

Energy Tidbits

China's Model Predicts Covid Cases Peak ~65 Million/Week in Late June, Reminds Model Calculations "Might Not Be Accurate"

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“

You need a mix of all energy sources and people need to realise that you need oil, gas and renewables. People talk about renewables as it's a fix-all. If you look at renewables you can generate electricity from wind and solar but you can't make plastics or anything manufacturing sort products. So saying renewables just generating electricity does not solve the problem, you need a proper energy mix and it can't be driven by politics and politicians wanting to get in the seat to say this is the solution.”

HE Saad Sherida Al-Kaabi, Minister of State for Energy Affairs, State of Qatar; President & CEO, QatarEnergy

GULF TIMES

“

Regarding the gas development and the future for the supply and demand, there is going to be a big shortage in the gas predominantly due to the energy transition push that is really aggressive without studying it properly because if you look at economic stability and environment sustainability, they're not mutually exclusive. You need to have both. And if you push some countries into doing that, that doesn't help humanity in general.”

GULF TIMES

“

I'm thrilled that finally G7 have said that we need more LNG to be supplied to the world. We've been saying this for the last decade. We're producing 77 million tons per annum of LNG today and we're going to go to 126 million tons in Qatar and we're on-track. All the contracts have been awarded to start in 2026. We have about 18 million tons that will be coming from our project in the US. SO we're adding 65 million tons to the worlds needs when people said we didn't need it I'm happy that G7 said we need more.”

Highlights for the month

<ul style="list-style-type: none"> Indigenous crude oil and condensate production during April 2023 was registered as 2.4 MMT. OIL registered a production of 0.3 MMT, ONGC registered a production of 1.6 MMT whereas PSC registered production of 0.5 MMT during April 2023.
<ul style="list-style-type: none"> Total Crude oil processed during April 2023 was 21.45 MMT. Where PSU/JV Refiners processed 14.42 MMT and PVT Refiners Processed 7.03 MMT of Crude Oil. Total Indigenous Crude Oil processed was 1.97 MMT and total Imported Crude oil processed was 19.48 by all Indian Refineries (PSU+JV+PVT).
<ul style="list-style-type: none"> Crude oil imports were down by 8.3% during April 2023 as compared to the corresponding period of the previous year. The net import bill for Oil & Gas was \$10.4 billion in April 2023 compared to \$15.3 billion in April 2022. In this the crude oil imports constitutes \$10.8 billion, LNG imports \$1.4 billion and the exports were \$3.3 billion during April 2023.
<ul style="list-style-type: none"> The price of Brent Crude averaged \$84.94/bbl during April 2023 as against \$78.56/bbl during March 2023. The Indian basket crude price averaged \$83.76/bbl during April 2023 as against \$78.54/bbl during March 2023.
<ul style="list-style-type: none"> Production of petroleum products was 22.5 MMT during April 2023, out of which 22.2 MMT was from Refinery production & 0.3 MMT was from Fractionator. Out of total POL production, HSD has a share of 42.1 %, MS 16.1 %, Naphtha 6.1 %, ATF 6.0 %, Pet Coke 5.2, % LPG 4.9 %, the major products and rest is shared by Bitumen, FO/LSHS, LDO, Lubes & others.
<p>POL products imports decreased by 29.7% during April 2023 as compared to the corresponding period of the previous year.</p> <ul style="list-style-type: none"> Decrease in POL products imports during April 2023 were mainly due to decrease in imports of liquefied petroleum gas (LPG), fuel oil and petcoke etc.

	<ul style="list-style-type: none"> Exports of POL products recovered to 80.3% in April 23 compared to the corresponding period of the previous year. Decrease in POL products exports during April 2023 were mainly due to decrease in exports of high speed diesel (HSD) and motor spirit (MS) etc.
	<ul style="list-style-type: none"> The consumption of petroleum products during April 2023 with a volume of 18.41 MMT has been reported in line with the historical volume of 18.46 MMT during the same period of the previous year. On the growth side, growth was led by 8.6% growth in HSD, 18.5% in ATF, 11.3% in Naptha & 2.8% in MS consumption besides FO/LSHS.
	<ul style="list-style-type: none"> Ethanol blending with Petrol was 11.8% during April 2023 and cumulative ethanol blending during December 2022- April 2023 was 11.6%.
	<ul style="list-style-type: none"> Total Natural Gas Consumption (including internal consumption) for the month of April 2023 was 4884 MMSCM which was 1.2% higher than the corresponding month of the previous year.
	<ul style="list-style-type: none"> Gross production of natural gas for the month of April 2023 (P) was 2745 MMSCM which has recovered to 97.1% to the corresponding month of the previous year.
	<ul style="list-style-type: none"> LNG import for the month of April 2023 (P) was 2213 MMSCM which was 6.5% higher than the corresponding month of the previous year.

2. Crude oil, LNG and petroleum products at a glance

Details		Unit/ Base	2019-20	2020-21	April-Mar		April	
					2021-22 (P)	2022-23 (P)	2022-23 (P)	2023-24 (P)
1	Crude oil production in India [#]	MMT	32.2	30.5	29.7	29.2	2.5	2.4
2	Consumption of petroleum products*	MMT	214.1	194.3	201.7	222.3	18.5	18.4
3	Production of petroleum products	MMT	262.9	233.5	254.3	266.5	22.8	22.5
4	Gross natural gas production	MMSCM	31,184	28,672	34,024	34,450	2,827	2,745
5	Natural gas consumption	MMSCM	64,144	60,981	64,159	60,311	4,826	4,884
6	Imports & exports:							
	Crude oil imports	MMT	227.0	196.5	212.4	232.6	21.6	19.8
		\$ Billion	101.4	62.2	120.7	157.5	16.8	10.8
	Petroleum products (POL) imports*	MMT	43.8	43.2	39.0	43.8	4.2	2.9
		\$ Billion	17.7	14.8	23.7	26.7	3.0	1.5
	Gross petroleum imports (Crude + POL)	MMT	270.7	239.7	251.4	276.4	25.8	22.8
		\$ Billion	119.1	77.0	144.3	184.2	19.8	12.3
	Petroleum products (POL) export	MMT	65.7	56.8	62.8	61.0	5.4	4.4
		\$ Billion	35.8	21.4	44.4	57.3	5.8	3.3
	LNG imports*	MMSCM	33,887	33,198	31,028	26,647	2,078	2,213
		\$ Billion	9.5	7.9	13.5	17.3	1.3	1.4
	Net oil & gas imports	\$ Billion	92.7	63.5	113.4	144.1	15.3	10.4
7	Petroleum imports as percentage of India's gross imports (in value terms)	%	25.1	19.5	23.5	25.8	34.1	24.6
8	Petroleum exports as percentage of India's gross exports (in value terms)	%	11.4	7.3	10.5	12.8	14.6	9.6
9	Import dependency of crude oil (on POL consumption basis)	%	85.0	84.4	85.5	87.3	86.2	88.5

#Includes condensate; *Private direct imports are prorated for the period March'23 to Apr'23 for POL. LNG Imports figures from DGCIS are prorated for Mar-Apr 2023. Total may not tally due to rounding off.

3. Indigenous crude oil production (Million Metric Tonnes)								
Details	2019-20	2020-21	April-Mar			April		
			2021-22	2022-23 Target*	2022-23 (P)	2022-23	2023-24 Target*	2023-24 (P)
ONGC	19.2	19.1	18.5	21.1	18.4	1.6	1.6	1.5
Oil India Limited (OIL)	3.1	2.9	3.0	3.4	3.2	0.3	0.3	0.3
Private / Joint Ventures (JVs)	8.2	7.1	7.0	7.4	6.2	0.5	0.5	0.5
Total Crude Oil	30.5	29.1	28.4	31.9	27.8	2.4	2.4	2.3
ONGC condensate	1.4	1.1	0.9	0.0	1.0	0.1	0.0	0.1
PSC condensate	0.3	0.3	0.30	0.0	0.31	0.02	0.0	0.04
Total condensate	1.6	1.4	1.24	0.0	1.4	0.1	0.0	0.1
Total (Crude + Condensate) (MMT)	32.2	30.5	29.7	31.9	29.2	2.5	2.4	2.4
Total (Crude + Condensate) (Million Bbl/Day)	0.64	0.61	0.60	0.64	0.59	0.60	0.59	0.58

*Provisional targets inclusive of condensate.

4. Domestic and overseas oil & gas production (by Indian Companies)							
Details	2019-20	2020-21	April-Mar		April		
			2021-22	2022-23 (P)	2022-23 (P)	2023-24 (P)	
Total domestic production (MMTOE)	63.4	59.2	63.7	63.6	5.3	5.1	
Overseas production (MMTOE)	24.5	21.9	21.8	19.5	1.7	1.7	

Source: ONGC Videsh, GAIL, OIL , IOCL, HPCL & BPRL

5. High Sulphur (HS) & Low Sulphur (LS) crude oil processing (MMT)							
Details	2019-20	2020-21	April-Mar		April		
			2021-22	2022-23 (P)	2022-23 (P)	2023-24 (P)	
1 High Sulphur crude	192.4	161.4	185.0	197.9	16.5	16.8	
2 Low Sulphur crude	62.0	60.3	56.7	57.4	5.1	4.7	
Total crude processed (MMT)	254.4	221.8	241.7	255.2	21.6	21.5	
Total crude processed (Million Bbl/Day)	5.09	4.45	4.85	5.13	5.27	5.24	
Percentage share of HS crude in total crude oil processing	75.6%	72.8%	76.6%	77.5%	76.6%	78.3%	

6. Quantity and value of crude oil imports			
Year	Quantity (MMT)	\$ Million	Rs. Crore
2021-22	212.4	120,675	9,01,262
2022-23 (P)	232.6	157,507	12,60,173
April 2023-24(P)	19.8	10,783	88,387

7. Self-sufficiency in petroleum products (Million Metric Tonnes)							
Particulars		2019-20	2020-21	April-Mar		April	
				2021-22 (P)	2022-23 (P)	2022-23 (P)	2023-24 (P)
1	Indigenous crude oil processing	29.3	28.0	27.0	26.5	2.4	2.0
2	Products from indigenous crude (93.3% of crude oil processed)	27.3	26.1	25.2	24.7	2.3	1.8
3	Products from fractionators (Including LPG and Gas)	4.8	4.2	4.1	3.5	0.3	0.3
4	Total production from indigenous crude & condensate (2 + 3)	32.1	30.3	29.3	28.2	2.5	2.1
5	Total domestic consumption	214.1	194.3	201.7	222.3	18.5	18.4
% Self-sufficiency (4 / 5)		15.0%	15.6%	14.5%	12.7%	13.8%	11.5%

8. Refineries: Installed capacity and crude oil processing (MMTPA / MMT)										
Sl. no.	Refinery	Installed capacity (01.04.2023) MMTPA	Crude oil processing (MMT)							
			2019-20	2020-21	April-Mar			April		
					2021-22	2022-23 (Target)	2022-23 (p)	2022-23	2023-24 (Target)	2023-24 (p)
1	Barauni (1964)	6.0	6.5	5.5	5.6	6.5	6.8	0.6	0.5	0.5
2	Koyali (1965)	13.7	13.1	11.6	13.5	14.3	15.6	1.3	1.1	1.1
3	Haldia (1975)	8.0	6.5	6.8	7.3	8.2	8.5	0.7	0.7	0.7
4	Mathura (1982)	8.0	8.9	8.9	9.1	9.4	9.6	0.8	0.8	0.8
5	Panipat (1998)	15.0	15.0	13.2	14.8	14.9	13.8	1.2	1.3	1.3
6	Guwahati (1962)	1.0	0.9	0.8	0.73	1.0	1.1	0.09	0.1	0.1
7	Digboi (1901)	0.65	0.7	0.6	0.7	0.6	0.7	0.1	0.1	0.0
8	Bongaigaon(1979)	2.70	2.0	2.5	2.6	2.7	2.8	0.2	0.2	0.2
9	Paradip (2016)	15.0	15.8	12.5	13.2	14.0	13.6	1.3	1.3	1.2
	IOCL-TOTAL	70.1	69.4	62.4	67.7	71.6	72.4	6.2	6.1	6.0
10	Manali (1969)	10.5	10.2	8.2	9.0	10.7	11.3	0.9	0.9	0.9
11	CBR (1993)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	CPCL-TOTAL	10.5	10.2	8.2	9.0	10.7	11.3	0.9	0.9	0.9
12	Mumbai (1955)	12.0	15.0	12.9	14.4	14.0	14.5	1.3	1.3	1.3
13	Kochi (1966)	15.5	16.5	13.3	15.4	15.5	16.0	1.3	1.4	1.4
14	Bina (2011)	7.8	7.9	6.2	7.4	7.8	7.8	0.7	0.6	0.6
	BPCL-TOTAL	35.3	39.4	32.4	37.2	37.2	38.4	3.3	3.2	3.2
15	Numaligarh (1999)	3.0	2.4	2.7	2.6	2.9	3.1	0.3	0.0	0.0

Sl. no.	Refinery	Installed capacity (1.04.2023) (MMTPA)	Crude oil processing (MMT)							
			2019-20	2020-21	April-Mar			April		
					2021-22	2022-23 (Target)	2022-23 (P)	2022-23	2023-24 (Target)	2023-24 (P)
16	Tatipaka (2001)	0.066	0.087	0.081	0.075	0.063	0.073	0.006	0.005	0.007
17	MRPL-Mangalore (1996)	15.0	14.0	11.5	14.9	17.0	17.1	1.5	1.3	1.5
	ONGC-TOTAL	15.1	14.0	11.6	14.9	17.1	17.2	1.5	1.4	1.5
18	Mumbai (1954)	9.5	8.1	7.4	5.6	8.5	9.8	0.7	0.8	0.8
19	Visakh (1957)	8.3	9.1	9.1	8.4	9.3	9.3	0.8	0.9	0.8
20	HMEL-Bathinda (2012)	11.3	12.2	10.1	13.0	11.5	12.7	1.0	1.0	1.1
	HPCL- TOTAL	29.1	29.4	26.5	27.0	29.3	31.8	2.6	2.7	2.8
21	RIL-Jamnagar (DTA) (1999)	33.0	33.0	34.1	34.8	34.8	34.4	3.0	3.0	2.8
22	RIL-Jamnagar (SEZ) (2008)	35.2	35.9	26.8	28.3	28.3	27.9	2.1	2.1	2.5
23	NEL-Vadinar (2006)	20.0	20.6	17.1	20.2	20.2	18.7	1.7	1.7	1.7
All India (MMT)		251.2	254.4	221.8	241.7	252.0	255.2	21.6	21.1	21.5
All India (Million Bbl/Day)		5.05	5.11	4.45	4.85	5.06	5.13	5.27	5.16	5.24

Note: Provisional Targets; Some sub-totals/ totals may not add up due to rounding off at individual levels.

9. Major crude oil and product pipeline network (as on 01.05.2023)										
Details		ONGC	OIL	Cairn	HMEL	IOCL	BPCL	HPCL	Others*	Total
Crude Oil	Length (KM)	1,284	1,193	688	1,017	5,301	937			10,420
	Cap (MMTPA)	60.6	9.0	10.7	11.3	48.6	7.8			147.9
Products	Length (KM)		654			11,731	2,596	5,121	2,386	22,488
	Cap (MMTPA)		1.7			70.6	22.6	36.3	9.4	140.6

*Others include GAIL and Petronet India. HPCL and BPCL lubes pipeline included in products pipeline data

11. Production and consumption of petroleum products (Million Metric Tonnes)												
Products	2019-20		2020-21		2021-22 (P)		Apr-Mar 2023 (P)		Apr 2022		Apr 2023 (P)	
	Prod	Cons	Prod	Cons	Prod	Cons	Prod	Cons	Prod	Cons	Prod	Cons
LPG	12.8	26.3	12.1	27.6	12.2	28.3	12.8	28.5	1.1	2.2	1.1	2.2
MS	38.6	30.0	35.8	28.0	40.2	30.8	42.8	35.0	3.6	2.8	3.6	2.9
NAPHTHA	20.6	14.3	19.4	14.1	20.0	13.2	17.0	12.2	1.6	1.0	1.4	1.1
ATF	15.2	8.0	7.1	3.7	10.3	5.0	15.0	7.4	1.0	0.6	1.3	0.7
SKO	3.2	2.4	2.4	1.8	1.9	1.5	0.9	0.5	0.1	0.1	0.0	0.0
HSD	111.1	82.6	100.4	72.7	107.2	76.7	113.8	85.9	9.8	7.2	9.5	7.8
LDO	0.6	0.6	0.7	0.9	0.8	1.0	0.6	0.7	0.1	0.1	0.0	0.1
LUBES	0.9	3.8	1.1	4.1	1.2	4.5	1.4	3.8	0.1	0.3	0.1	0.3
FO/LSHS	9.3	6.3	7.4	5.6	8.9	6.3	10.3	6.9	0.8	0.5	1.1	0.6
BITUMEN	4.9	6.7	4.9	7.5	5.1	7.8	4.9	7.8	0.5	0.8	0.5	0.7
PET COKE	14.6	21.7	12.0	15.6	15.5	14.3	15.4	17.9	1.3	1.7	1.2	1.3
OTHERS	31.0	11.4	30.2	12.8	30.9	12.3	31.4	15.7	2.7	1.3	2.6	0.8
ALL INDIA	262.9	214.1	233.5	194.3	254.3	201.7	266.5	222.3	22.8	18.5	22.5	18.4
Growth (%)	0.2%	0.4%	-11.2%	-9.3%	8.9%	3.8%	4.8%	10.2%	9.1%	13.1%	-1.4%	-0.2%

Note: Prod - Production; Cons - Consumption

15. LPG consumption (Thousand Metric Tonne)								
LPG category	2019-20	2020-21	April-Mar			April		
			2021-22	2022-23 (P)	Growth (%)	2022-23	2023-24 (P)	Growth (%)
1. PSU Sales :								
LPG-Packed Domestic	23,076.0	25,128.1	25,501.6	25,381.5	-0.5%	1,954.9	1,938.0	-0.9%
LPG-Packed Non-Domestic	2,614.4	1,886.0	2,238.8	2,606.0	16.4%	162.4	191.4	17.9%
LPG-Bulk	263.5	361.9	390.9	408.9	4.6%	30.8	17.5	-43.4%
Auto LPG	171.9	118.4	122.0	106.7	-12.5%	9.4	7.1	-24.0%
Sub-Total (PSU Sales)	26,125.7	27,494.3	28,253.3	28,503.1	0.9%	2,157.5	2,154.0	-0.2%
2. Direct Private Imports*	204.0	64.2	0.1	0.1	0.2%	0.00	0.01	-
Total (1+2)	26,329.8	27,558.4	28,253.4	28,503.2	0.9%	2,157.5	2,154.0	-0.2%

*Jan'23 -Mar'23 DGCIS data is prorated

16. LPG marketing at a glance														
Particulars (As on 1st of April)	Unit	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	1.05.23 (P)
LPG Active Domestic Customers	(Lakh)				1486	1663	1988	2243	2654	2787	2895	3053	3140	3143
	Growth					11.9%	19.6%	12.8%	18.3%	5.0%	3.9%	5.5%	2.9%	2.3%
LPG Coverage (Estimated)	(Percent)				56.2	61.9	72.8	80.9	94.3	97.5	99.8	-	-	-
	Growth					10.1%	17.6%	11.1%	16.5%	3.4%	2.3%	-	-	-
PMUY Beneficiaries	(Lakh)						200	356	719	802	800.4	899.0	958.6	958.6
	Growth							77.7%	101.9%	11.5%	-0.2%	12.2%	6.6%	4.1%
LPG Distributors	(No.)	11489	12610	13896	15930	17916	18786	20146	23737	24670	25083	25269	25386	25384
	Growth	9.0%	9.8%	10.2%	14.6%	12.5%	4.9%	7.2%	17.8%	3.9%	1.7%	0.7%	0.5%	0.4%
Auto LPG Dispensing Stations	(No.)	652	667	678	681	676	675	672	661	657	651	601	526	525
	Growth	7.9%	2.3%	1.6%	0.4%	-0.7%	-0.1%	-0.4%	-1.6%	-0.6%	-0.9%	-8.5%	-12.5%	-12.6%
Bottling Plants	(No.)	184	185	187	187	188	189	190	192	196	200	202	208	208
	Growth	0.5%	0.5%	1.1%	0.0%	0.5%	0.5%	0.5%	1.1%	2.1%	2.0%	1.0%	4.5%	4.5%

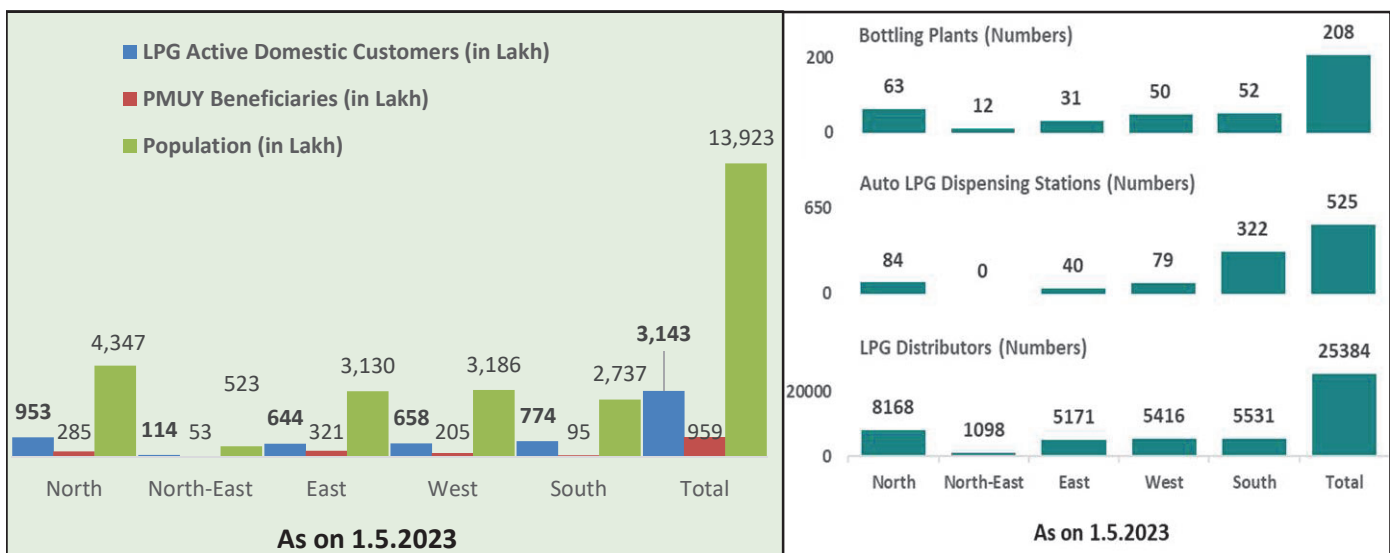
Source: PSU OMCs (IOCL, BPCL and HPCL)

1. Growth rates as on 01.05.2023 are with respect to figs as on 01.05.2022. Growth rates as on 1 April of any year are with respect to figs as on 1 April of previous year.

