

SUMMARY

Asia-Pacific: Prices near \$11/mn Btu

Prices for spot LNG deliveries to northeast Asia softened on thin market activity amid the ongoing holiday season. Some demand for summer deliveries emerged from Thailand, but this was not enough to support prices

Atlantic: AGC June steps lower

Near-curve Argus Gulf Coast (AGC) prices for fob loadings at export terminals in the US Gulf slipped on Tuesday, as European delivered markets fell

Europe: Des prices shed value

European delivered prices fell on the first trading day in May, following drops at the Dutch TTF gas hub

Thailand's PTT seeks May-July LNG cargoes

Thailand's PTT is seeking four LNG cargoes for delivery over May-July through a tender closing on 3 May

Sakhalin 2 faces months of maintenance

Russia's far east, Gazprom-led Sakhalin 2 project plans extensive maintenance on oil and LNG infrastructure over the next few months

Abu Dhabi's Adnoc switches export plant to Ruwais

Abu Dhabi's Adnoc expects to build its planned LNG project in Al-Ruwais Industrial City in Abu Dhabi instead of Fujairah, the firm said on Tuesday

Adnoc, TotalEnergies in 3-year LNG supply deal

Abu Dhabi's Adnoc has signed a three-year agreement to supply TotalEnergies with LNG

CONTENTS

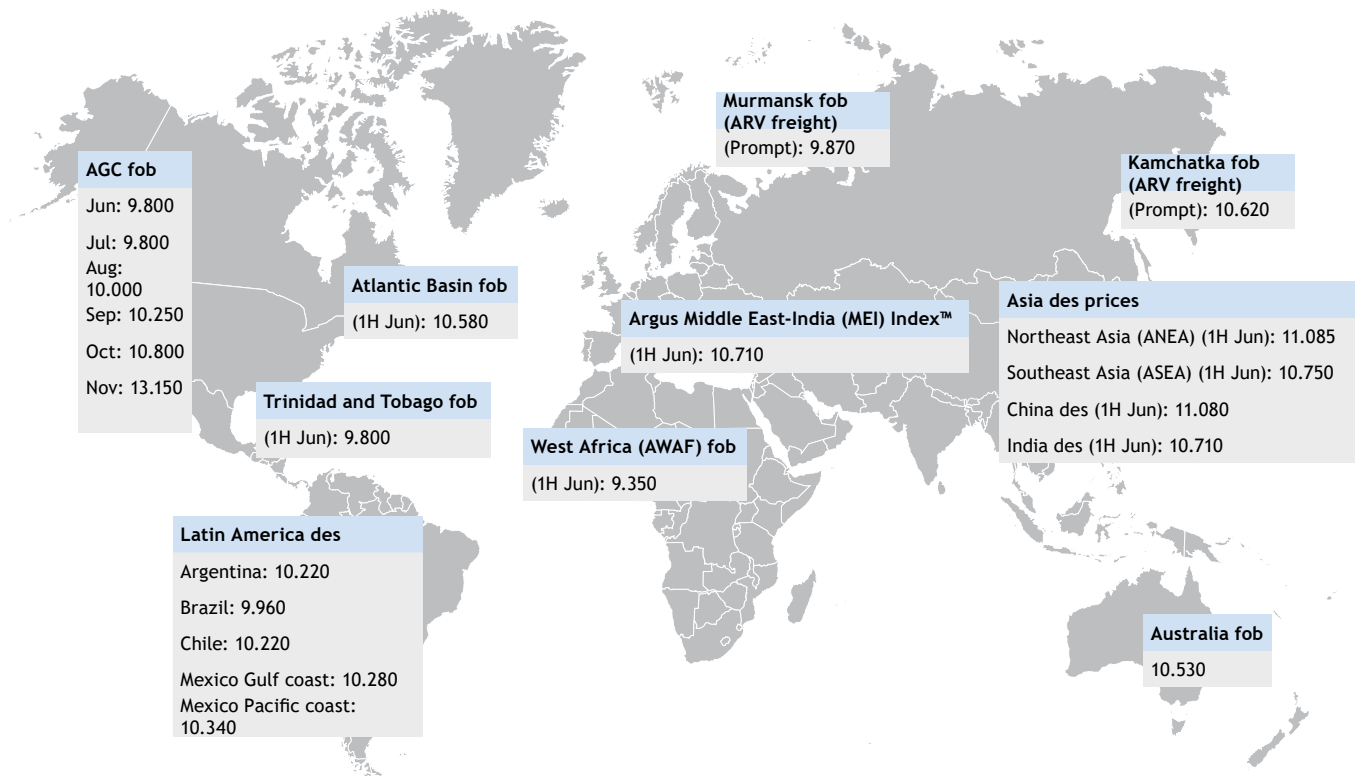
Asia-Pacific prices and market commentary	3-4
Atlantic prices and market commentary	5-6
Europe prices and market commentary	7-8
Open bids, offers and recent deals	9
Freight rates, costs and netbacks	11-13
News and analysis	14

