6. Please follow us on Twitter at [LINK] for breaking news that ultimately ends up in the weekly Energy Tidbits memo that doesn't get posted until Sunday noon MT.
7. For new readers to our Energy Tidbits and our blogs, you will need to sign up at our blog sign up to receive future Energy Tidbits memos. The sign up is available at [LINK].

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