2. The LPG coverage is calculated by PSU OMCs based upon the active LPG domestic connections and the estimated number of households. The number of households has been projected by PSU OMCs based on 2011 census data. Factors like increasing nuclearization of families, migration of individuals/ families due to urbanization and reduction in average size of households etc. impact the growth of number of households. Due to these factors, the estimated no. of households through projection of 2011 census data may slightly differ from the actual no. of households in a State/UT. Further, this methodology does not include PNG (domestic) connections.

17-Region-wise data on LPG marketing (As on 01.05.2023)						
Particulars	North	North-East	East	West	South	Total
LPG Active Domestic Customers (in Lakh)	953.1	114.0	644.4	657.7	774.0	3143.2
Population^ (in Lakh)	4347.5	523.0	3130.2	3185.9	2736.7	13923.3
PMUY Beneficiaries (in Lakh)	285.2	53.0	320.8	204.7	94.8	958.6
LPG Distributors (Numbers)	8168	1098	5171	5416	5531	25384
Auto LPG Dispensing Stations (Numbers)	84	0	40	79	322	525
Bottling Plants* (Numbers)	63	12	31	50	52	208

*Includes Numaligarh BP, Duliajan BP and CPCL BP. ^Population as on 1st July 2022 taken from RGI POPULATION PROJECTIONS 2011 – 2036





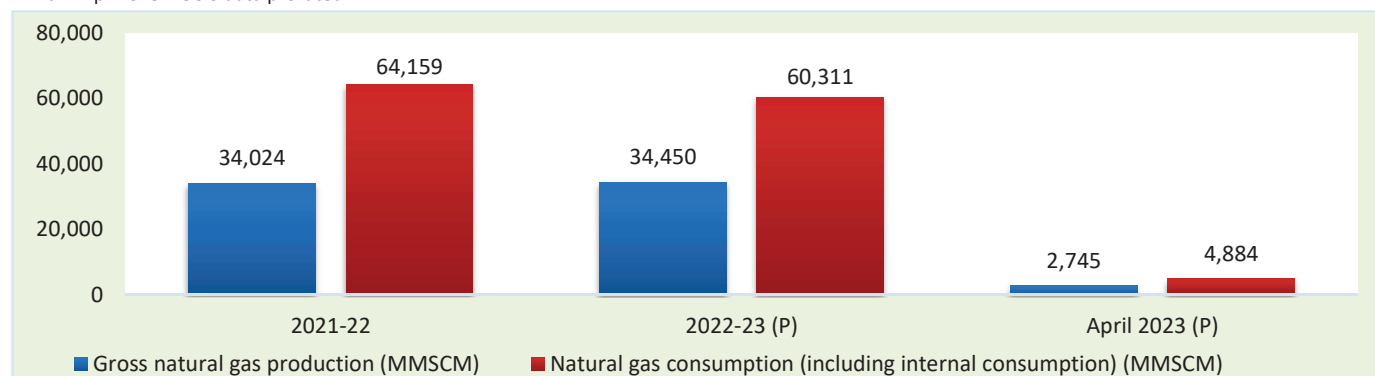
PART-E

Natural Gas

18. Natural gas at a glance

(MMSCM)								
Details	2019-20	2020-21	April-Mar			April		
			2021-22 (P)	2022-23 (Target)	2022-23 (P)	2022-23 (P)	2022-23 (Target)	2023-24 (P)
(a) Gross production	31,184	28,672	34,024	36,782	34,450	2,827	2,868	2,745
- ONGC	23,746	21,872	20,629	21,568	19,969	1,708	1,721	1,607
- Oil India Limited (OIL)	2,668	2,480	2,893	3,245	3,041	245	245	237
- Private / Joint Ventures (JVs)	4,770	4,321	10,502	11,968	11,440	874	903	901
(b) Net production (excluding flare gas and loss)	30,257	27,784	33,131		33,664	2,748		2,671
(c) LNG import [#]	33,887	33,198	31,028		26,647	2,078		2,213
(d) Total consumption including internal consumption (b+c)	64,144	60,981	64,159		60,311	4,826		4,884
(e) Total consumption (in BCM)	64.1	61.0	64.2		60.3	4.8		4.9
(f) Import dependency based on consumption (%), {c/d*100}	52.8	54.4	48.4		44.2	43.1		45.3

Mar - Apr 2023 DGCIS data prorated.



19. Coal Bed Methane (CBM) gas development in India		
Prognosticated CBM resources	91.8	TCF
Established CBM resources	10.4	TCF
CBM Resources (33 Blocks)	62.8	TCF
Total available coal bearing areas (India)	32760	Sq. KM
Total available coal bearing areas with MoPNG/DGH	17652	Sq. KM
Area awarded	20460	Sq. KM
Blocks awarded*	36	Nos.
Exploration initiated (Area considered if any boreholes were drilled in the awarded block)	10670***	Sq. KM
Production of CBM gas	April-Mar 2023 (P)	673.45
Production of CBM gas	Apr 2023 (P)	52.96
		MMSCM

*ST CBM Block awarded & relinquished twice- in CBM Round II and Round IV -Area considered if any boreholes were drilled in the awarded block. **MoPNG awarded 04 new CBM Blocks (Area 3862 sq. km) under Special CBM Bid Round 2021 in September 2022. ***Area considered if any boreholes were drilled in the awarded block.

19a. Status of Compressed Bio Gas (CBG) projects under SATAT (as on 01.05.2023) (Provisional)							
Particulars	Units	IOCL	HPCL	BPCL	GAIL	IGL	Total
LOIs issued	No. of plants	3267	457	230	304	42	4300
Expected CBG production against LOI issued	Tons per day	24540	2506	956	1672	201	29875
No. of CBG plants commissioned/ Sale initiated	No. of plants	22	5	5	9	3	41
Start of CBG sale from retail outlet(s)	Nos.	46	27*	43**	1		117
Injection/Supply of CBG in CGD network	GA Nos.	-	-	-	17#		17
Total Sale of CBG (since Sep'2019)	Tons	11676	1854*	2741**			16,271
Total Sale of CBG by GAIL under synchronization scheme	Tons				6424###		6,424

Total no. of GA where supply of CBG initiated is 17. ## Sale of CBG by GAIL includes sales through its own channels as well as through other CGDs for CBG sourced under synchronization scheme from OMCs & IGL's LOI holders. *2 HPCL Retail Outlets sourcing CBG from HPCL LOI holder plants, 25 HPCL Retail

Outlets sourcing CBG from other than HPCL LOI holder plants. ** BPCL initiated CBG sales from 43 ROS. Out of 43 ROS, for one RO BPCL is sourcing CBG from its own LOI holder in other ROS CBG is being sourced from other OMC's LOI. # Total No. of CBG and Bio gas plants commissioned is 8.

20. Common Carrier Natural Gas pipeline network as on 31.12.2022													
Nature of pipeline	GAIL	GSPL	PII	IOCL	AGCL	RGPL	GGI	DFPCL	ONGC	GIGI	GITI	Others*	Total
Operational	Length	9,582	2,695	1,479	143	107	304	73	42	24			14,449
	Capacity	167.2	43.0	85.0	20.0	2.4	3.5	5.1	0.7	6.0			-
Partially commissioned#	Length	4,778			282					1,255	365		6,680
	Capacity												-
Total operational length	14,360	2,695	1,479	425	107	304	73	42	24	1,255	365	0	21,129
Under construction	Length	5,095	100		1,149					1,077	1,666	2,915	12,002
	Capacity	-	3.0										-
Total length	19,455	2,795	1,479	1,574	107	304	73	42	24	2,332	2,031	2,915	33,131

Source: PNGRB; Length in KMs ; Authorized Capacity in MMSCMD; *Others-APGDC, HEPL, IGGL, IMC, Consortium of H-Energy. Total authorized Natural Gas pipelines including Tie-in connectivity, dedicated & STPL is 35335 Kms (P)

21. Existing LNG terminals			
Location	Promoters	Capacity as on 01.05.2023	% Capacity utilisation (April-Mar 2023)
Dahej	Petronet LNG Ltd (PLL)	17.5 MMTPA	77.8
Hazira	Shell Energy India Pvt. Ltd.	5.2 MMTPA	36.6
Dabhol	Konkan LNG Limited	*5 MMTPA	39.2
Kochi	Petronet LNG Ltd (PLL)	5 MMTPA	18.6
Ennore	Indian Oil LNG Pvt Ltd	5 MMTPA	13.0
Mundra	GSPC LNG Limited	5 MMTPA	16.0
Total Capacity		42.7 MMTPA	

* To increase to 5 MMTPA with breakwater. Only HP stream of capacity of 2.9 MMTPA is commissioned

22. Status of PNG connections and CNG stations across India (Nos.), as on 31.03.2023(P)				
State/UT (State/UTs are clubbed based on the GAs authorised by PNGRB)	CNG Stations	PNG connections		
		Domestic	Commercial	Industrial
Andhra Pradesh	161	253,361	429	33
Andhra Pradesh, Karnataka & Tamil Nadu	36	170	0	5
Assam	5	49,079	1,340	441
Bihar	93	102,534	74	4
Bihar & Jharkhand	2	7,261	0	0
Bihar & Uttar Pradesh	14	0	0	0
Chandigarh (UT), Haryana, Punjab & Himachal Pradesh	25	25,540	118	24
Chhattisgarh	9	0	0	0
Dadra & Nagar Haveli (UT)	7	11,171	55	58
Daman & Diu (UT)	4	5,134	47	43
Daman and Diu & Gujarat	15	1,852	7	0
Goa	12	10,703	15	31
Gujarat	997	2,975,194	22,419	5,765
Haryana	338	318,271	827	1,670
Haryana & Himachal Pradesh	10	0	0	0
Haryana & Punjab	24	2	0	0
Himachal Pradesh	8	5,461	4	0
Jharkhand	75	111,534	5	0
Karnataka	291	386,283	523	300
Kerala	105	44,298	20	16
Kerala & Puducherry	9	361	0	0
Madhya Pradesh	221	206,697	343	441
Madhya Pradesh and Chhattisgarh	7	0	0	0
Madhya Pradesh and Rajasthan	31	320	0	0
Madhya Pradesh and Uttar Pradesh	16	0	0	2
Maharashtra	741	2,840,638	4,652	867
Maharashtra & Gujarat	60	150,004	4	17
Maharashtra and Madhya Pradesh	9	0	0	0
National Capital Territory of Delhi (UT)	480	1,438,659	3,582	1,799

State/UT (State/UTs are clubbed based on the GAs authorised by PNGRB)	CNG Stations	PNG connections		
		Domestic	Commercial	Industrial
Odisha	66	86,876	5	0
Puducherry	1	0	0	0
Puducherry & Tamil Nadu	8	175	0	0
Punjab	204	67,344	324	244
Punjab & Rajasthan	19	0	0	0
Rajasthan	247	213,830	83	1,519
Tamil Nadu	187	738	0	8
Telangana	147	193,026	77	98
Telangana and Karnataka	2	0	0	0
Tripura	18	59,131	506	62
Uttar Pradesh	797	1,367,777	2,218	2,689
Uttar Pradesh & Rajasthan	40	18,958	38	343
Uttar Pradesh and Uttrakhand	26	8,019	0	0
Uttarakhand	30	68,567	57	84
West Bengal	68	260	0	0
Total	5,665	11,029,228	37,772	16,563

Source: PNGRB

Note: 1. All the GAs where PNG connections/CNG Stations have been established are considered as Operational, 2. Under normal conditions. Operation of any particular GA commences within around one year of authorization. 3. State/UTs wherever clubbed are based on the GAs authorised by PNGRB.

23. Domestic natural gas price and gas price ceiling (GCV basis)		
Period	Domestic Natural Gas price in	Gas price ceiling in US\$/MMBTU
November 2014 - March 2015	5.05	-
April 2015 - September 2015	4.66	-
October 2015 - March 2016	3.82	-
April 2016 - September 2016	3.06	6.61
October 2016 - March 2017	2.5	5.3
April 2017 - September 2017	2.48	5.56
October 2017 - March 2018	2.89	6.3
April 2018 - September 2018	3.06	6.78
October 2018 - March 2019	3.36	7.67
April 2019 - September 2019	3.69	9.32
October 2019 - March 2020	3.23	8.43
April 2020 - September 2020	2.39	5.61
October 2020 - March 2021	1.79	4.06
April 2021 - September 2021	1.79	3.62
October 2021 - March 2022	2.9	6.13
April 2022 - September 2022	6.1	9.92
October 2022 - March 2023	8.57	12.46
1 April 2023 - 7 April 2023	9.16	12.12

Period	Domestic Gas calculated price in US\$/MMBTU	Domestic Gas ceiling price for ONGC/OIL in US\$/MMBTU	Period	HP-HT Gas price ceiling in US\$/MMBTU
8 April 2023 - 30 April 2023	7.92	6.50	April 2023 - September 2023	12.12
1 May 2023 - 31 May 2023	8.27	6.50		

Natural Gas prices are on GCV basis

24. CNG/PNG prices				
City	CNG (Rs/Kg)	PNG (Rs/SCM)	Source	
Delhi	73.59	48.59	IGL website (18.05.2023)	
Mumbai	79.00	49.00	MGL website (18.05.2023)	
Indian Natural Gas Spot Price for Physical Delivery				
IGX Price Index Month	Avg. Price		Volume (MMSCM)	Source
	INR/MMBtu	\$/MMBtu		
Apr 2022	1075	13.11	19.92	As per IGX website: www.igxindia.com

*Prices are weighted average prices | \$1=INR 82.02 | 1 MMBtu=25.2 SCM (Data Excluding Ceiling Price Gas)

Warren Buffet & Charlie Munger on shale

SAF Group created transcript of comments by Warren Buffett, Charlie Munger, Greg Abel, and Ajit Jain in the Q&A of the 2023 Berkshire Hathaway annual meeting from CNBC 5hr 16 min video.

<https://www.cnbc.com/video/2023/05/06/watch-warren-buffett-and-charlie-munger-preside-over-full-2023-berkshire-hathaway-annual-meeting.html?&qsearchterm=berkshire>

Items in "italics" are SAF Group created transcript

3 hr 51:30 min mark, asked on their investments in Occidental and Chevron in light of some views that Permian oil production may have peaked.

Buffett: *"it's really interesting about oil and Charlie knows way more about oil than I do. When did you buy that royalty near Bakersfield or wherever it is. That was before I met you?"* Munger "no, it wasn't before, Yes it was, it was just before. And that goddam royalty is still paying me \$70,000 a year." Buffett *"what'd you pay for it"*. Munger *"a thousand dollars"*. Buffett *"now that's the opposite of the Permian. My dad bought a thousand or \$1,500 worth of royalties, before he died in 1964. He left them to my mother, my mother left them to her two daughters. My older sister died and my younger sister is here today and she gets these checks every month. She knows about all these different fields and what they're producing. And that's the reality of half of the oil production, or something around that in the US. And the other half is shale and, you know if you've gone to the movies and ever watched oil. You never watch the things pumping oil out in California, you'd see these gushers of oil. Well, in the Permian, this should sink in on you, in the first day, the first day when you bring in a well, it may be 12,000 barrels, it may be 15,000 barrels. It's dangerous. Occidental had one come in at 19,000 barrels or something like that. One day. And in a year, a year and a half, it becomes practically nothing. It's a different business, in effect. In the US, it's interesting, we use, what do we use maybe 11 and a fraction, we produce at 11 and a fraction million barrels of oil equivalent a day. But if shale stopped, it would drop to 6 million very fast. Well, just imagine taking 5 million barrels a day out of the production in the world. And then we're also taking down our Strategic Petroleum Reserve. Strategic Petroleum Reserve is the ultimate oil field, you don't have to drill, we've got it. And it was supposed to be Strategic, but it gets involved in politics. The oil business, different kinds of business basically. We like Occidental's position in the Permian. We wouldn't like that position if, well it got to minus one day, minus \$30 a barrel, that was crazy of course. But if oil sells at x, you do very well, if sells half of x, your costs are the same, it doesn't change the production, it doesn't work as well, but it also brings down the oil production of the US very fast. We don't know what oil prices will be, but we do very much like the Occidental position they have and that's why we financed them a few years ago when it looked like a terrible mistake. she [Occidental CEO Vicki Holub] knows what happens beneath the surface. I know the math of it. I wouldn't have the faintest idea to do if I was in an oil field. I can dig two feet down in my backyard and that's my understanding of subsoil in the world. I can't picture the field that Charlie has been collecting that monthly check from for 50+ years, 60 years roughly. Or my sister's getting at various fields where they just keep pumping and pumping and pumping. We in the US are lucky to have the ability to produce the kind of oil we've got from shale, but it is not a long-term source like you might think by watching movies about oil, or the sort. Charlie do you have anything to add".* Munger *"Yeah, it really dies fast, those shale wells. If you like quick death in your oil wells, we have them for you"*.