FEATURED LNG PRICES

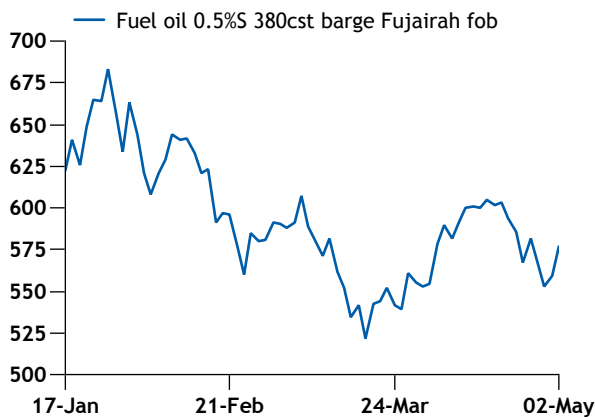
Global Front-Month and Index Prices				
Delivery Point	Midpoint	Change	Trend	Month Index
Argus Gulf Coast fob	9.800	-0.150	▼	9.800
Trinidad & Tobago fob	9.800	-0.200	▼	10.598
Argus West Africa fob	9.525	-0.450	▼	10.523
Mexico des (Pacific) (prompt)	10.340	-0.100	▼	na
Mexico des (Gulf) (prompt)	10.280	-0.210	▼	na
Brazil des (prompt)	9.960	-0.210	▼	na
Argentina des (prompt)	10.220	-0.240	▼	na
Chile des (prompt)	10.220	-0.230	▼	na
Murmansk fob (prompt) (ARV freight)	9.870	-0.350	▼	na
NW Europe fob (reload)	11.850	-0.400	▼	12.659
NW Europe des	10.050	-0.400	▼	10.909
Iberia fob (reload)	10.550	-0.400	▼	11.409
Iberia des	9.950	-0.400	▼	10.809
Italy des	10.150	-0.400	▼	11.009
Greece des	10.250	-0.400	▼	11.109
Turkey des	10.250	-0.400	▼	11.109
Middle east fob (Asia-Pacific bound) (prompt)	10.320	+0.050	▲	na
Middle East fob (Europe bound) (prompt)	9.460	-0.340	▼	na
Middle east des	10.760	-0.285	▼	11.361
India des	10.760	-0.435	▼	11.412
ASEA des	10.785	-0.165	▼	11.445
ANEA des	11.143	-0.165	▼	11.874
China des	11.140	-0.160	▼	11.880
Kamchatka fob (prompt) (ARV freight)	10.620	+0.060	▲	na
Australia fob (prompt)	10.530	+0.050	▲	na

Argus prompt LNG freight day rates			\$/day
	Price	±	Month index
Steam turbine - west of Suez	21,500	nc	21,500
Steam turbine - east of Suez	25,000	nc	25,000
TFDE - west of Suez	35,000	nc	35,000
TFDE - east of Suez	47,000	nc	47,000
Two-stroke - west of Suez	59,500	nc	59,500
Two-stroke - east of Suez	68,500	nc	68,500

Argus Round Voyage Rates			\$/day
	Price	+/-	Month index
ARV1: Australia-Northeast Asia	55,000	nc	55,000
ARV2: USGC-Northwest Europe	44,500	nc	44,500
ARV3: USGC-Northeast Asia	46,000	nc	46,000



Middle East bunker fuel - Fujairah

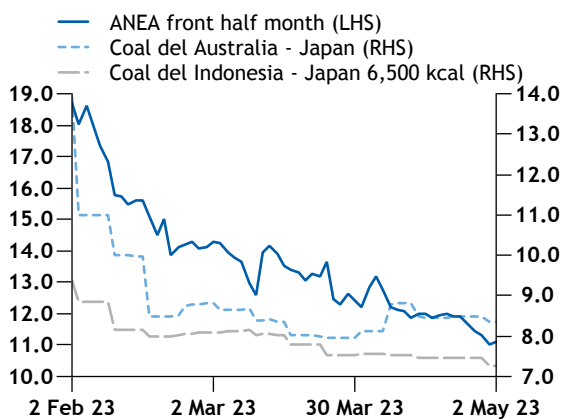


\$/t

Japan oil-linked des LNG (1 May 2023)		\$/mn Btu
Contract	Price	±
Jun	12.88	nc
Jul	12.61	+0.11
Aug	12.40	+0.14
Sep	12.20	+0.17
Oct	12.07	+0.19
Nov	11.94	+0.21
3Q23	12.40	+0.14
4Q23	11.97	+0.21
1Q24	11.69	+0.13
2Q24	11.52	+0.12
2024	11.46	+0.12
2025	11.00	+0.09