Buffett *"Occidental, they're doing a lot of good things."* Munger *"Yeah, they drill a lot of new wells and they're doing it at a profit but it's different kind of oil"*. Buffett *"it's just different. And that's true of almost half the oil produced in the US."* Munger *"there's a lot oil down there that nobody knows how to produce. And they've been working at it for like 50 years, but they worked at the existing shale production for about 50 years before they figured it out. And it was weirdly complicated when they were finally able to do it. There is only one type of sand that works"*. Buffett *"can you imagine a horizontal pipe maybe a mile and a half, it's just so different than what you think about"*. Munger *"it goes laterally for three miles, two miles down. How the hell do you drill two or three miles laterally when you are already two or three miles under the earth. They've mastered a lot of very tricky technology to get the oil out of these wells at all."* Buffett *"we love the position with Occidental, we love having Vicki run it."* Munger *"there is a lot more oil down there if anybody can figure out another magic trick. That's all we need is another magic trick."* Buffett *"Occidental has some other things too. The price of oil is still is incredibly important in terms of the economics of short-lived oil, no question about that. Incidentally, there is speculation about us buying control, we're not going to buy control. We don't want to run it. We've got the right management running it. We wouldn't know what to do with it."*

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

Production figures April 2023

23/05/2023 Preliminary production figures for April 2023 show an average daily production of 2 035 000 barrels of oil, NGL and condensate.

Total gas sales were 10.2 billion Sm³ (GSm³), which is 0.7 (GSm³) less than the previous month.

Average daily liquids production in April was: 1 808 000 barrels of oil, 205 000 barrels of NGL and 23 000 barrels of condensate.

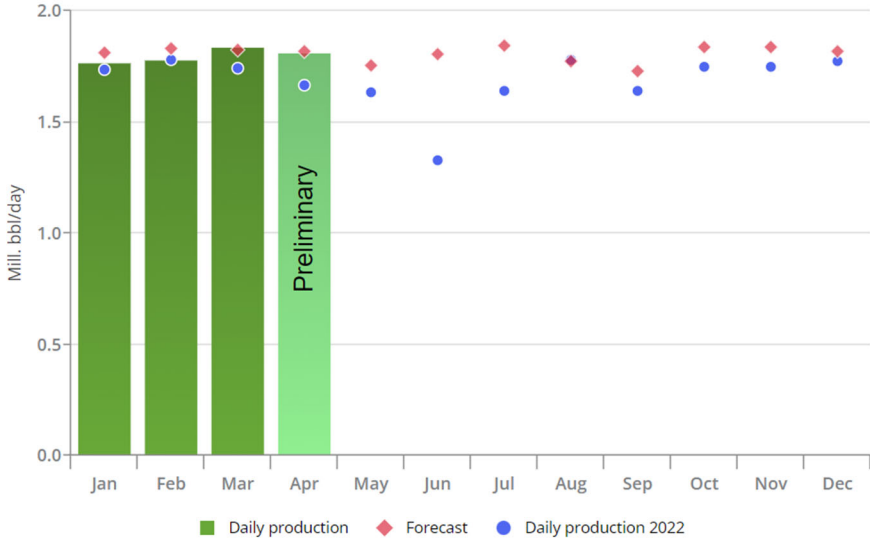
Oil production in April is 0.5 percent lower than the NPD's forecast and 1.3 percent lower than the forecast so far this year.

Production figures April 2023

		Oil mill bbl/day	Sum liquid mill bbl/day	Gas MSm ³ /day	Total MSm ³ o.e./day
Production	April 2023	1.808	2.035	340.2	0.664
Forecast for	April 2023	1.816	2.027	334.8	0.657
Deviation from forecast		-0.008	0.008	5.5	0.007
Deviation from forecast in %		-0.4 %	0.4 %	1.6 %	1.1 %
Production	March 2023	1.834	2.057	351.9	0.679
Deviation from	March 2023	-0.026	-0.022	-11.7	-0.015
Deviation in % from	March 2023	-1.4 %	-1.1 %	-3.3 %	-2.2 %
Production	April 2022	1.663	1.858	329.2	0.625
Deviation from	April 2022	0.145	0.177	11.1	0.039
Deviation in % from	April 2022	8.7 %	9.5 %	3.4 %	6.2 %

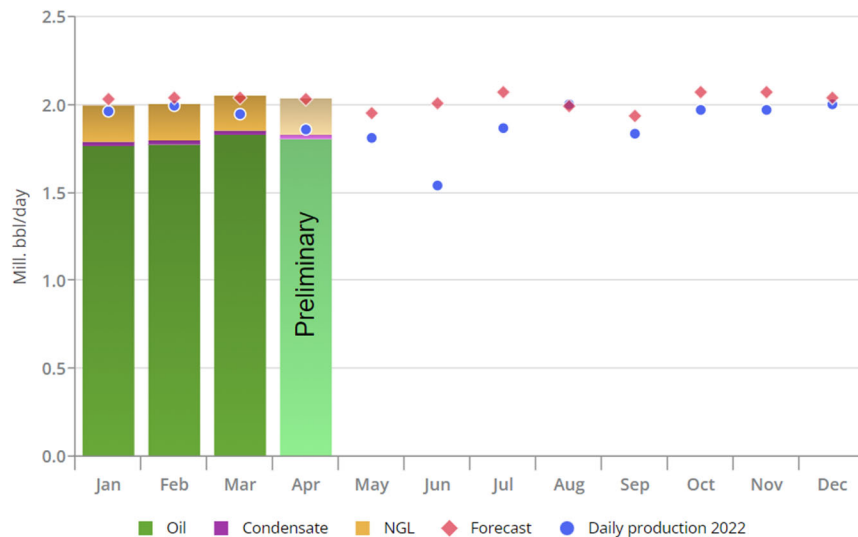
Oil production April 2023

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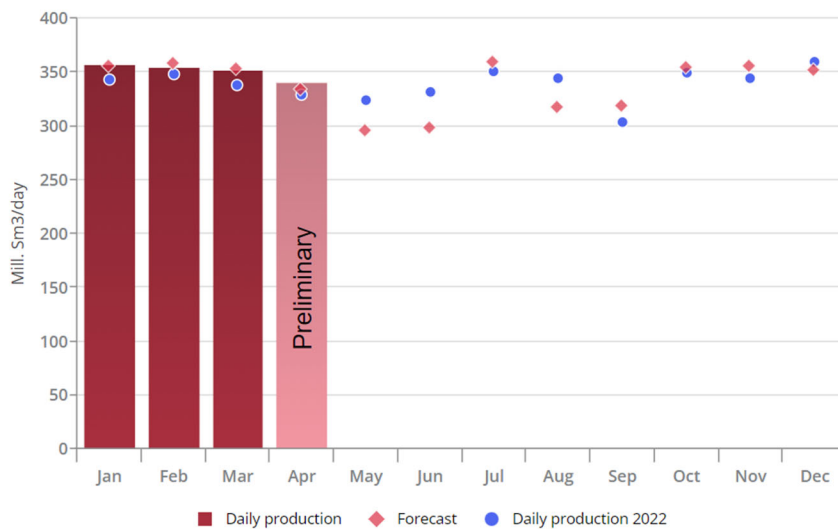
Liquid production April 2023

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Gas production April 2023

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The total petroleum production so far in 2023 is about 80,7 million Sm³ oil equivalents (MSm³ o.e.), broken down as follows: about 34.3 MSm³ o.e. of oil, about 4.3 MSm³ o.e. of NGL and condensate and about 42.1 MSm³ o.e. of gas for sale.

The total volume is 2.9 MSm³ o.e. higher than in 2022.

Updated: 23/05/2023

<https://iz-ru.translate.google.com/1518086/petr-marchenko-valerii-voronov-irina-tsyruleva/u-nas-net-zadachi-zavysheniia-tcen-na-neft-est-zadacha-balansirovki? x tr sl=auto& x tr tl=EN& x tr hl=en-US>

May 25, 2023, 08:00

“We do not have the task of inflating oil prices - there is the task of balancing”

Deputy Prime Minister Alexander Novak - on the prospects for the OPEC + meeting in June, the readiness of the Russian energy sector for sanctions and the level of gasification of the country

Petr Marchenko

Valery Voronov

Irina Tsyruleva

:

Photo: Izvestiya / Pavel Volkov



The price of Brent crude oil may rise above \$80 amid rising energy consumption in the summer. Such a forecast in an interview with Izvestia was given by Deputy Prime Minister Alexander Novak . He also noted that following the June 4 meeting, the OPEC+ countries are unlikely to significantly change the agreements , the alliance will continue to balance supply and demand in the market. According to him, the Russian energy industry turned out to be ready for Western sanctions , key projects continue to be implemented. Among them is the gasification of the country, which in 2023 will reach the level of 74-75%.

“Almost 90% in Russia are clean energy sources”

- If we talk about the global energy market, how do you assess the energy balance today, are there any distortions or is everything balanced enough?
- As for the energy balance, we see that its structure is constantly changing. It depends primarily on the changes that are taking place in science and technology . Let me remind you that even at the beginning of the 19th century, the basis of the energy balance was coal - approximately 95-99%. Then, when oil began to appear, at the end of the 19th - beginning of the 20th century, it began to replace coal very sharply and by about the middle of the century came to the fore in the structure of consumption. Then gas appeared, then nuclear energy, and it also occupied its niche. Today, the fourth technological energy transition is taking place, renewable energy sources (RES) have begun to occupy their niche in the energy balance, displacing traditional ones from

it. And every year we see that the commissioning of solar energy and wind energy is becoming more and more widespread.

In 2022, 80% of the total number of energy facilities commissioned were based on renewable sources - solar, wind, nuclear and hydropower. Today, the share of hydrocarbons is somewhere around 81% . In 20 years, according to analysts, the decline will be approximately 65-70%. The main share, of course, will be in hydrocarbons, but renewable energy sources will occupy their niche for the most part .

How ready are we for this transition?

— Our Russian energy balance is probably one of the most diversified and cleanest of all . For example, in our country the share of coal in the balance is only 12%, while in Europe it is more than 25%. If we count the sun, wind, hydropower, nuclear power, we have more than 40% of them, plus about 50% of gas in the balance. That is, almost 90% in Russia are clean energy sources .

In [the USA](#) , for example, the share of such sources is only 65%, in Germany - 57%. That is, regardless of the fact that the energy transition is taking place, we, in principle, have always diversified our energy balance .

By 2035, Russia will reach approximately 10% of renewable energy sources, and by 2050 - 20% . Although, to be honest, we do not set ourselves such ambitious goals as the same European countries. Because our balance sheet already has a lot of clean energy sources, such as gas, a lot of nuclear generation, hydrogeneration . Therefore, solar and wind generation are being developed in our country so that we can create our own production base in our country, an industry that can independently produce equipment for solar and wind power plants, regardless of external conditions . And I will say that the task that was set by the president has actually been solved - over the past 10 years, a renewable energy industry has been created in the country, 11 thousand jobs have been organized. To date, the country already has a capacity of 1600 MW of solar and wind production annually. We sell products of solar power plants and for export . From the point of view of climate and ecology, this is the right direction, we will continue , but, of course, not to the detriment of consumers of cheap generation that we have.

- So this is a natural process? Because sometimes you can hear the opinion that the alternative energy market is artificially pumped up.

- Artificiality is present in those decisions that the EU, for example, takes, since they do not have cheap energy sources. There are only small reserves of coal, very little gas - basically Europe rests on purchased energy sources. Nuclear energy is a different story - about 50 to 50 countries are divided that support it and those who categorically oppose it . Germany has recently closed all its nuclear power plants, while France is actively developing them, 70% of the energy balance of this country is represented by nuclear energy.

Many countries of the former socialist bloc also support and develop nuclear energy . For example, Hungary, Slovakia and so on. My personal opinion is that nuclear energy is the future . But whatever the sources of energy in the future, the growth in consumption in the world is going at a fairly high

pace. Over the past 20 years, it has amounted to 40% . The population is increasing, there are such serious consumers as data processing centers (DPCs), industrial miners, electric vehicles and so on.

Energy consumption in the world will continue to grow significantly, and its traditional sources will retain a large share . Neither the sun nor the wind can cover all the energy that will be consumed on Earth by mankind - transport, housing and communal services, for heating, for various types of industry, and so on. Therefore, nuclear energy is the future, it is quite safe today .

- There is a complex political background in the development of nuclear energy, there is pressure from the West, competition is intensifying. How threatening do you see sanctions for the Russian nuclear industry?

- It is clear that the measures that have been introduced against Rosatom are political sanctions. From an economic point of view, they have no logic , because in fact, Rosatom today is the only company in the world that operates along the entire technological chain - from scientific activity to equipment production . No one else in the world can do this - completely localize the construction and operation of nuclear power plants . I can note that today 70% of those nuclear facilities that are being built in the world, 35 units are orders that are carried out by Rosatom . It is probably difficult to impose sanctions against such a company and then talk about the safety of operation of existing power facilities. Therefore I am sure that we will continue to develop, today one of the main directions in the strategy for the development of nuclear energy in our country is the production of not only large units with a capacity of 1200 MW, but also the development of small nuclear generation, which will become the basis for the future development of the nuclear industry .

- Are we talking about floating nuclear power plants?

— Floating nuclear power plants are, in fact, small generation. We have the only floating nuclear power plant in the world that is operating today. It is installed in Chukotka , provides power supply to the Chukotka Autonomous Okrug and those industrial enterprises that work there. Today there is already an order for new floating nuclear units, nuclear power plants . If we talk about the land part, then here it is primarily the supply of isolated, hard-to-reach regions of our country. Today, in the nuclear industry, Rosatom is developing various low-power units, from 5 to 200 MW .

“We have been engaged in import substitution for the last 10 years”

- You have already begun to talk about the restrictions that have been imposed on our country. To what extent did the Russian fuel and energy complex succeed in resisting the sanctions? Is 100% technological sovereignty of the Russian energy industry possible?

Oil ceiling: what could result in the introduction of a price limit for raw materials from Russia

And why this measure is not as painful as the EU would like

— First of all, I will focus on how we work in the conditions that we have encountered and on the challenges that we saw in the world energy markets last year. Unprecedented sanctions have been imposed on our oil and gas industry. If earlier, after 2014, this concerned only the supply of equipment and offshore production or hard-to-recover deposits, now total sanctions have been introduced regarding the supply of equipment and interaction with foreign companies. We were ready for this, we have been engaged in import substitution for the last 10 years. Many technologies, equipment that used to be foreign and used by us, we have learned to produce ourselves. That is our enterprises began to produce hydraulic fracturing and directional drilling technologies, created their own fleet, telemetry, and LNG production technologies. All fields have their own drilling platforms, which are produced in our country.

The main challenge that occurred last year and which affected production in March-April 2022 (and I remind you that it fell by 10% then within one month, but then recovered by the summer), is primarily a violation transport and logistics chains. We faced the problem of the lack of a fleet and insurance, with the unwillingness of buyers to work with our companies, and this required a reconfiguration of the entire transport and logistics chain. Our companies quickly coped with this. They were ready, and at the end of the year we even received a 2% increase in production compared to 2021. That is 2022 was a normal, stable year for our oil industry. Industries also worked on the domestic market, and export supplies were secured, budget revenues are 25% more than in 2021, we received almost 2.5 trillion rubles more. Therefore, I believe that we managed, despite the fact that each time our “partners” come up with more and more new sanctions and restrictions.

- If we talk about technological sovereignty, is it possible to reach 100%? And if so, when?

- Everything is possible. The only thing is whether it makes sense. There are, for example, critical technologies, without which the work of the industry is impossible. According to them, of course, it is necessary to have 100 percent independence, technological sovereignty. At the end of last year, the president set such a task - technological and financial sovereignty. Relevant instructions have been given, our companies and authorities are working to raise it to the level of independence in all critical technologies

As for conventional technologies, such as equipment, which both we and foreign companies can make, it's just a matter of competition. We have always proceeded from the premise that it is impossible to close markets, but at the same time, it is necessary to support our industry in the first place with those technologies that are necessary and critical.

“Among the countries where additional volumes of oil will go are China and India”

- We are now talking about new markets as a 100% fact that has already happened. And where do we redirect our products now? How seriously have these trends changed?

— If we take the oil industry, namely the export of our oil and oil products, we used to supply approximately 225 million tons to the West. This is an average. And in 2022, as a result of a change in logistics to the eastern markets, approximately 40 million tons were

additionally redirected to the Asia-Pacific direction from the west . This year, 140 million tons will be diverted, and only about 80 million tons will remain in Western markets.

Why will it remain, despite the introduction of an embargo on the supply of oil and petroleum products to Europe? The fact is that a number of exceptions have been made for Hungary, Slovakia, the Czech Republic, there are also exceptions for Bulgaria, and, plus, there are very interesting sanctions restrictions regarding petroleum products . For example, if our oil is processed in other markets, then it can then be delivered to Europe, or if our oil and oil products are mixed with some other oil products, then the same principle applies.

Our "partners" thus left a loophole for themselves. Among the countries where additional volumes of oil and oil products will go are, first of all, China and India . Previously, we practically did not supply these products to India, but last year exports to India amounted to 32 million tons, this year there will be even more. These markets are friendly to us . But, of course, due to the lengthening of the transport component, there were high costs for the delivery of products.

- With an increase in demand in eastern markets, with an attempt by the West to influence them, what happens to prices? What will happen next? How fair is the current market price for energy, in your opinion?

— The price is formed in a market way, and this is most evident in the oil market. Basically it is a derivative of the balance of supply and demand . There may be some risks, factors that the market takes into account, and traders or exchange participants always lay these or those risks both down and up. If we look, for example, over the past six months at the oil market, we will see that the average price of Brent for this period was about \$80 per barrel, it periodically fluctuates plus or minus \$5–7 in one direction or the other . The maximum during this period was \$87, the minimum was \$72. Today, approximately \$75–76. Why is it below the average for this period? Because the market evaluates the current situation, mainly macroeconomic, in the world market. We see very high refinancing rates of US central banks - today, in my opinion, they are above 5%, Europe - 3.75% , and this is what reduces investment activity and consumption - and these are the risks of lower demand.

One of the factors that we see is that everyone takes into account the huge Asia-Pacific market, and when China came out of COVID-19, there were estimates that it would recover its economy at a faster pace . Although in fact we see that there is a slower recovery, the market is also estimating this. As soon as China begins to consume more energy resources, the market will react differently .

- Do I understand correctly that this compensates for the risks of a recession in Europe and the United States?

- naturally, the world economy is made up of the situation in different countries: some are growing, others may be declining. While we are not talking about the fact that we see a

recession somewhere, just lower growth rates than analysts expected. Therefore, the price is formed in this way. It is important that the market today is very seriously affected by the interaction of those exporting countries that work within the framework of OPEC+ . And if they see an excess in the market, then they reduce production, and if demand grows, then it is necessary to increase it so that prices do not rise much, because this is also not beneficial to anyone. Therefore, such a balancing mechanism as OPEC+ is a very important component for the entire market as a whole.

— What do you expect from the next OPEC+ meeting, which will be held on June 4?
- This will be the first face-to-face meeting in six months, we are waiting, as usual, for an assessment of the market situation. But I do not think that there will be any new steps, because just a month ago, certain decisions were made regarding the voluntary reduction of oil production by some countries due to the fact that we saw a slow pace of global economic recovery. If we take the total set of reductions - Russia, Saudi Arabia, Iraq, the United Arab Emirates, Kuwait and other countries - an additional 1.6 million barrels per day will be reduced in May. Our task now is to monitor the situation on the market and respond promptly.

— You spoke about the price corridor for Brent oil during this year — \$70-80 per barrel. At the end of the year, do you think the corridor will be the same or will it go to some plus or minus?

- It is difficult to predict. I think that the price will be slightly higher than \$80 per barrel, and I hope that demand will still grow in summer. Because in the summer period there is more consumption from transport, transportation and air traffic, consumption from agriculture. The reduction in production, which many countries are carrying out today, should also have an effect . But I repeat once again: we do not have the task of inflating prices - there is the task of balancing in order to ensure the interests of both producers and consumers. After all, for consumers, high prices mean that they will fight it - by reducing consumption or replacing oil with other energy sources . For example, how does the United States deal with high prices? They just throw away from their strategic reserves oil to the market. Recently, this volume has amounted to 180 million barrels, and if divided by 365 days, this is almost half a million barrels per day, their strategic reserve has halved . Another problem arises: in order to replenish it, they now have to enter the market with a purchase, and then additional demand arises, which puts pressure on the price increase, this is actually a dilemma for the United States.

- Today, some analysts in the West are of the opinion that the role of OPEC + in the market is greatly exaggerated...
- I have not heard such assessments, on the contrary, I see how many consumers are trying to fight the decisions that are made by OPEC +, for example, the United States . They constantly hear the theme that now we will again get the NOPEC law out of the chest (it is a bill that proposes to empower the US courts to consider claims against OPEC and other countries. - Izvestia) and we will fight them. All this just means that the influence is still there. If we recall 2020, we faced a pandemic and demand fell by 20% due to the fact that everyone was at home, there was a lockdown, no one flew, no one drove cars, but the supply did not fall. We were in a situation where everything could stop, overstock, and the industry could simply lose itself. And that's when only thanks to the actions of the OPEC + countries, which agreed to cut production by 10

million barrels per day, managed to save the market. And such situations were several times

“Gasification is the most important task facing our gas industry”

— Today, a large program of social gasification is being implemented. How do you assess the pace at which it goes?

— Gasification is the most important task facing our gas industry . Today we have a fairly high level of gasification - 73%, in fact, there is no such level in the world. The President has set a task to complete gasification as much as possible by 2030 . Based on our fuel and energy balance, it was calculated that we should reach the level of 83%. This year we expect to exit somewhere at 74-75% . We have a large program in almost all subjects of the Russian Federation where there is main gas, programs have been signed until 2025 for the construction of main gas pipelines, inter-settlement gas pipelines , then there will be further programs from 2025 to 2030 in order to complete gasification - this is the first.

And secondly, the president also set the task of changing the system of relations within the framework of the ongoing gasification . For example, if earlier municipalities were responsible for laying the gas pipeline inside the village, these were their expenses, and the owner of the household paid from the street gas pipeline to the fence, but now the task is to ensure social additional gasification. That is, the consumer , the owner of the house, site, does not have to pay for bringing the gas pipeline to his site . He is obliged to pay and finance only internal wiring, inside the house and inside his site.

This significantly reduced the burden on the consumer, the number of applications has actively increased - over the past year they received 1.3 million , this has never happened before. To date, approximately 570 thousand contracts have already been executed , brought to the borders of land plots. In addition, the principle and mechanism of a single window, a single gas supply operator (Gazprom), which is responsible for bringing the gas pipeline directly to the border of the site, has been introduced.

- Do these applications from citizens somehow affect the progress of work? Sometimes in Telegram channels you can read that the contract was signed a long time ago, but nothing has been done so far.

“Now the situation is much better than it was before the changes that have taken place. For the past two years, large-scale work has been carried out at the level of the constituent entities of the Russian Federation, the Ministry of Energy, we hold meetings of the federal headquarters once every two weeks. In addition, the normative has changed, now there are strict deadlines . I do not rule out the cases that you are talking about, but we have a feedback system, now it is possible to receive any complaints, requests, and the gas distribution organization is obliged to deal with it .

- That is, figuratively speaking, from the moment you buried the pipe until the gas is brought to the house, a limited amount of time should pass?

- If, for example, there is already a gas pipeline system inside the settlement or a gas pipeline is laid along the streets, then the connection should be no more than 30 days. If, for example, there is no gas pipeline , and it is at a distance of more than 200 m, then the period is slightly longer - 90 days . It's all spelled out in a government decree.

— Within the framework of SPIEF, you will participate in the session “Energy of the 21st Century: Challenges of the Present – Opportunities of the Future”. What current challenges do you see as an opportunity for us in the future?

— We have already touched upon one of these challenges with you — this is the energy transition, the competition of energy resources . Now, since each industry is its own type of business, many are diversifying it. For example, oil companies are also involved in renewable energy, determine their own climate policy, and so on . And this is the challenge that will be tomorrow, namely, what technology will be, what will be in demand, what will be of interest to the consumer in the first place.

“Many of our companies are working on hydrogen production technologies”

What technologies will be the most in demand in our country in the future? What are we willing to invest in?

Of course, this is thermonuclear energy, which Rosatom and the Kurchatov Institute are working on . There is also significant progress here. And, of course, biofuels . This direction is actively developing, but, in my opinion, it is not very promising in our country. , many of our companies are working on technologies for the production of hydrogen, its storage, transportation, and disposal of CO₂. And most importantly, hydrogen needs not only to be produced in order to have it, it is important that we learn how to use it in technology.

— How promising is the North-South corridor from this point of view? And how is work being done in this direction?

- If we talk about the development of our trade and economic relations with the countries of the Asia-Pacific region, the Middle East, then, of course, we proceed from the fact that in the current conditions the routes related to the transportation of our cargo, whether it be railway, road or sea transport , through the Caspian Sea, for example, or the Northern Sea Route are key areas of development . Without the possibility of transporting cargo, it is impossible to ensure exports and develop cooperation. One of them is the North-South international transport corridor, globally speaking, this is the connection of our Baltic ports with the Persian Gulf, a seamless transport connection . Today, this international transport corridor transports 8 million tons of cargo per year. By 2030, we expect to reach a volume of at least 35 million tons . And then it will be 60 million tons, and possibly more than 100.

Novak said that OPEC+ at a meeting on June 4 will determine what is best for the market

The Deputy Prime Minister of the Russian Federation noted that the OPEC+ meetings are aimed at jointly discussing the state of the oil market and reaching consensus on further actions that should be implemented to achieve balance

MOSCOW, May 25. /TASS/. OPEC+ countries at the meeting, which is scheduled for June 4, will determine what is best for the oil market, while adhering to the vector of previous decisions. Russia will participate in this discussion together with alliance partners, Russian Deputy Prime Minister Alexander Novak told reporters on Thursday.

Novak noted that the OPEC+ meetings are aimed at jointly discussing the state of the oil market and reaching consensus on further actions that should be implemented to achieve balance.

"This is a systematic approach, which will also be the basis of the OPEC+ meeting in June, where, if necessary, decisions can be made. We do not agree with the fact that Bloomberg has distorted the information, on the basis of an incomplete citation declaring Russia's disagreement with the possibility of making decisions at a future meeting. Russia will participate in the discussion together with partners in order to determine what is best for the market, while adhering to all previous decisions," he said.

Earlier, Novak, in an interview with [Izvestia](#), said that he did not expect any new steps at the upcoming OPEC+ meeting, which will be held in person. Bloomberg, in the context of the Deputy Prime Minister's statement, wrote that "Russia has downplayed the likelihood of a new OPEC+ production cut."

<https://www.globaltimes.cn/page/202305/1291118.shtml>

Vaccines countering XBB variant to be released to the market: top respiratory expert

By GT staff reporters Published: May 22, 2023 12:57 PM



Zhong Nanshan Photo: VCG

A new COVID-19 infection wave in 2023 will likely peak in late June at about 65 million cases per week, China's top respiratory disease expert Zhong Nanshan said Monday.

Zhong made the remarks at the 2023 Greater Bay Area Science Forum on Monday in Guangzhou, South China's Guangdong Province, when he also revealed that two new vaccines to counter the XBB variant will soon be released to the market.

A small wave of COVID-19 infections at the end of April and early May was "anticipated." Projections showed that a small peak of infections is likely at the end of May, with the number of infections peaking at about 40 million per week. By the end of June, the epidemic is expected to peak at about 65 million infections a week.

The second peak won't be as bad as the first, nor will hospitals be overloaded as reinfection usually comes with milder symptoms, Wang Guangfa, a respiratory expert at Peking University First Hospital, told the Global Times on Monday.

But Wang reminded vulnerable groups such as people with underlying diseases to take measures to prevent infection.

At the forum, Zhong highlighted developing effective vaccines to counter the XBB variant as being critical, since the XBB mutant has become a mainstream strain of COVID-19 in China.

China has approved two COVID-19 vaccines to counter the country's current dominant XBB variant and the new vaccines will soon be released to the market, Zhong revealed at the forum.

He said that three or four more will likely be approved soon. "On developing more effective vaccines, we are running ahead of other countries."

According to the China Center for Disease Control and Prevention (China CDC), the infection rate of the XBB mutant increased from 0.2 percent in mid-February to 74.4 percent in late April and then to 83.6 percent in early May.

The proportion of infections linked to the variant continues to rise, the China CDC said.

The currently circulating XBB strain variant is a recombinant of Omicron. The data show that its transmissibility and immune escape ability are stronger than those of the early circulating Omicron variant, but there is no significant change in its pathogenicity, according to the National Health Commission.

Data published by China CDC Weekly show that among 368 COVID-19 infections, 104 were infected for the second time, with a larger proportion having received booster shots.

"The vaccines based on original variants are not designed to prevent infection by new variants. The former cannot induce sufficiently effective neutralizing antibodies against the mutated strain, whereas the new generation of vaccines, which are more targeted, can induce sufficient and effective antibodies," Xie Liangzhi, chairman of Beijing-based SinoCellTech, said.

Effective vaccines must be updated just as vaccines against the flu are adjusted to target new variants each year, Xie noted.

China not yet in middle of second wave of COVID-19: epidemiologists

By Global Times Published: Apr 23, 2023 10:36 PM

Discussion of re-infection with COVID-19 has become trendy on Chinese social media after a bunch of users posted positive antigen results for the coronavirus. Epidemiologists whisked off concerns of a second wave coming, and they said that most people infected with COVID-19 now are those who did not contract the virus before.

Recently, some netizens posted pictures of their positive antigen tests on Chinese social media, claiming they were "re-infected" with COVID-19. A Nanjing netizen said on Chinese Instagram-like fashion and lifestyle-sharing platform Xiaohongshu that five people in her family tested positive for COVID-19 in recent days, almost four months after they first tested positive in December last year.

A company in Beijing on Sunday began to survey whether its employees had been infected with COVID-19 lately, and asked those who had contracted the virus to stay at home, the Global Times learned. Similarly, a primary school in South China's Guangdong Province is following a similar practice for teachers and students alike.

The Chinese Center for Disease Control and Prevention (China CDC), which has been monitoring COVID-19 infection numbers and new variants, said on Sunday that health departments reported 2,661 positive COVID-19 cases nationwide on Thursday.

The COVID-19 positive rate for Thursday was slightly higher than it was on April 13. On March 13, the China CDC announced that 1.3 percent of those who took nucleic acid tests were positive, and the rate on Thursday was 1.7 percent.

Chinese epidemiologists believed those who get infected twice are "rare cases." Most COVID-19 infections in China at the current stage are people who dodged the bullet during the first massive infection wave at the end of last year.

"From December until now, almost one-third of those who did not infect during the last wave are gradually getting infected. Later, more and more of those who haven't got COVID-19 will be infected, but the peak won't surpass even 10 percent of that in December last year," Wang Guangfa, a respiratory expert from Peking University First Hospital, told the Global Times.

Thus, there won't be palpable pressure on China's hospitals and the medical system, according to Wang, who expects a second wave will come in September this year.

Li Tongzeng, chief physician in the respiratory and infectious diseases department at Beijing You'an hospital, told the Global Times that the risk of being reinfected with COVID-19 will increase, but most people who are infected a second time will have relatively milder symptoms, thus the blow of the second wave to the medical system will be less severe than in December.

According to China CDC's data, the number of COVID-19 infections in China peaked at 6.94 million per day on December 22 last year and then began to fall gradually.

Speaking at a forum on Thursday, Zhang Wenhong, head of the infectious disease department at Huashan Hospital in Shanghai, also director of the National Center for Infectious Diseases, said that monitoring data showed that most of the current infections in China are people who haven't contracted the virus before.

Zhang noted that if the coronavirus mutates, some people will be re-infected after six months. But the scale will not be huge. However, if the mutation manages to break the immune barrier formed during the previous wave, an infection peak will come.

The China CDC claimed it had detected 12 new variants in this country. The center had found 42 cases of

XBB.1.16 - referred to as "arcturus"— which has been the dominant variant in India since March. The China CDC assured the public, saying that there are a very small number of XBB.1.16 carriers, which have yet to form a transmission trend.

Although the scale won't be as huge as the previous wave, Zhang still called for stockpiling of small molecule antivirals of COVID-19, and at the same time establishing a model that could treat COVID-19 patients within 48 hours.

"I believe constant monitoring, warnings and stockpiling of medicines will enable us to respond rapidly to any mutations and run faster than the next infection," said Zhang.

The public are concerned if infections will surge during the upcoming May Day holidays, as a booking surge leads to large-scale gatherings.

Wang said it's likely that infections will climb during the May Day holidays. Yet the majority of people in China are vaccinated, and many have already been infected, which means high-level immunity among the public.

"Large-scale infection is unlikely," said Wang.

Wave of COVID-19 reinfection in China has 'limited impact' on everyday life

By Global Times Published: May 26, 2023 06:28 PM

A rising number of COVID-19 reinfection cases in China have caused public concern over whether there will be a new wave of the virus. Experts have noted that the epidemic situation is on a slow upward trend, but there will be limited disruption on everyday life.

Many people have developed symptoms including sore throats and are concerned that they may have been reinfected. Wang Guiqiang, director of the infectious disease department of Peking University First Hospital, said there were many potential reasons behind a sore throat and that individuals should remain objective, according to the National Health Commission.

COVID-19, influenza and other bacterial infections can all cause a sore throat and should all be treated differently. If a person becomes infected with COVID-19, the person should be treated as a COVID-19 patient, according to Wang.

The current prevalent XBB variant is a recombinant variant of Omicron, which has higher transmissibility and immune escape capacity than the Omicron variants prevalent in previous waves, but there was no significant change in pathogenicity, health authorities stated.

"It will be the epidemiological feature of COVID-19 that people may become reinfected at different times, but there will be less impact toward their lives," Lu Hongzhou, head of the Third People's Hospital of Shenzhen told the Global Times on Friday.

We just experienced a peak infection about half year ago, with more than 90 percent of the population becoming infected, building wide herd immunity. Although the effect of herd immunity will gradually decrease as new variant strains emerge, herd immunity still plays an effective "barrier" role in preventing the virus spreading, Lu explained.

It has been about six months since the last mass wave of infections, and many people's antibodies are gradually disappearing, and it is suggested to take booster shots based on the vaccine plan issued by the national health authorities, Lu said.

In Beijing alone, the top five diseases reported in the city for the week between May 15 and 21 were COVID-19, other infectious diarrheal diseases, influenza, tuberculosis and viral hepatitis, accounting for 98.9 percent of the reported cases of notifiable infectious diseases, according to the Beijing CDC on May 24.

It is a rule of science that a second wave of COVID-19 has occurred in every country monitoring the epidemic without exception, Zhang Wenhong, director of Infectious Diseases Department at Huashan Hospital, Fudan University told media recently, media reported. As public immunity is weakened and the virus mutates, however, it has less severe symptoms generally and there is more effective response from medical resources, according to Zhang.

Zhang said that it should not be an obstacle to people's normal life and people should not overreact.

China's top respiratory disease expert Zhong Nanshan said that China-developed vaccines covering

the XBB variant are expected to be available soon. We have predicted that there was a small peak in COVID-19 infections in late April and early May, Zhong said during the Greater Bay Area Science Forum on May 22, according to the Shenzhen Economic Daily.

The country is predicted to face a peak at the end of June, with about 65 million people infected with COVID-19 each week, according to Zhong. But Zhong also noted that it's predicted based on model calculation, which might not be accurate.

China's National Health Commission in April unveiled the latest plan for COVID-19 vaccination, aiming to increase the immunity levels across certain groups and reduce the risks of severe infection and death caused by the virus.

Global Times

<https://www.trucking.org/news-insights/ata-truck-tonnage-index-decreased-17-april>

ATA Truck Tonnage Index Decreased 1.7% in April

May 23, 2023

Washington — American Trucking Associations' advanced seasonally adjusted (SA) For-Hire Truck Tonnage Index fell 1.7% in April after decreasing 2.8% in March. In April, the index equaled 112.7 (2015=100) compared with 114.7 in March.



“While the broader economy continues to surprise and thus far stave off an expected recession, the freight economy is starkly different,” said **ATA Chief Economist Bob Costello**. “The goods-portion of the economy is soft and as a result, even contract truck freight is now falling, albeit not nearly as much as the spot market. The tonnage index hit the lowest level since September 2021 in April and has now fallen on a year-over-year basis for two straight months.”

March’s decline was revised up from our April 18 press release.

Compared with April 2022, the SA index decreased 3.4%, which was the largest year-over-year decrease since February 2021. In March, the index was down 2.4% from a year earlier.

The not seasonally adjusted index, which represents the change in tonnage actually hauled by the fleets before any seasonal adjustment, equaled 109 in April, 9.5% below the March level (120.4). In calculating the index, 100 represents 2015. ATA’s For-Hire Truck Tonnage Index is dominated by contract freight as opposed to spot market freight.

Trucking serves as a barometer of the U.S. economy, representing 72.2% of tonnage carried by all modes of domestic freight transportation, including manufactured and retail goods. Trucks hauled 10.93 billion tons of freight in 2021. Motor carriers collected \$875.5 billion, or 80.8% of total revenue earned by all transport modes.

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

NOAA predicts a near-normal 2023 Atlantic hurricane season

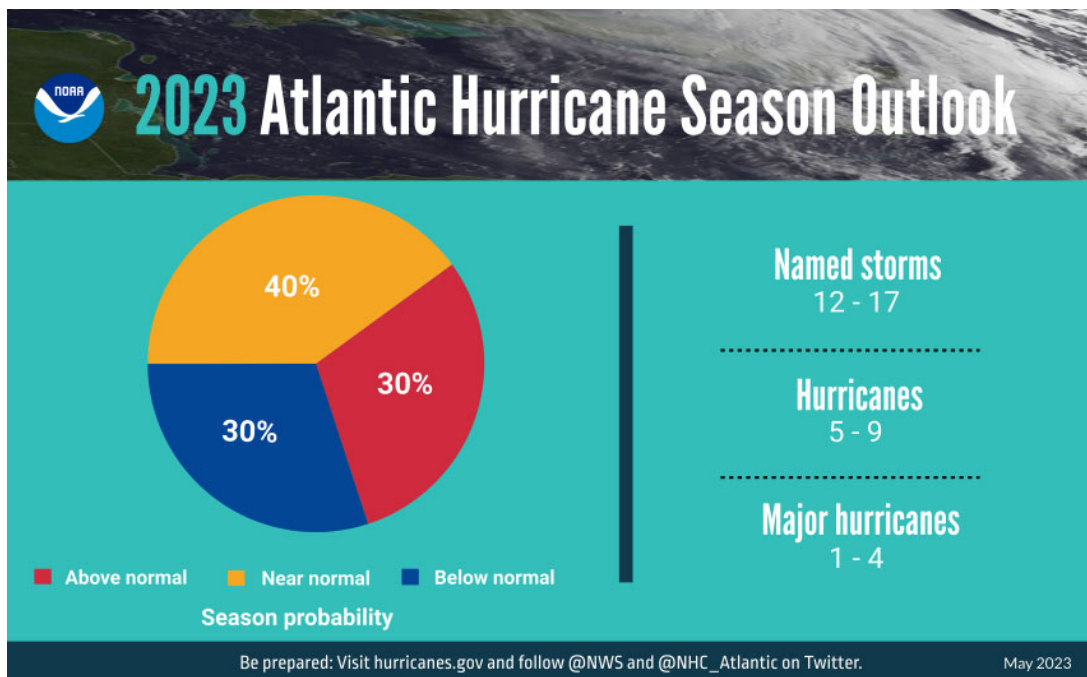
El Nino, above-average Atlantic Ocean temperatures set the stage

Share:

May 25, 2023

NOAA forecasters with the [Climate Prediction Center](#), a division of the National Weather Service, predict near-normal hurricane activity in the Atlantic this year. NOAA's outlook for the 2023 Atlantic hurricane season, which goes from June 1 to November 30, predicts a 40% chance of a near-normal season, a 30% chance of an above-normal season and a 30% chance of a below-normal season.

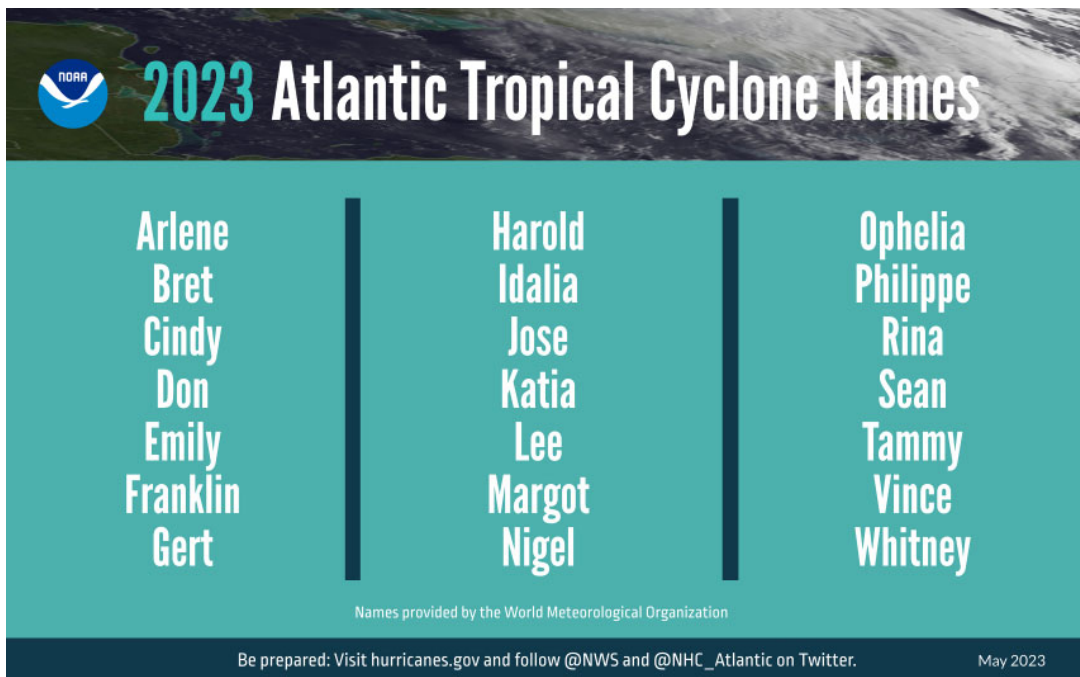
NOAA is forecasting a range of 12 to 17 total named storms (winds of 39 mph or higher). Of those, 5 to 9 could become hurricanes (winds of 74 mph or higher), including 1 to 4 major hurricanes (category 3, 4 or 5; with winds of 111 mph or higher). NOAA has a 70% confidence in these ranges.



A summary infographic showing hurricane season probability and numbers of named storms predicted from NOAA's 2023 Atlantic Hurricane Season Outlook. (Image credit: NOAA)

[Download Image](#)

"Thanks to the Commerce Department and NOAA's critical investments this year in scientific and technological advancements in hurricane modeling, NOAA will be able to deliver even more accurate forecasts, helping ensure communities have the information they need to prepare for and respond to the destructive economic and ecological impacts of Atlantic hurricanes," said Secretary of Commerce Gina M. Raimondo.



A summary graphic showing an alphabetical list of the 2023 Atlantic tropical cyclone names as selected by the World Meteorological Organization. The official start of the Atlantic hurricane season is June 1 and runs through November 30. (Image credit: NOAA)

[Download Image](#)

The upcoming Atlantic hurricane season is expected to be less active than recent years, due to competing factors — some that suppress storm development and some that fuel it — driving this year's overall forecast for a near-normal season.

After three hurricane seasons with La Nina present, NOAA scientists predict a high potential for [El Nino to develop](#) this summer, [which can suppress Atlantic hurricane activity](#). El Nino's potential influence on storm development could be offset by favorable conditions local to the tropical Atlantic Basin. Those conditions include the potential for an above-normal west African monsoon, which produces African easterly waves and seeds some of the stronger and longer-lived Atlantic storms, and warmer-than-normal sea surface temperatures in the tropical Atlantic Ocean and Caribbean Sea which creates more energy to fuel storm development. These factors are part of the longer term variability in Atlantic atmospheric and oceanic conditions that are conducive to hurricane development — known as the high-activity era for Atlantic hurricanes — which have been producing more active Atlantic hurricane seasons since 1995.

“With a changing climate, the data and expertise NOAA provides to emergency managers and partners to support decision-making before, during and after a hurricane has never been more crucial,” said NOAA Administrator Rick Spinrad, Ph.D. “To that end, this year we are operationalizing a new hurricane forecast model and extending the tropical cyclone outlook graphic from five to seven days, which will provide emergency managers and communities with more time to prepare for storms.”

This summer, NOAA will implement a series of upgrades and improvements. NOAA will expand the capacity of its operational supercomputing system by 20%. This increase in computing capability will enable NOAA to improve and run more complex forecast models, including significant model upgrades this hurricane season:

- In late June, the Hurricane Analysis and Forecast System (HAFS) will become operational. HAFS will run this season in tandem with the currently operational Hurricane Weather Research and Forecast Model System and Hurricanes in a Multi-scale Ocean-coupled Non-hydrostatic model, but eventually will become NOAA's primary hurricane model. Retrospective analysis of tropical storms and hurricanes from the 2020-2022 seasons show that this model has a 10-15% improvement in track forecasts over existing operational models. This new model was jointly created by NOAA's Atlantic Oceanographic & Meteorological Laboratory [Hurricane Modeling and Prediction Program](#) and [NOAA's National Weather Service Environmental Modeling Center](#).
- The Probabilistic Storm Surge model [upgrade](#) on May 2, advances [storm surge](#) forecasting for the contiguous U.S. and new forecasts for surge, tide and waves for Puerto Rico and the U.S. Virgin Islands. Forecasters now have the ability to run the model for two storms simultaneously. This model provides forecasters with the likelihood, or probability, of various flooding scenarios including a near worst-case scenario to help communities prepare for all potential outcomes.

Additional upgrades or new tools for hurricane analysis and forecasting include:

- The National Hurricane Center's [Tropical Weather Outlook](#) graphic, which shows tropical cyclone formation potential, has expanded the forecast range from five to seven days.
- Over the last 10 years, flooding from tropical storm rainfall was the single deadliest hazard. To give communities more time to prepare, the Weather Prediction Center is extending the [Excessive Rainfall Outlook](#) an additional two days, now providing forecasts up to five days in advance. The outlook shows general areas at risk for flash flooding due to excessive rainfall.
- The National Weather Service will unveil a new generation of forecast flood inundation mapping for portions of Texas and portions of the Mid-Atlantic and Northeast in September 2023. These forecast maps will extend to the rest of the U.S. by 2026. Forecast flood inundation maps will show the extent of flooding at the street level.

NOAA will continue improving new and current observing systems critical in understanding and forecasting hurricanes. Two projects underway this season include:

- New [small aircraft drone systems](#), the deployment of additional [Saildrones](#) and [underwater gliders](#), and [WindBorne global sounding balloons](#). These new [technologies](#) will advance our knowledge of hurricanes, fill critical data gaps and improve hurricane forecast accuracy.
- The modernization and upgrade of the [Tropical Atmosphere Ocean buoy array](#). The upgrade will provide additional capabilities, updated instruments, more strategic placement of buoys and higher-frequency observations. Data from these buoys are used to forecast El Nino and La Nina, which can influence hurricane activity.

“As we saw with Hurricane Ian, it only takes one hurricane to cause widespread devastation and upend lives. So regardless of the number of storms predicted this season, it is critical that everyone understand their risk and heed the warnings of state and local officials. Whether you live on the coast or further inland, hurricanes can cause serious impacts to everybody in their path,” said FEMA Administrator Deanne Criswell. “Visit [ready.gov](#) or [listo.gov](#) for readiness resources, and get real time emergency alerts by downloading the FEMA App. Actions taken today can save your life when disaster strikes. The time to prepare is now.”

NOAA's outlook is for overall seasonal activity and is not a landfall forecast. In addition to the Atlantic seasonal outlook, NOAA also issues [seasonal hurricane outlooks for the eastern Pacific](#) and central Pacific hurricane basins. NOAA's Climate Prediction Center will update the 2023 Atlantic seasonal outlook in early August, just prior to the historical peak of the season.

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<https://www.reuters.com/world/europe/germany-earmark-4-bln-euros-annually-power-subsidy-economy-minister-2023-05-22/>

Germany to earmark 4 bln euros annually for power subsidy - economy minister

[Reuters](#)

May 22, 2023 2:34 PM MDT Updated a day ago



German Economy and Climate Protection Minister Robert Habeck attends an economic committee meeting on the current reporting on personnel policy and staffing by the Federal Ministry of Economics in Berlin, Germany May 10, 2023. REUTERS/Michele Tantussi

BERLIN, May 22 (Reuters) - Germany plans to earmark around 4 billion euros (\$4.40 billion) annually to subsidize electricity prices for energy-intensive industries, to support an industrial move away from fossil fuels and discourage firms from moving offshore.

The government last year introduced electricity and gas price caps to shield industry and households from rising energy prices, but companies in Germany say electricity prices are still too high.

"We want the industry ... to stay home in Germany and be given a transformation perspective. The industry electricity price is intended for this," Economy Minister Robert Habeck said in a news conference on Monday.

The government is discussing the details of the subsidy which the finance ministry opposes, but Habeck said the subsidy could cap prices at 6 cents per kilowatt hours (kWh), covering 80% of industrial firms' consumption.

"This price will be calculated on the basis of the average exchange electricity price and then calculated down," Habeck said, adding that this would give companies incentive to look for cheaper energy prices from renewable energy sources on the market.

The subsidy, which would cost around 25 to 30 billion euros, should be phased out by 2030 and would be financed through the Economic Stabilisation Fund (ESF), originally introduced in 2020 to bail out airline Lufthansa during the pandemic.

Earlier this month, the German finance ministry pushed back against the economy ministry's subsidy plan as the budget did not allow for it and existing funds could not be redirected.

Small and medium-sized firms in energy-intensive industries such as the metal and chemical sectors will be able to benefit from the support, he said.

"If we don't pay this price, we may no longer have future industrial sectors in these energy-intensive areas in Germany and that would be a loss," Habeck added.

(\$1 = 0.9084 euros)

Reporting by Riham Alkousaa Editing by Bernadette Baum

Ola Borten Moe is Minister of Research and Higher Education since 2021. Previously, he also served as Minister of Petroleum and Energy from 2011 to 2013.

<https://www.facebook.com/SPolabortenmoe/posts/pfbid02FhTrNJAApZa6m392J41EgiRbFzG6ffgq12n3JAwqYQVL3cR7p9ztixMQiR1wG6qXI>



Ola Borten Moe

January 6 · 🌐

Det er stadig mer åpenbart at vi alt for lenge har oppført som om det er ubegrenset tilgang på fornybar og rimelig strøm i Norge. Faktum er enkelt og greit at det er mangel på energi i kraftsystemene våre. Svært høye priser og frykt for forsyningsikkerheten dokumenterer dette. Vi må derfor selvsagt få et langt mer realistisk forhold til hva vi bruker energi på. Og vi må få et bevist forhold til enkle faktorer som ressurseffektivitet og virkningsgrad. Hydrogen er sikkert bra til mye, men faktum er at det er et høyeksplosivt lagringsmedium med store energitap i begge ender av prosessen. Om du bruker 100 kwh strøm til å produsere hydrogen vil du sitte igjen med en energimengde i hydrogen tilsvarende 50 kwh. Halvparten av energien er med andre ord tapt. Om du videre skal bruke dette hydrogenet i en brenselcelle taper du ytterligere 50%. Om du kjører det i en turbin for å produsere strøm taper du 70%. Med andre ord får du en utnyttelsesgrad i en bil på ca 25% eller 25 kwh av de opprinnelige 100 kwh pga energitap i prosessene. I en enkel turbin er tapet enda større. Denne strømmen/energien kunne alternativt blitt brukt direkte all den tid den tas fra nettet i Norge med en utnyttelsesgrad til for eksempel oppvarming, produksjon eller transport på 90-100%! Om Statkraft sammen med NEL lykkes med å etablere 2 gw elektrolyse av hydrogen i Norge tilsvarer det en energimengde på ca 17,5 twh, eller om lag 12-13% av all kraftproduksjon i Norge. Med 75% energitap er det 14 twh, eller 10% av all norsk kraftproduksjon rett i dass. Det er etter mitt skjønns lysår unna å være forsvarlig eller fornuftig. Vi trenger all den energien vi har og får til langt mer fornuftige ting enn å fyre for kråka.



STATKRAFT.NO
Nel og Statkraft legger grunnlaget for en verdikjede for grønt hydrogen i Norge
Hydrogenteknologiselskapet Nel og Europas største leverandør av fornybar energi, Statkraft, signerte nylig en kontrakt for leveranse av 40 MW elektrolyseutstyr og vil dermed samarbeide om å skape en sterk verdikjede...

👍 505

161 comments 108 shares

Google Translate of Moe's above Facebook posting

It is increasingly obvious that for far too long we have acted as if there is unlimited access to renewable and affordable electricity in Norway. The fact is plain and simple that there is a lack of energy in our power systems. Very high prices and fears about security of supply document this. **We must therefore of course have a far more realistic relationship with what we use energy for.** And we must have a proven relationship with simple factors such as resource efficiency and effectiveness. **Hydrogen is certainly good for many things, but the fact is that it is a highly explosive storage medium with large energy losses at both ends of the process. If you use 100 kwh of electricity to produce hydrogen, you will be left with an amount of energy in hydrogen corresponding to 50 kwh. In other words, half of the energy is lost. If you are going to use this hydrogen in a fuel cell, you lose a further 50%. If you run it in a turbine to produce electricity, you lose 70%. In other words, you get a utilization rate in a car of about 25% or 25 kwh of the original 100 kwh due to energy loss in the processes. In a simple turbine, the loss is even greater. Alternatively, this current/energy could have been used directly all the time it is taken from the grid in Norway with a utilization rate for, for example, heating, production or transport of 90-100%! If Statkraft together with NEL succeeds in establishing 2 gw electrolysis of hydrogen in Norway, this corresponds to an energy quantity of approximately 17.5 twh, or approximately 12-13% of all power production in Norway. With a 75% energy loss, that's 14 twh, or 10% of all Norwegian power production right there. It is, in my opinion, light years away from being justifiable or reasonable. We need all the energy we have and can do for far more sensible things than fighting for the crow.**

Google Translate of Statkraft's press release [\[LINK\]](#) linked in Moe Facebook posting

NEWS 2023

NEL AND STATKRAFT LAY THE FOUNDATION FOR A VALUE CHAIN FOR GREEN HYDROGEN IN NORWAY

Nel and Statkraft are laying the foundations for a value chain for green hydrogen in Norway

06 JAN., 2023

The hydrogen technology company Nel and Europe's largest supplier of renewable energy, Statkraft, recently signed a contract for the delivery of 40 MW electrolyser equipment and will thus work together to create a strong value chain for the production of green hydrogen in Norway.

Press releases

- We are determined to contribute to making Norway a leading producer of green hydrogen and establish an ecosystem of equipment suppliers, including the production of electrolysers, say Nels CEO Håkon Volldal and CEO of Statkraft, Christian Rynning-Tønnesen.

The announcement came in connection with German Vice-Chancellor Robert Habeck's visit to Nel's fully automatic electrolyser factory on Herøya. Industry Minister Jan Christian Vestre also joined the delegation together with his colleague, Energy and Energy Minister Terje Lien Aasland. The ministers are enthusiastic about the two companies' plans for a value chain for green hydrogen in Norway.

- It is gratifying that leading Norwegian players such as Nel and Statkraft are planning value chains for green hydrogen in Norway. This is an important step in the right direction to achieve our ambitions to build a coherent value chain for hydrogen and facilitate the production of hydrogen with no or low emissions to cover the national demand for hydrogen, says Oil and Energy Minister Terje Aasland .

From left: Habeck, Volldal, Rynning-Tønnesen, Aasland and Vestre Statkraft has recently signed a contract for the supply of 40 MW electrolyser equipment from Nel. The electrolysers will be manufactured at Nel's factory on Herøya and used for the production of green hydrogen in some of Statkraft's many hydrogen projects. As Europe's largest supplier of renewable energy, Statkraft has ambitions to reach an annual development rate of 4 GW of new power production and to have 2 GW of renewable hydrogen production in place by 2030. In Norway, Statkraft will strengthen its investment in developing new renewable power production and flexibility in hydropower and wind power both on- and offshore.

- The contract with Nel is the first important step towards realizing our ambitions of 2 GW of green hydrogen and securing production capacity for several of our hydrogen projects, says Rynning-Tønnesen. Volldal is very happy to have Statkraft on its customer list.

- Statkraft is Europe's largest supplier of renewable energy and a well-reputed and highly knowledgeable renewable company with an ambitious growth agenda, and we are very proud that they have chosen us as a supplier of green hydrogen technology, says Volldal.

- With this and other orders, Nel strengthens its position as a leading supplier and exporter of hydrogen equipment, which is crucial for the green shift in Europe and internationally, and for the development of new green jobs in Norway, says Volldal.

PRESS RELEASE | May 24, 2023

NSA and Partners Identify China State-Sponsored Cyber Actor Using Built-in Network Tools When Targeting U.S. Critical Infrastructure Sectors

The National Security Agency (NSA) and partners have identified indicators of compromise (IOCs) associated with a People's Republic of China (PRC) state-sponsored cyber actor using living off the land techniques to target networks across U.S. critical infrastructure.

“Cyber actors find it easier and more effective to use capabilities already built into critical infrastructure environments. A PRC state-sponsored actor is living off the land, using built-in network tools to evade our defenses and leaving no trace behind,” said **Rob Joyce**, NSA Cybersecurity Director. “That makes it imperative for us to work together to find and remove the actor from our critical networks.”

To assist network defenders to hunt and detect this type of PRC actor malicious activity on their systems, NSA is leading U.S. and Five Eyes partner agencies in publicly releasing the [“People's Republic of China State-Sponsored Cyber Actor Living off the Land to Evade Detection” Cybersecurity Advisory \(CSA\)](#) today. The partner agencies include:

- U.S. Cybersecurity and Infrastructure Security Agency (CISA)
- U.S. Federal Bureau of Investigation (FBI)
- Australian Cyber Security Centre (ACSC)
- Canadian Centre for Cyber Security (CCCS)
- New Zealand National Cyber Security Centre (NCSC-NZ)
- United Kingdom National Cyber Security Centre (NCSC-UK)

“For years, China has conducted operations worldwide to steal intellectual property and sensitive data from critical infrastructure organizations around the globe,” said **Jen Easterly**, CISA Director. “Today’s advisory, put out in conjunction with our US and international partners, reflects how China is using highly sophisticated means to target our nation’s critical infrastructure.” This joint advisory will give network defenders more insights into how to detect and mitigate this malicious activity. At the same time, we must recognize the agility and capability of PRC cyber actors, and continue to focus on strong cybersecurity practices like network segmentation and ongoing investments in promoting the resilience of critical functions under all conditions. As our nation’s cyber defense agency, CISA stands ready to aid any organization affected and we encourage all organizations to visit our webpage for guidance and resources to make their networks more resilient.”

“The FBI continues to warn against China engaging in malicious activity with the intent to target critical infrastructure

organizations and use identified techniques to mask their detection,” said **Bryan Vorndran**, the FBI’s Cyber Division Assistant Director. “We, along with our federal and international partners, will not allow the PRC to continue to use these unacceptable tactics. The FBI strives to share information with our private sector partners and the public to ensure they can better protect themselves from this targeted malicious activity.”

“It is vital that operators of critical national infrastructure take action to prevent attackers hiding on their systems, as described in this joint advisory with our international partners.” said **Paul Chichester**, NCSC Director of Operations. “We strongly encourage UK essential service providers to follow our guidance to help detect this malicious activity and prevent persistent compromise.”

“The Canadian Centre for Cyber Security joins its international partners in sharing this newly identified threat and accompanying mitigation measures with critical infrastructure sectors,” said **Sami Khoury**, Head of the Canadian Centre for Cyber Security. “The interconnected nature of our infrastructures and economies highlights the importance of working together with our allies to identify and share real-time threat information.”

The CSA provides an overview of hunting guidance and associated best practices. It includes examples of the actor’s commands and detection signatures. The authoring agencies also includes a summary of indicators of compromise (IOC) values, such as unique command-line strings, hashes, file paths, exploitation of CVE-2021-40539 and CVE-2021-27860 vulnerabilities, and file names commonly used by this actor.

As one of their primary tactics, techniques, and procedures (TTP) of living off the land, the PRC actor uses tools already installed or built into a target’s system. This allows the actor to evade detection by blending in with normal Windows systems and network activities, avoiding endpoint detection and response (EDR) products, and limiting the amount of activity that is captured in default logging configurations.

NSA recommends network defenders apply the detection and hunting guidance in the CSA, such as logging and monitoring of command line execution and WMI events, as well as ensuring log integrity by using a hardened centralized logging server, preferably on a segmented network.

Defenders should also monitor logs for Event ID 1102, which is generated when the audit log is cleared.

The behavioral indicators noted in the CSA can also be legitimate system administration commands that appear in benign activity. Defenders must evaluate matches to determine the significance, applying their knowledge of the system and baseline behavior.

10 min read

Volt Typhoon targets US critical infrastructure with living-off-the-land techniques

By

• [Microsoft Threat Intelligence](#)

May 24, 2023

• [Microsoft 365 Defender](#)

Microsoft has uncovered stealthy and targeted malicious activity focused on post-compromise credential access and network system discovery aimed at critical infrastructure organizations in the United States. The attack is carried out by Volt Typhoon, a state-sponsored actor based in China that typically focuses on espionage and information gathering. Microsoft assesses with moderate confidence that this Volt Typhoon campaign is pursuing development of capabilities that could disrupt critical communications infrastructure between the United States and Asia region during future crises.

Volt Typhoon has been active since mid-2021 and has targeted critical infrastructure organizations in Guam and elsewhere in the United States. In this campaign, the affected organizations span the communications, manufacturing, utility, transportation, construction, maritime, government, information technology, and education sectors. Observed behavior suggests that the threat actor intends to perform espionage and maintain access without being detected for as long as possible.

To achieve their objective, the threat actor puts strong emphasis on stealth in this campaign, relying almost exclusively on [living-off-the-land techniques](#) and hands-on-keyboard activity. They issue commands via the command line to (1) collect data, including credentials from local and network systems, (2) put the data into an archive file to stage it for exfiltration, and then (3) use the stolen valid credentials to maintain persistence. In addition, Volt Typhoon tries to blend into normal network activity by routing traffic through compromised small office and home office (SOHO) network equipment, including routers, firewalls, and VPN hardware. They have also been observed using custom versions of open-source tools to establish a command and control (C2) channel over proxy to further stay under the radar.

In this blog post, we share information on Volt Typhoon, their campaign targeting critical infrastructure providers, and their tactics for achieving and maintaining unauthorized access to target networks. Because this activity relies on valid accounts and living-off-the-land binaries (LOLBins), detecting and mitigating this attack could be challenging. Compromised accounts must be closed or changed. At the end of this blog post, we share more mitigation steps and best practices, as well as provide details on how Microsoft 365 Defender detects malicious and suspicious activity to protect organizations from such stealthy attacks. The National Security Agency (NSA) has also published

a [Cybersecurity Advisory \[PDF\]](#) which contains a hunting guide for the tactics, techniques, and procedures (TTPs) discussed in this blog.

As with any observed nation-state actor activity, Microsoft has directly notified targeted or compromised customers, providing them with important information needed to secure their environments. To learn about Microsoft's approach to threat actor tracking, read [Microsoft shifts to a new threat actor naming taxonomy](#).

Figure 1. Volt Typhoon attack diagram

Initial access

Volt Typhoon achieves initial access to targeted organizations through internet-facing Fortinet FortiGuard devices. Microsoft continues to investigate Volt Typhoon's methods for gaining access to these devices.

The threat actor attempts to leverage any privileges afforded by the Fortinet device, extracts credentials to an Active Directory account used by the device, and then attempts to authenticate to other devices on the network with those credentials.

Volt Typhoon proxies all its network traffic to its targets through compromised SOHO network edge devices (including routers). Microsoft has confirmed that many of the devices, which include those manufactured by ASUS, Cisco, D-Link, NETGEAR, and Zyxel, allow the owner to expose HTTP or SSH management interfaces to the internet. Owners of network edge devices should ensure that management interfaces are not exposed to the public internet in order to reduce their attack surface. By proxying through these devices, Volt Typhoon enhances the stealth of their operations and lowers overhead costs for acquiring infrastructure.

Post-compromise activity

Once Volt Typhoon gains access to a target environment, they begin conducting hands-on-keyboard activity via the command line. Some of these commands appear to be exploratory or experimental, as the operators adjust and repeat them multiple times.

Volt Typhoon rarely uses malware in their post-compromise activity. Instead, they rely on living-off-the-land commands to find information on the system, discover additional devices on the network, and exfiltrate data. We describe their activities in the following sections, including the most impactful actions that relate to credential access.

Credential access

If the account that Volt Typhoon compromises from the Fortinet device has privileged access, they use that account to perform the following credential access activities.

Microsoft has observed Volt Typhoon attempting to dump credentials [through the Local Security Authority Subsystem Service \(LSASS\)](#). The LSASS process memory space contains hashes for the current user's [operating system \(OS\) credentials](#).

Figure 2. Volt Typhoon command to dump LSASS process memory, encoded in Base64 Figure 3. Decoded Base64 of Volt Typhoon command to dump LSASS process memory

Volt Typhoon also frequently attempts to use the command-line tool *Ntdsutil.exe* to create installation media from domain controllers, either remotely or locally. These media are intended to be used in the [installation of new domain controllers](#). The files in the installation media contain usernames and password hashes that the threat actors can crack offline, giving them valid domain account credentials that they could use to regain access to a compromised organization if they lose access.

Figure 4. Volt Typhoon command to remotely create domain controller installation media
Figure 5. Volt Typhoon command to locally create domain controller installation media

Discovery

Microsoft has observed Volt Typhoon discovering system information, including file system types; drive names, size, and free space; running processes; and open networks. They also attempt to discover other systems on the compromised network using PowerShell, Windows Management Instrumentation Command-line (WMIC), and the *ping* command. In a small number of cases, the threat actors run system checks to determine if they are operating within a virtualized environment.

Collection

In addition to operating system and domain credentials, Volt Typhoon dumps information from local web browser applications. Microsoft has also observed the threat actors staging collected data in password-protected archives.

Command and control

In most cases, Volt Typhoon accesses compromised systems by signing in with valid credentials, the same way authorized users do. However, in a small number of cases, Microsoft has observed Volt Typhoon operators creating proxies on compromised systems to facilitate access. They accomplish this with the built-in [netsh portproxy](#) command.

Figure 6. Volt Typhoon commands creating and later deleting a port proxy on a compromised system

In rare cases, they also use custom versions of open-source tools Impacket and Fast Reverse Proxy (FRP) to establish a C2 channel over proxy.

Compromised organizations will observe C2 access in the form of successful sign-ins from unusual IP addresses. The same user account used for these sign-ins may be linked to command-line activity conducting further credential access. Microsoft will continue to monitor Volt Typhoon and track changes in their activity and tooling.

Mitigation and protection guidance

Mitigating risk from adversaries like Volt Typhoon that rely on valid accounts and living-off-the-land binaries (LOLBins) is particularly challenging. Detecting activity that uses normal sign-in channels and system binaries requires behavioral monitoring. Remediation requires closing or changing credentials for compromised accounts.

What to do now if you're affected

- Close or change credentials for all compromised accounts. Depending on the level of collection activity, many accounts may be affected. Identify LSASS dumping and domain controller installation media creation to identify affected accounts.
- Examine the activity of compromised accounts for any malicious actions or exposed data.

Defending against this campaign

- Mitigate the risk of compromised valid accounts by enforcing strong multi-factor authentication (MFA) policies using hardware security keys or Microsoft Authenticator. Passwordless sign-in, password expiration rules, and deactivating unused accounts can also help mitigate risk from this access method.
- Reduce the attack surface. Microsoft customers can turn on the following [attack surface reduction](#) rules to block or audit some observed activity associated with this threat:
 - [Block credential stealing](#) from the Windows local security authority subsystem (lsass.exe). [Block process creations](#) originating from PSEXEC and WMI commands. Some organizations may experience compatibility issues with this rule on certain server systems but should deploy it to other systems to prevent lateral movement originating from PsExec and WMI.
 - [Block execution](#) of potentially obfuscated scripts.
- Harden the LSASS process by enabling [Protective Process Light \(PPL\) for LSASS](#) on Windows 11 devices. New, enterprise-joined Windows 11 (22H2 update) installs have this feature enabled by default. In addition, enable [Windows Defender Credential Guard](#), which is also turned on by default for organizations using the Enterprise edition of Windows 11.
- Turn on [cloud-delivered protection](#) in Microsoft Defender Antivirus to cover rapidly evolving attacker tools, techniques, and behaviors such as those exhibited by Volt Typhoon.
- Run [endpoint detection and response \(EDR\) in block mode](#) so that Microsoft Defender for Endpoint can block malicious artifacts, even when your non-Microsoft antivirus does not detect the threat, or when Microsoft Defender Antivirus is running in passive mode. EDR in block mode works behind the scenes to remediate malicious artifacts that are detected post-compromise.

Detection details and hunting queries

Microsoft Defender Antivirus

Microsoft Defender Antivirus detects attempted post-compromise activity. Note, however, that these alerts can also be triggered by threat activity unrelated to Volt Typhoon. Turn on cloud-delivered protection to cover rapidly evolving attacker tools and techniques. Cloud-based machine learning protections block most new and unknown threats.

- Behavior:Win32/SuspNtdsUtilUsage.A
- Behavior:Win32/SuspPowershellExec.E
- Behavior:Win32/SuspRemoteCmdCommandParent.A
- Behavior:Win32/UNCFilePathOperation
- Behavior:Win32/VSSAmsiCaller.A
- Behavior:Win32/WinrsCommand.A
- Behavior:Win32/WmiSuspProcExec.J!se
- Behavior:Win32/WmicRemote.A
- Behavior:Win32/WmiprvseRemoteProc.B

Microsoft Defender for Endpoint

Microsoft Defender for Endpoint alerts with the following titles can indicate possible presence of Volt Typhoon activity.

- Volt Typhoon threat actor detected

The following alerts may also be associated with Volt Typhoon activity. Note, however, that these alerts can also be triggered by threat activity unrelated to Volt Typhoon.

- A machine was configured to forward traffic to a non-local address
- Ntdsutil collecting Active Directory information
- Password hashes dumped from LSASS memory
- Suspicious use of wmic.exe to execute code
- Impacket toolkit

Hunting queries

Microsoft 365 Defender

Volt Typhoon's post-compromise activity usually includes distinctive commands. Searching for these can help to determine the scope and impact of an incident.

Find commands creating domain controller installation media

This query can identify domain controller installation media creation commands similar to those used by Volt Typhoon.

```
DeviceProcessEvents
| where ProcessCommandLine has_all ("ntdsutil", "create full", "pro")
```

Find commands establishing internal proxies

This query can identify commands that establish internal proxies similar to those used by Volt Typhoon.

```
DeviceProcessEvents
| where ProcessCommandLine has_all ("portproxy", "netsh", "wmic", "process call create", "v4tov4")
```

Find detections of custom FRP executables

This query can identify alerts on files that match the SHA-256 hashes of known Volt Typhoon custom FRP binaries.

```
AlertEvidence
| where SHA256 in
('baeffeb5fdef2f42a752c65c2d2a52e84fb57efc906d981f89dd518c314e231c',
'b4f7c5e3f14fb57be8b5f020377b993618b6e3532a4e1eb1eae9976d4130cc74',
'4b0c4170601d6e922cf23b1caf096bba2fade3dfcf92f0ab895a5f0b9a310349',
'c0fc29a52ec3202f71f6378d9f7f9a8a3a10eb19acb8765152d758aded98c76d',
'd6ab36cb58c6c8c3527e788fc9239d8dcc97468b6999cf9ccd8a815c8b4a80af',
'9dd101caee49c692e5df193b236f8d52a07a2030eed9bd858ed3aaccb406401a',
'450437d49a7e5530c6fb04df2e56c3ab1553ada3712fab02bd1eeb1f1adbc267',
'93ce3b6d2a18829c0212542751b309dacbdc8c1d950611efe2319aa715f3a066',
'7939f67375e6b14dfa45ec70356e91823d12f28bbd84278992b99e0d2c12ace5',
'389a497f27e1dd7484325e8e02bbdf656d53d5cf2601514e9b8d8974befddf61',
'c4b185dbca490a7f93bc96eefb9a597684fdf532d5a04aa4d9b4d4b1552c283b',
'e453e6efc5a002709057d8648dbe9998a49b9a12291dee390bb61c98a58b6e95',
'6036390a2c81301a23c9452288e39cb34e577483d121711b6ba6230b29a3c9ff',
'cd69e8a25a07318b153e01bba74a1ae60f8fc28eb3d56078f448461400baa984',
'17506c2246551d401c43726bdaec800f8d41595d01311cf38a19140ad32da2f4',
'8fa3e8fdbaa6ab5a9c44720de4514f19182adc0c9c6001c19cf159b79c0ae9c2',
'd17317e1d5716b09cee904b8463a203dc6900d78ee2053276cc948e4f41c8295',
'472ccfb865c81704562ea95870f60c08ef00bcd2ca1d7f09352398c05be5d05d',
'3e9fc13fab3f8d8120bd01604ee50ff65a40121955a4150a6d2c007d34807642')
```

Microsoft Sentinel

Below are some suggested queries to assist Microsoft Sentinel customers in identifying Volt Typhoon activity in their environment:

- [LSASS process memory dumping](#)
- [Potential Impacket execution](#)
- [Domain controller installation media creation commands similar to those used by Volt Typhoon](#)
- [Commands that set up internal proxies resembling the ones employed by Volt Typhoon](#)

Microsoft customers can use the TI Mapping analytics (a series of analytics all prefixed with 'TI map') to automatically match the malicious hash indicators (related to the custom Fast Reverse Proxy binaries) mentioned in this blog post. These analytics are part of the Threat Intelligence solution and can be installed from the Microsoft Sentinel Content Hub if not currently deployed. More details on the Content Hub can be found here: <https://learn.microsoft.com/azure/sentinel/sentinel-solutions-deploy>.

Indicators of compromise (IOCs)

The below list provides IOCs observed during our investigation. We encourage our customers to investigate these indicators in their environments and implement detections and protection to identify past related activity and prevent future attacks against their systems.

Volt Typhoon custom FRP executable (SHA-256):

- baeffeb5fdef2f42a752c65c2d2a52e84fb57efc906d981f89dd518c314e231c
- b4f7c5e3f14fb57be8b5f020377b993618b6e3532a4e1eb1eae9976d4130cc74
- 4b0c4170601d6e922cf23b1caf096bba2fade3dfcf92f0ab895a5f0b9a310349
- c0fc29a52ec3202f71f6378d9f7f9a8a3a10eb19acb8765152d758aded98c76d
- d6ab36cb58c6c8c3527e788fc9239d8dcc97468b6999cf9ccd8a815c8b4a80af
- 9dd101caee49c692e5df193b236f8d52a07a2030eed9bd858ed3aaccb406401a
- 450437d49a7e5530c6fb04df2e56c3ab1553ada3712fab02bd1eeb1f1adbc267
- 93ce3b6d2a18829c0212542751b309dacbdc8c1d950611efe2319aa715f3a066
- 7939f67375e6b14dfa45ec70356e91823d12f28bbd84278992b99e0d2c12ace5
- 389a497f27e1dd7484325e8e02bbdf656d53d5cf2601514e9b8d8974befddf61
- c4b185dbca490a7f93bc96eefb9a597684fdf532d5a04aa4d9b4d4b1552c283b
- e453e6efc5a002709057d8648dbe9998a49b9a12291dee390bb61c98a58b6e95
- 6036390a2c81301a23c9452288e39cb34e577483d121711b6ba6230b29a3c9ff
- cd69e8a25a07318b153e01bba74a1ae60f8fc28eb3d56078f448461400baa984
- 17506c2246551d401c43726bdaec800f8d41595d01311cf38a19140ad32da2f4
- 8fa3e8fdbaa6ab5a9c44720de4514f19182adc0c9c6001c19cf159b79c0ae9c2
- d17317e1d5716b09cee904b8463a203dc6900d78ee2053276cc948e4f41c8295
- 472ccfb865c81704562ea95870f60c08ef00bcd2ca1d7f09352398c05be5d05d
- 3e9fc13fab3f8d8120bd01604ee50ff65a40121955a4150a6d2c007d34807642



IFIC Monthly Investment Fund Statistics – April 2023

Mutual Fund and Exchange-Traded Fund Assets and Sales

May 23, 2023 (Toronto) – The Investment Funds Institute of Canada (IFIC) today announced investment fund net sales and net assets for April 2023.

Mutual fund assets totalled \$1.905 trillion at the end of April 2023. Assets increased by \$22.2 billion or 1.2% compared to March 2023. Mutual funds recorded net redemptions of \$4.6 billion in April 2023.

ETF assets totalled \$344.1 billion at the end of April 2023. Assets increased by \$6.9 billion or 2.1% compared to March 2023. ETFs recorded net sales of \$2.1 billion in April 2023.

Mutual Fund Net Sales/Net Redemptions (\$ Millions)*

Asset Class	Apr. 2023	Mar. 2023	Apr. 2022	YTD 2023	YTD 2022
Long-term Funds					
Balanced	(3,941)	(4,167)	(2,055)	(13,453)	6,365
Equity	(2,782)	(1,982)	(259)	(5,010)	8,473
Bond	853	497	(1,752)	7,177	(2,068)
Specialty	274	427	(204)	1,462	845
Total Long-term Funds	(5,597)	(5,225)	(4,270)	(9,824)	13,614
Total Money Market Funds	1,020	1,823	(196)	5,242	196
Total	(4,576)	(3,402)	(4,466)	(4,582)	13,810

Mutual Fund Net Assets (\$ Billions)*

Asset Class	Apr. 2023	Mar. 2023	Apr. 2022	Dec. 2022
Long-term Funds				
Balanced	912.1	903.7	943.6	880.6
Equity	692.7	682.9	682.2	649.6
Bond	235.9	233.5	239.2	222.7
Specialty	24.2	23.7	22.2	22.3
Total Long-term Funds	1,864.9	1,843.9	1,887.2	1,775.2
Total Money Market Funds	40.4	39.2	26.9	34.5
Total	1,905.3	1,883.1	1,914.1	1,809.8

* Please see below for important information regarding this data.

ETF Net Sales/Net Redemptions (\$ Millions)*

Asset Class	Apr. 2023	Mar. 2023	Apr. 2022	YTD 2023	YTD 2022
Long-term Funds					
Balanced	141	156	125	528	913
Equity	(319)	3,784	539	4,103	10,157
Bond	860	2,297	322	3,445	1,512
Specialty	252	(190)	(115)	867	780
Total Long-term Funds	934	6,047	871	8,944	13,363
Total Money Market Funds	1,153	795	91	3,594	779
Total	2,087	6,842	962	12,538	14,142

ETF Net Assets (\$ Billions)*

Asset Class	Apr. 2023	Mar. 2023	Apr. 2022	Dec. 2022
Long-term Funds				
Balanced	13.3	13.0	11.9	12.0
Equity	213.4	209.3	202.1	194.9
Bond	85.5	84.4	75.8	80.4
Specialty	12.2	11.8	13.0	10.2
Total Long-term Funds	324.3	318.4	302.9	297.5
Total Money Market Funds	19.7	18.7	7.1	16.3
Total	344.1	337.1	310.0	313.7

* Please see below for important information regarding this data.

IFIC direct survey data (which accounts for approximately 85% of total mutual fund industry assets and approximately 83% of total ETF industry assets) is complemented by estimated data to provide comprehensive industry totals.

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

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*** Important Information Regarding Investment Fund Data:**

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

About IFIC

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For more information please contact:

Pira Kumarasamy
Senior Manager, Communications and Public Affairs
pkumarasamy@ific.ca
416-309-2317

SAF

Dan Tsubouchi @Energy_Tidbits · 4h
#ChinaCovid

...

"wave of Covid-19 reinfection in China has limited impact on everyday life"

limited impact on everyday life implies some impact on the China recovery.

Top respiratory expert reminds predicted peak is still 65 million per week at end of June, but reminds "it's... [Show more](#)

everyday life

By Global Times [Published](#) May 26, 2022 06:28 PM

A rising number of COVID-19 reinfection cases in China have caused public concern over whether there will be a new wave of the virus. Experts have noted that the epidemic situation is on a slow upward trend, but there will be limited disruption on everyday life.

Many people have developed symptoms including sore throats and are concerned that they may have been reinfected. Wang Guqiang, director of the infectious disease department of Peking University First Hospital, said there were many potential reasons behind a sore throat and that individuals should remain objective, according to the National Health Commission.

COVID-19, influenza and other bacterial infections can all cause a sore throat and should all be treated differently. If a person becomes infected with COVID-19, the person should be treated as a COVID-19 patient, according to Wang.

The current prevalent XBB variant is a recombinant variant of Omicron, which has higher transmissibility and immune escape capacity than the Omicron variants prevalent in previous waves, but there was no significant change in pathogenicity, health authorities stated.

"It will be the epidemiological feature of COVID-19 that people may become reinfected at different times, but there will be less impact toward their lives," Lu Hongzhou, head of the Third People's Hospital of Shenzhen told the Global Times on Friday.

We just experienced a peak infection about half year ago, with more than 90 percent of the population becoming infected, building wide herd immunity. Although the effect of herd immunity will gradually decrease as new variant strains emerge, herd immunity still plays an effective "barrier" role in preventing the virus spreading, Lu explained.

It has been about six months since the last mass wave of infections, and many people's antibodies are gradually disappearing, and it is suggested to take booster shots based on the vaccine plan issued by the national health authorities, Lu said.

In Beijing alone, the top five diseases reported in the city for the week between May 15 and 21 were COVID-19, other infectious diarrheal diseases, influenza, tuberculosis and viral hepatitis, accounting for 98.9 percent of the reported cases of notifiable infectious diseases, according to the Beijing CDC on May 24.

It is a rule of science that a second wave of COVID-19 has occurred in every country monitoring the epidemic without exception, Zhang Wenhong, director of Infectious Diseases Department at Huashan Hospital, Fudan University told media recently, media reported. As public immunity is weakened and the virus mutates, however, it has less severe symptoms generally and there is more effective response from medical resources, according to Zhang.

Zhang said that it should not be an obstacle to people's normal life and people should not overreact.

China's top respiratory disease expert Zhong Nanshan said that China-developed vaccines covering the XBB variant are expected to be available soon. We have predicted that there was a small peak in COVID-19 infections in late April and early May, Zhong said during the Greater Bay Area Science Forum on May 22, according to the Shenzhen Economic Daily.

The country is predicted to face a peak at the end of June, with about 65 million people infected with COVID-19 each week, according to Zhong. But Zhong also noted that it's predicted based on model calculation, which might not be accurate.

— Dan Tsubouchi @Energy_Tidbits · May 24

China Covid watch

Not a confidence builder for increasing China restricting/controlling info on new Covid wave.

...

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D



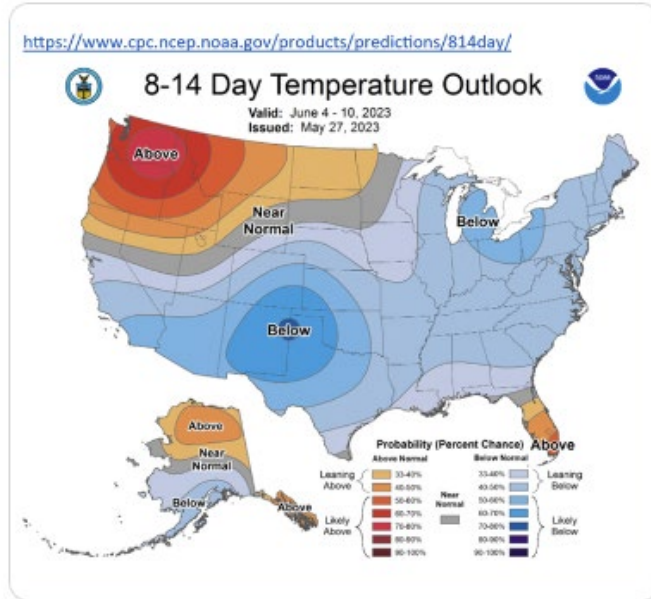
Dan Tsubouchi @Energy_Tidbits · 17h

Updated @NOAA 8-14 day temp outlook for June 4-10 calls for cooler than normal temps.

No real temp driven #NatGas demand in NE & Great Lakes ie. daily highs NYC ~25c, Chicago 21-24c.

But south is still warm ie. Dallas daily highs 31-33c. Houston 31-34c.

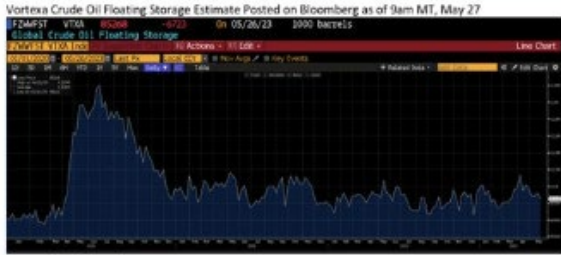
#OOTT



2 1 3 1,672

SAF

Dan Tsubouchi @EnergyTidbits · 22h
 #Vortexa crude #Oil floating storage at May 26 est 85.27 mmb, -6.72 mmb WoW vs revised up May 19 of 91.99 mmb. See table, -28.17 mmb vs 04/07, is this Iran selling floating storage, RUS oil being rerouted after floating & being transferred? Thx @Vortexa @business. #OOTT



Source: Bloomberg, Vortexa

Posted May 27, 9am MT					May 20, 9am MT					May 13, 9am MT							
ID	30	04	04	YTD	17	ID	30	04	04	YTD	17	ID	30	04	04	YTD	17
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Source: Bloomberg, Vortexa

Region	May 26/23	May 19/23	W/W	Original Posted	Recent Peak
				May 19/23	Apr 7/23
Asia	43.89	56.00	-12.31	50.77	59.43
Europe	4.73	3.83	0.90	4.34	23.80
Middle East	6.13	5.12	0.99	3.94	4.89
West Africa	6.33	6.85	-0.12	5.84	5.97
US Gulf Coast	1.09	0.00	1.09	0.00	3.17
Other	23.12	20.39	2.73	20.21	16.18
Global Total	85.27	91.99	-6.72	84.90	113.44

Vortexa crude oil floating storage posted on Bloomberg, 9am MT on May 27

Source: Vortexa, Bloomberg

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

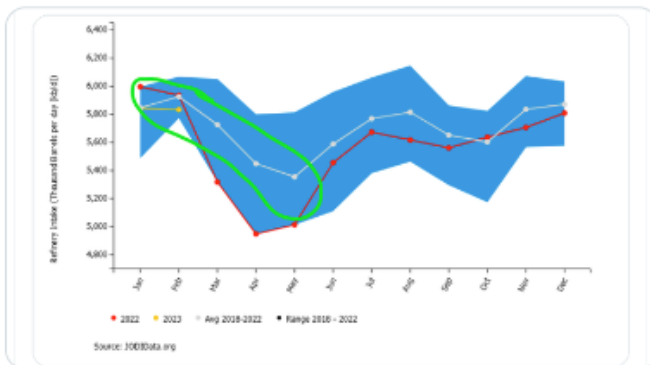
4 3 18 2,476

SAF

Dan Tsubouchi @EnergyTidbits · May 27
 Should see RUS #oil production cuts hit Jun/Jul/Aug physical markets & why cuts hasn't hit exports yet.

Normal seasonal pattern of RUS refinery turnarounds reduce oil intake by ~500,000 b/d from Feb thru May.

Thx @JODI_Data
 #OOTT



6 5 28 4,556

SAF Dan Tsubouchi  @EnergyTidbits · May 26 ⋮
#Yellen new forecast just now.

need to raise or suspend debt limit by June 5

"Based on the most recent available data, we now estimate that Treasury will have insufficient resources to satisfy the government's obligations if Congress has not raised or suspended the debt limit... [Show more](#)

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SAF Dan Tsubouchi  @EnergyTidbits · May 26 ⋮
Was Novak's "i do not think there will be any new steps" really signaling break away if Abdulaziz wants something more at #OPEC+ June 4 meet?

OR was it just to signal RUS isn't happy with the red carpet for Zelensky at Arab Summit as @kdourian reminds with @sean_evers?

Think... [Show more](#)



SAF Group created transcript of comments by Kate Dourian (FEI, MEEES Contributing Editor & Non-Resident Fellow, The Arab Gulf States Institute in Washington) to Sean Evers (Managing Partner Gulf Intelligence) on the Gulf Intelligence PODCAST: Daily Energy Markets - May 25th. [LINK](#)

Item in "italics" are SAF Group created transcript.

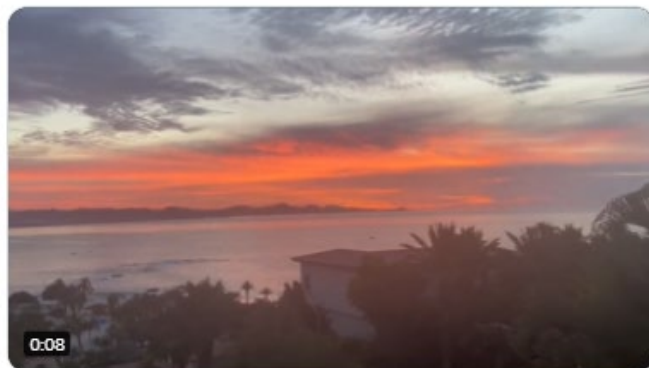
Evers: "... and the Russians saying the opposite, no more cuts are necessary... How long do you think these two can coexist. Saudi Arabia willing to do what it takes to prop up the market, keep the shorts out. And Russia saying whatever it takes and pumping whatever it can". Dourian: "I think that both of them need each other. I don't think they can afford to allow this alliance to fall apart. *But I also think Saudi Arabia basically runs the show. You know, I think, we have seen Novak say in the past whatever my colleague Prince Abdulaziz says, I go along with it. I think it may be part of the strategy to keep the market guessing.*"

Dourian: *"Going back to this Russian situation [referring to the Novak comments on OPEC+ June 4 meeting]. I think, it may be that Russia, Moscow was not very pleased with the fact that Zelensky was invited to the Arab Summit. I mean that was quite something, wasn't it? Which is sort of a bit of a surprise considering they're so, sorry my phone is buzzing. So I think it may have been the response came after that basically saying, hang on a second. But they've made their bed. They have formed this alliance with Russia on OPEC regardless of politics. And I don't think it's about to fall apart. I may be wrong. But we've seen it in the past, yes they didn't agree. But I think, if anything Russia needs, Putin doesn't have that many friends. He's got this powerful Saudi prince who is his ally."*



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

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SAF Dan Tsubouchi  @EnergyTidbits · May 26 ⋮
another great sunrise looking around to the hotel strip in San Jose del Cabo.



🗨 1 🔄 ❤️ 9 📊 1,258 📤

SAF Dan Tsubouchi  @Energy_Tidbits · May 25 ...
Novak followup statement to TASS on OPEC+ excludes his earlier 
Izvestia statement "i do not think there will be any new steps"

Rather said to TASS ""This is a systematic approach, which will also be the basis of the OPEC+ meeting in June, where, if necessary, decisions can be... [Show more](#)

<https://tass.ru/ekonomika/17847369>

25 May, 13:25,
Updated May 25, 14:56 p.m.



Novak said that OPEC+ at a meeting on June 4 will determine what is best for the market

The Deputy Prime Minister of the Russian Federation noted that the OPEC+ meetings are aimed at jointly discussing the state of the oil market and reaching consensus on further actions that should be implemented to achieve [balance](#)

MOSCOW, May 25. /TASS/. OPEC+ countries at the meeting, which is scheduled for June 4, will determine what is best for the oil market, while adhering to the vector of previous decisions. Russia will participate in this discussion together with alliance partners, Russian Deputy Prime Minister Alexander Novak told reporters on Thursday. Novak noted that the OPEC+ meetings are aimed at jointly discussing the state of the oil market and reaching consensus on further actions that should be implemented to achieve balance.

"This is a systematic approach, which will also be the basis of the OPEC+ meeting in June, where, if necessary, decisions can be made. We do not agree with the fact that Bloomberg has distorted the information, on the basis of an incomplete citation declaring Russia's disagreement with the possibility of making decisions at a future meeting. Russia will participate in the discussion together with partners in order to determine what is best for the market, while adhering to all previous decisions," he said.

Earlier, Novak, in an interview with [Izvestia](#), said that he did not expect any new steps at the upcoming OPEC+ meeting, which will be held in person. Bloomberg, in the context of the Deputy Prime Minister's statement, wrote that "Russia has downplayed the likelihood of a new OPEC+ production cut."

SAF Dan Tsubouchi  @Energy_Tidbits · May 25
 Novak on OPEC+
"I do not think there will be any new steps because just a month ago,.... voluntary reduction of #Oil productionan additional 1.6 mmb/d will be ..."

 1  7  13  7,340 



Dan Tsubouchi @Energy_Tidbits · May 25
4 days until Alberta May 29 election, advanced voting started Tues.



UCP in front. But always the undecided wildcard.

A big wildcard for the turnout. Many in central/northern Alberta are rightly focused on wildfires and their families/homes.

thx @338Canada.
#OTT





Dan Tsubouchi @Energy_Tidbits · May 25



Germany slips into recession in Q1/23

See 05/23 tweet

High electricity costs driven by combination of #EnergyTransition and cost of replacing cheap RUS #NatGas with #LNG are hurting industrial production.

Hopefully Habeck's subsidies keep some German industry from going... [Show more](#)

— Dan Tsubouchi @Energy_Tidbits · May 23

Is it the #EnergyTransition or cost of replacing cheap RUS #NatGas via pipeline with #LNG or both?

Regardless, Germany needs to provide \$4.4b PER YEAR to help subsidize high electricity price to try to keep industry from going elsewhere.

Thx @RihamKousa.
#OTT

<https://www.reuters.com/world/europe/germany-earmark-4-bln-euros-annually-power-subsidy-economy-minister-2023-05-22/>

Germany to earmark 4 bln euros annually for power subsidy - economy minister

Reuters
May 22, 2023 2:34 PM EDT Updated a day ago



German Economy and Climate Protection Minister Robert Habeck attends an economic committee meeting on the current reporting on personnel policy and staffing by the Federal Ministry of Economics in Berlin, Germany May 10, 2023. REUTERS/Michele Jacobus

BERLIN, May 22 (Reuters) - Germany plans to earmark around 4 billion euros (\$4.4 billion) annually to subsidize electricity prices for energy-intensive industries, to support an industrial move away from fossil fuels and discourage firms from moving offshore.

The government last year introduced electricity and gas price caps to shield industry and households from rising energy prices, but companies in Germany say electricity prices are still too high.

"We want the industry ... to stay home in Germany and be given a transformation perspective. The industry electricity price is intended for this," Economy Minister Robert Habeck said in a news conference on Monday.

The government is discussing the details of the subsidy which the finance ministry opposes, but Habeck said the subsidy could cap prices at 6 cents per kilowatt hours (kWh), covering 80% of industrial firms' consumption.

"This price will be calculated on the basis of the average exchange electricity price and then calculated down," Habeck said, adding that this would give companies incentive to look for cheaper energy prices from renewable energy sources on the market.

The subsidy, which would cost around 25 to 30 billion euros, should be phased out by 2030 and would be financed through the Economic Stabilisation Fund (ESF), originally introduced in 2020 to deal out after lockdowns during the pandemic.

Earlier this month, the German finance ministry pushed back against the economy ministry's subsidy plan as the budget did not allow for it and existing funds could not be redirected.

Small and medium-sized firms in energy-intensive industries such as the metal and chemical sectors will be able to benefit from the support, he said.

"If we don't pay this price, we may no longer have future industrial anchors in these energy-intensive areas in Germany and that would be a loss," Habeck added.

(\$1 = 0.9084 euros)
Reporting by Riham Kousa, Editing by Bernadette Baum

Reply icon | Retweet 4 | Like 3 | Views 3,466 | Share icon

SAF **Dan Tsubouchi** @Energy_Tidbits · May 25
#OilDemand

Chinese consumers trading down ie. spending less when out. BUT 19% more Chinese traveled during May Day holiday ie. more travelers means more #Gasoline #Diesel consumption.

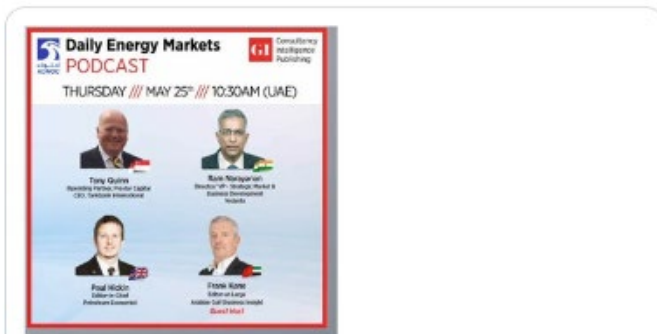
See 📺 clip of @shaunrein to @tanvirgill2 @sam_vadas
#OOT



2 4 22 4,450

SAF **Dan Tsubouchi** @Energy_Tidbits · May 25
Big Russian #Oil #PetroleumProducts flows into UAE (Fujairah), blended that changes certificate of origin & "moved to all sorts of strange places you would never expect to be exported to" says @TankchatTony to @FrankKaneDubai @gulf_intel.

See 📺 SAF Group transcript
#OOT



SAF Group created transcript of comments by Tony Quinn (Operating Partner, Prostar Capital & CEO Tankbank International) with host Frank Kane (Editor at Large, Arabian Gulf Business Insights) on Gulf Intelligence PODCAST: Daily Energy Markets May 25th. [LINK](#)

Items in "quotes" are SAF Group created [transcript](#)

At 18:30 min mark, Quinn "I have to be careful what I say because I get in trouble here, but the oil [Russian oil] is still flowing. I'm sitting amongst 11 terminals here [their terminals in Fujairah] and probably 50% of them are full of Russian product. So, it's still moving... But I think in general, I'm seeing more flows. I'm seeing more traders taking Russian flows directly into here. We have seen product moving here to all sorts of strange places that you would never expect to be exported to. So there are big movements particularly out of this part of the Gulf of Russian crude. It's all being diverted. We have a different customer base. Whereas we used to bunker the Kuwaitis, now we're unloading the Russians."

At 20:15 min mark, Kane asking if some the product diverting elsewhere, some of it must be Russian ending up in Europe. Quinn "... offloading of product here or any terminal in the world, you have to remember that, once they blend that product, the certificate of origin changes. So you're suddenly dealing with a product that has a new origin. So if that's here, it suddenly became a UAE product wherever it was before. So all of those things happen. So looking at the flows, you really don't know where it comes from."

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

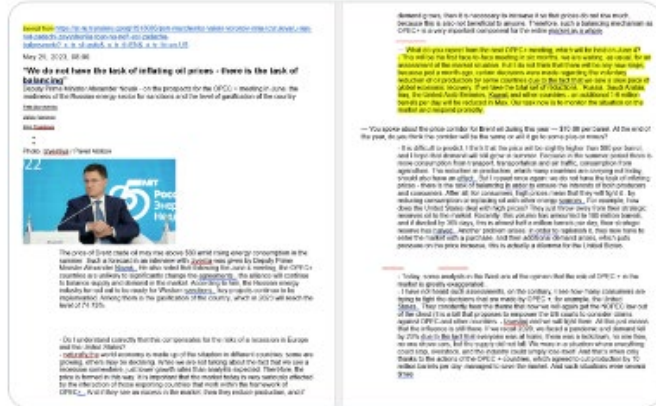
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Dan Tsubouchi @EnergyTidbits · May 25
Novak on OPEC+



"I do not think there will be any new steps because just a month ago,.... voluntary reduction of #Oil productionan additional 1.6 mmb/d will be reduced in May. Our task now is to monitor the situation on the market and respond promptly"

See [Izvestia...](#) [Show more](#)



5 6 16 11.5K

Dan Tsubouchi @EnergyTidbits · May 24
#CyberAttack



"Microsoft has uncovered stealthy and targeted malicious activity focused on post-compromise credential access and network system discovery aimed at critical infrastructure organizations in the United States. The attack is carried out by Volt Typhoon, a...[Show more](#)

3 2 1,404



Dan Tsubouchi @Energy_Tidbits · May 24
#AlbertaElection2023



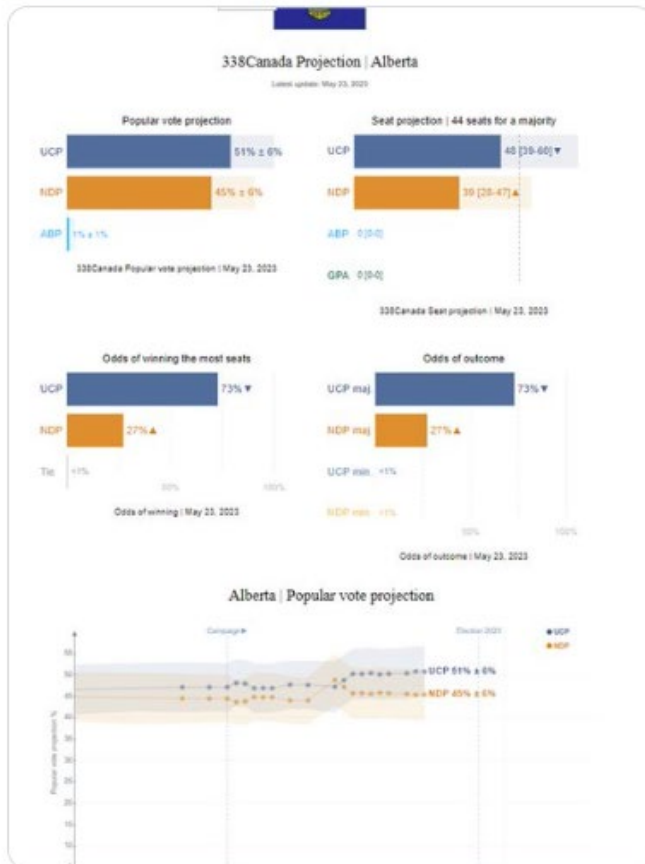
No lead reversal this week.

Rather UCP widened lead with 5 days to May 29 election.

To early to celebrate or commiserate. Big wildcard in any election comes down to undecided or those not firmly in one camp.

Advanced voting started yesterday.

#OTT



2

8

1,556



SAF Dan Tsubouchi  @Energy_Tidbits · May 24 ...
WOW!

For those not near their laptop, @EIAgov just released its #Oil #Gasoline #Distillates inventory as of May 19 at 8:30am MT. Table below compares EIA data vs @business expectations and vs @APIenergy yesterday.

Prior to release, WTI was \$74.05.

#OOTT

Oil/Products Inventory May 19: EIA, Bloomberg Survey Expectations, API			
(million barrels)	EIA	Expectations	API
Oil	-12.56	2.00	-6.80
Gasoline	-2.05	-1.60	-6.39
Distillates	-0.56	0.50	-1.77
	-15.17	0.90	-14.96

Note: Oil is commercial so builds in a draw of 1.6 mmb in SPR for the May 19 week
Note: Included in the oil data, Cushing had a 1.76 mmb build for May 19 week
Source EIA, Bloomberg
Prepared by SAF Group <https://safgroup.ca/news-insights/>

6 3 24 2,189 

SAF Dan Tsubouchi  @Energy_Tidbits · May 24 ...
China Covid watch.

Difficult to know if the sudden shut down of a lot of different entertainments venues is from spread of Covid or comedian joke on Chinese military reports @onlyyoontv @MelissaLeeCNBC

Either way, its an indicator China recovery is slowing/stalling
#OOTT



5 10 2,469 

SAF Dan Tsubouchi  @Energy_Tidbits · May 24 ...
China Covid watch

Not a confidence builder for increasing China restricting/controlling info on new Covid wave.

Unfortunately, lack of or control of info to world only gets more worrying there is more to the story.

Thx @onlyyoontv @MelissaLeeCNBC
#OOTT



SAF Dan Tsubouchi  @Energy_Tidbits · May 23

 China on market watch for next several weeks as to how severe is this new wave of Covid.

State media: China's top respiratory disease expert says new COVID-19 wave will likely peak in late June...

  1  4  5,199 



Dan Tsubouchi @Energy_Tidbits · May 23

China on market watch for next several weeks as to how severe is this new wave of Covid.

State media: China's top respiratory disease expert says new COVID-19 wave will likely peak in late June at ~65 million cases per week.

Thinks 2nd peak won't be as bad as 1st, now will... [Show more](#)

[https://www.theguardian.com/world/2022/05/23/china](#)

Vaccine countering XBB variant to be released to the market: top respiratory expert
By [FT staff reporter](#) 23 May 2022 11:07 AM



China's top respiratory disease expert says the new wave of COVID-19 cases will peak in late June at about 65 million cases per week, officials say

Zhang made the remarks at the 2022 Disease Day New Edition Forum in Haidian in Guangzhou, South China's Guangdong Province, where he also revealed that new virus variants to counter the XBB variant will soon be released to the market.

A small group of COVID-19 infections at the end of April and a spike May were "pathogenic", [China's top respiratory disease expert says](#)

[China's top respiratory disease expert says the new wave of COVID-19 cases will peak in late June at about 65 million cases per week](#)

Zhang Guosheng, a respiratory expert at Peking University First Hospital, told [The Global Times](#) on Monday.

But Zhang warned vulnerable people such as people with underlying diseases to take measures to prevent infection.

At the forum, Zhang highlighted developing effective vaccines to counter the XBB variant as being critical, since the XBB variant has become a mainstream strain of COVID-19 in China.

China has approved two COVID-19 vaccines to counter the newly emerged dominant XBB variant and the new vaccines will soon be released to the market, Zhang revealed at the forum.

He said that these new vaccines will likely be approved soon. "On developing more effective vaccines, we are working ahead of other countries."

[Vaccine to counter XBB variant to be released to the market: top respiratory expert](#)

The proportion of infections related to the variant continues to rise, the China CDC said.

The currently circulating XBB strain variant is a second set of Omicron. The data shows that its transmissibility and immune escape ability are stronger than those of the early circulating Omicron variant, but there is no significant change in its pathogenicity, according to the National Health Commission.

China published by China CDC finally show that among 38 COVID-19 infections, 134 were infected for the second time, with a larger proportion having reinvented become photo.

The vaccines based on original variants are not designed to prevent infection by new variants. The former expert because sufficiently effective neutralizing antibodies against the mutated strains, who was the new generation of variants, which are more frequent, can induce sufficient and effective antibodies. "On Luogang's chair man of Beijing-based BioCofTech, said.

Effective vaccines need to be updated just as vaccines against the flu are adjusted to target new variants each year. He noted.

Dan Tsubouchi @Energy_Tidbits · Apr 24



#Oil markets back on China virus info digging again?

China state media

China CDC found 42 cases of XBB.1.16 new variant, ...

2 5 7 7,476

SAF

Dan Tsubouchi @Energy_Tidbits · May 23

Is it the #EnergyTransition or cost of replacing cheap RUS #NatGas via pipeline with #LNG or both?

Regardless, Germany needs to provide \$4.4b PER YEAR to help subsidize high electricity price to try to keep industry from going elsewhere.


Thx @RihamKousa.

#OOTT

<https://www.reuters.com/world/europe/germany-earmark-4-4-bln-euro-annually-power-subsidy-economy-minister-2023-05-22/>

Germany to earmark 4 bln euros annually for power subsidy - economy minister

Reuters
May 22, 2023 2:34 PM MDT Updated a day ago



German Economy and Climate Protection Minister Robert Habeck attends an economic committee meeting on the current reporting on personnel policy and staffing by the Federal Ministry of Economics in Berlin, Germany May 10, 2023. REUTERS/Michele Janssen

BERLIN, May 22 (Reuters) - Germany plans to earmark around 4 billion euros (\$4.4 billion) annually to subsidize electricity prices for energy-intensive industries, to support an industrial move away from fossil fuels and discourage firms from leaving the country.

The government last year introduced electricity and gas price caps to shield industry and households from rising energy prices, but companies in Germany say electricity prices are still too high.

"We want the industry ... to stay home in Germany and be given a transformation perspective. The industry electricity price is intended for this," Economy Minister Robert Habeck said in a news conference on Monday.

The government is discussing the details of the subsidy which the finance ministry opposes, but Habeck said the subsidy could cap prices at 6 cents per kilowatt hours (kWh), covering 80% of industrial firms' consumption.

"This price will be calculated on the basis of the average exchange electricity price and then calculated down," Habeck said, adding that this would give companies incentive to look for cheaper energy prices from renewable energy sources on the market.

The subsidy, which would cost around 25 to 30 billion euros, should be phased out by 2030 and would be financed through the Economic Stabilisation Fund (ESF), originally introduced in 2020 to help out firms hit hard during the pandemic.

Earlier this month, the German finance ministry pushed back against the economy ministry's subsidy plan as the budget did not allow for it and existing funds could not be redirected.

Small and medium-sized firms in energy-intensive industries such as the metal and chemical sectors will be able to benefit from the support, he said.

"If we don't pay this price, we may no longer have future industrial sectors in these energy-intensive areas in Germany and that would be a loss," Habeck added.

(\$1 = 0.9084 euros)
Reporting by Riham Alkousa; Editing by Bernadette Baum

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SAF **Dan Tsubouchi** @Energy_Tidbits · May 23
Hydrogen, the fuel of the future, can't take off until there are buyers.

Saudi Energy Minister Abdulaziz "who is going to be the offtaker?" no clear policies for offtaker to step up & pay the price needed for producer to develop the #hydrogen.

no surprise, see 🗨️ 05/10/23 tweet,... [Show more](#)



SAF Group created transcript of comments by Saudi Energy Minister Abdulaziz at Qatar Economic Forum on May 23, 2023. [\[LINK\]](#)

Items in "italics>" are SAF Group created transcript.

At 40:00 min mark, Abdulaziz "... including by the way hydrogen. People talk about hydrogen as the fuel of the future. I ask you who is going to be the *offtaker*. And where is the price for hydrogen today? We go around, you go around talking about blue, green, purple, pink hydrogen but, in the final analysis, who is going to be the *offtaker*, what would be the price of hydrogen. We're not talking oil. We're not talking gas. We're talking about THE so-called cleanest of cleanest future fuel of the future. And yet you don't have the *offtakers*. But again there are no clear policies for the *offtaker* to say I have been given an incentives package that will enable me to buy that hydrogen, even green hydrogen for that price for producers to produce it. If this is happening to *hydrogen*, And what we saw in Europe in terms of power, last autumn, rescued by a gift of *god* that winter was not as cold as was projected. How in earth one can envisage an energy future with all this uncertainty and, more important, with all these big questions that are not being answered."

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

SAF **Dan Tsubouchi** @Energy_Tidbits · May 10
#NatGas #LNG will be needed for a very long time.



#SaudiAramco CEO, #BlueHydrogen cost ~\$250/boe! "very difficult to identify any off-take agreement in EU" "Even the customers in Japan and..."

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SAF Dan Tsubouchi @Energy_Tidbits · May 23
"i think they (#IEA) have proven it takes a special talent to be consistently wrong. And that's exactly what they have done" Saudi Energy Minister Abdulaziz.

Bigger concern is why did IEA miss? Was it indirect political pressure on IEA for forecasts that set up desired political... [Show more](#)



SAF Group created transcript of comments by Saudi Energy Minister Abdulaziz with Bloomberg's Francine Lacqua at Qatar Economic Forum on May 23, 2023. [\[LINK\]](#)

At 41:40 min mark, Lacqua "... why have we seen prices [Oil] where they are?" Abdulaziz "... we were as OPEC+ blamed in October, blamed in April. Who has the right numbers? Who gauged the situation in a much more, I would say, responsible attentive way? And what was our endeavour? Were we price gaugers or market stabilizers? I think over the last 6, 7 months, we've proven to be a responsible regulatory institution. Had we had not that, look at what happened to the other sources of energy in 2022. What we need to do in the future continue delivering on our authority. Because if you check what happened with all these so-called projections and forecasts. I hope you can just give me a few seconds. Look who did the most in trying to bring forecasts and data and projections that really, really created most of the volatility that we had in 2022 and continue to do so - there is an organization called the IEA. I think they have proven that it really takes a special talent to be consistently wrong. And that's exactly what they have done. Who put together that Russia production will decline 3 million, what happened? None of that happened. Policies were made in the form of SPR draws as a result of that. What was the use for it. Look at where we are now. Energy security is being shackled. We're running out of capacities because countries are not investing, both in oil and gas. We have a very funny trajectory of what demand will be. So if you are a hedger as we are, we have to take action to pre-empt any possibility of further volatility and that's the challenge that we are forthrightly accepting the challenge. And we will continue attending to the challenge.

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

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SAF Dan Tsubouchi @Energy_Tidbits · May 23
Will there be a repeat of summer 2022 US air travel chaos?

Good test this Memorial Day Weekend.

@UnitedAirlines_ CEO Kirby: Busiest Memorial Day weekend air travel ever with 2.9 mm passengers, +16% YoY. "It's going to be a busy summer"

#OOTT #JetFuel



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SAF

Dan Tsubouchi @EnergyTidbits · May 23

"There is going to be a big shortage in the gas predominantly due to the #energytransition

"You need a proper energy mix and it can't be driven by politics and politicians wanting to get in the seat to say this is the solution"

Warning from Qatar Energy Minister al-Kaabi.

Thx... [Show more](#)



Qatar Energy Minister Al-Kaabi comments at Qatar Economic Forum on May 23, 2023 as reported by Gulf Times https://twitter.com/GulfTimes_QATAR/status/1660924223878037504

"You need a mix of all energy sources and people need to realize that you need oil, gas and renewables. People talk about renewables as it's a fix-all. If you look at renewables you can generate electricity from wind and solar but you can't make plastics or anything, making achieving self-sufficiency. So solving renewables just generating electricity does not solve the problem; you need a proper energy mix and it can't be driven by politics and politicians wanting to get in the seat to say this is the solution."

HE Saad bin Khalid Al-Kaabi, Minister of State for Energy, Qatar Energy

"Regarding the gas development and the future for the supply and demand, there is going to be a big shortage in the gas predominantly due to the energy transition push that is really aggressive without studying it properly because if you look at economic stability and environment sustainability, they're not mutually exclusive. You need to have both. And if you push some countries into doing that, that doesn't help humanity in general."

"I'm thrilled that finally G7 have said that we need more LNG to be supplied to the world. We've been saying this for the last decade. We're producing 77 million tons per annum of LNG today and we're going to go to 120 million tons in Qatar and we're on-track. All the contracts have been awarded to start in 2024. We have about 18 million tons that will be coming from our project in the US. SO we're adding 65 million tons to the world's needs when people said we didn't need it. I'm happy that G7 said we need more."

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Dan Tsubouchi @Energy_Tidbits · May 23
"So I think there's a chance you're still going to have rates ticking up and not to 3.78. I'm talking about 4.25, 4.5, 5, 6 maybe even 7. I would be prepared for higher rates if I were someone." Jamie Dimon yesterday.

Many companies & people are nowhere near prepared for this.... [Show more](#)

Bloomberg TV @bloombergTV
"Everyone should be prepared for rates going higher from here," says JP Morgan Chase and CEO Jamie Dimon during JP Morgan Investor Day [View at News360](#)

3:04 PM · May 22, 2023 · 1.2K Views

SAF Group created transcript of comments by JP Morgan CEO Jamie Dimon from JP Morgan Investor Day on May 22, 2023 [LINK](#)

"You're already seeing credit tighten up. The easiest way for a bank to retain capital is not to make the next loan. I think you are going to see that. And I think everyone should be prepared for rates going higher from here. That 5% is not enough in Fed Funds. If I've been advising this to clients and banks. You should be prepared for 6, 7. You should be prepared for, on the 10-year bond, I also feel this way. The Fed doesn't control the 5 or 10-year rate. They control the overnight rate. So while they've been raising the overnight rate, there's still too much liquidity in the system, which is why stocks are high, bond spreads are still. You all talk about recession not reflected in bond spreads. So I think there's a chance you're still going to have rates ticking up and not to 3.78. I'm talking about 4.25, 4.5, 5, 6 maybe even 7. I would be prepared for higher rates if I were someone. Whether it happens or not, we don't know, but you should be prepared for it."

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

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SAF

Dan Tsubouchi @Energy_Tidbits · May 23
"I would just tell them to watch out"
"I keep advising them that they will be ouching. They did ouch in April":

Warning from "The Man", Saudi Energy Minister Abdulaziz to #Oil market speculators.

Thx @business #OOTT

Bloomberg Live @bloomberglive · "I keep advising them that they will be ouching — they did ouch in April." H.R.H. Prince Abdulaziz bin Salman Al Saud says [@QatarEconForum](#) [View at News360](#)

2:18 PM · May 23, 2023

SAF Group created transcript of comments by Saudi Energy Minister Abdulaziz at Qatar Economic Forum on May 23, 2023.

"I don't worry. I think I save my neck by not worrying and I focus on thinking. So I don't worry. I think speculators like I think in any market, they are there to stay. I keep advising them that they will be ouching. They did ouch in April. I don't have to show my cards. I'm not a poker player and I don't know poker, how to play poker but I got it from a movie somewhere. I would just tell them watch out."

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

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SAF Dan Tsubouchi  @Energy_Tidbits · May 22 ...
Hong Kong #Covid

Supposed to be reassuring with anticipated "small wave" is no cause for alarm and serious symptoms down to 7% from 10% few weeks ago.

But still need to watch with 5-10 deaths daily and hospitals near 100%.

Thx @HeungSammy

#OOTT



[scmp.com](https://www.scmp.com)

Hong Kong's Covid wave has peaked, government adviser says
Professor Lau Yu-lung from HKU says city experienced an expected 'small wave' and there is no need for concern as most have immunity.

  2  5  2,287 

SAF

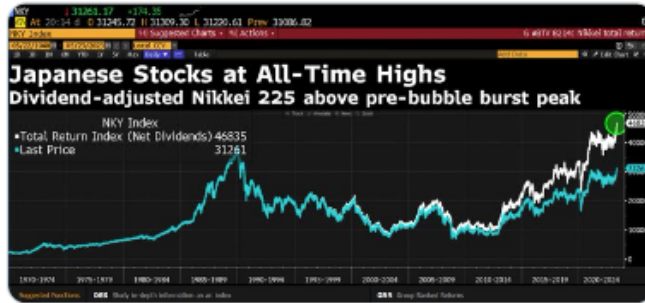
Dan Tsubouchi @Energy_Tidbits · May 22
The #WarrenBuffett effect at work in Japan.

...

@business Japanese stocks at all-time high. Dividend-adjusted Nikkei 225 above pre-bubble burst peak.

Nikkei
+4.9% in 2021 post Covid.
-9.4% in 2022
+7.0% 01/01/23 to Buffett 04/12 @BeckyQuick interview
+12.0% 04/12 to 05/23.

#OOTT



SAF Dan Tsubouchi @Energy_Tidbits · May 18
 The #WarrenBuffett effect is still working.
 @business "foreigners loving Japanese stocks. positive flows into equities for 7th straight week"

2 4 3,568

SAF Dan Tsubouchi @Energy_Tidbits · May 22 ...
 Chinese domestic air travel giving back last month's gains.

Scheduled domestic flights -2.8% WoW to 94,417 is basically back to month ago levels ie. Pre May Day Holiday.

Scheduled "over" next 4-wk is set to increase to 100,177 flights is -15.9% vs 119,180 flights that were... [Show more](#)



2 5 9 7,552

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Dan Tsubouchi  @EnergyTidbits · May 21

...

[#DebtCeiling](#).

""my assessment is that the odds of reaching June 15th, while being able to pay all of our bills, is quite low" says [@SecYellen](#) to [@chucktodd](#) [@MeetThePress](#).

[#OOTT](#)



[nbcnews.com](https://www.nbcnews.com)

Meet the Press - May 21, 2023

Rep. Byron Donalds (R-Fla.), Gov. Roy Cooper (D-N.C.), Treasury Secretary Janet Yellen, Dan Balz, Carlos Curbelo, Carol Lee and ...



SAF

Dan Tsubouchi  @Energy_Tidbits · May 21

...

no surprise to see a steady stream of rafters enjoying 28C temps down the Elbow River in #Calgary. it would be a better day if @coreconn could get a break and have a couple putts drop.



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