Japan: Coal vs LNG

\$/mn Btu



Japan-oil linked	\$/mn Btu
Jul	12.61

Benchmark price snapshot		\$/mn Btu
Market	Delivery	Price
NBP	Jun	10.638
Zeebrugge	Jun	11.457
Peg Nord	Jun	11.102
PSV	Jun	12.796
PVB	Jun	10.770
TTF	Jun	12.062
Nymex Henry Hub (1 May)	Jun	2.318
Argus JCC Index (Fixed) (\$/bl)	Feb	87.8752
Argus JCC Index (Preliminary) (\$/bl)	Mar	85.3519

MARKET COMMENTARY

Asia Pacific: Prices near \$11/mn Btu

Prices for spot LNG deliveries to northeast Asia softened on thin market activity amid the ongoing holiday season. Some demand for summer deliveries emerged from Thailand, but this was not enough to support prices.

The ANEA price, the *Argus* assessment for spot LNG deliveries to northeast Asia, moved lower by around 15-20¢/mn Btu across first-half June and first-half July. The second-half July ANEA debuted at \$11.475/mn Btu, a 10¢/mn Btu premium to first-half July.

Activity within the Asia-Pacific region was thin amid the ongoing golden week and extended labour day holidays in both China and Japan this week.

Selling indications fell by around 18-22¢/mn Btu, likely as sellers took their cue from falling European gas hub prices. The month-ahead Dutch TTF contract price fell by around 17¢/mn Btu on the day to \$12.371/mn Btu for May on 28 April. Buying indications fell by a slightly smaller margin of around 13-16¢/mn Btu.

The contract opened only slightly higher at \$12.561/mn Btu at 2pm Singapore time (6am GMT) on 2 May.

Thailand's state-owned PTT issued a tender to buy [four cargoes for delivery](#) over 21-22 May, 26-27 June, 1-2 July and 12-13 July to the 11.5mn t/yr Map Ta Phut terminal on a des basis. The tender will close on 3 May.

But the four cargoes that PTT is seeking are unlikely to support prices for now, especially as the firm likely has plenty of supply options that will suit its requirements, market participants said. PTT is expected to pay prices close to or at a slight discount to prices for deliveries to northeast Asia for now, they added.

The market is keeping an eye mainly on the potential for demand to continue emerging from southeast and south Asia mainly. In contrast, demand for summer deliveries especially is expected to remain limited from northeast Asian buyers as they continue to sit on higher-than-average LNG stocks.

Milder temperatures over the coming weeks are also expected to suppress LNG consumption levels, reducing the urgency among northeast Asian countries to stock up on supplies anytime soon.

The Japan Meteorological Agency has forecasted an at least 50pc chance of above-normal temperatures over 6-12 May, but is expecting average temperatures further into the

Argus Asia-Pacific des spot LNG					\$/mn Btu
	Delivery	Bid	Offer	Midpoint	±
Northeast Asia (ANEA™)	1H Jun	10.65	11.52	11.085	-0.155
	2H Jun	10.76	11.64	11.200	-0.175
	1H Jul	10.94	11.81	11.375	-0.190
	2H Jul	11.04	11.91	11.475	na
China	1H Jun	10.65	11.51	11.080	-0.155
	2H Jun	10.77	11.63	11.200	-0.165
	1H Jul	10.97	11.83	11.400	-0.165
	2H Jul	11.08	11.94	11.510	na
India	1H Jun	10.36	11.06	10.710	-0.240
	2H Jun	10.46	11.16	10.810	-0.630
	1H Jul	10.65	12.13	11.390	nc
	2H Jul	10.76	11.46	11.110	na

ANEA forward curve		\$/mn Btu
Contract	Price	±
Jun	11.143	-0.165
Jul	11.425	-0.140
Aug	12.125	-0.075
Sep	12.875	-0.025
Oct	13.625	+0.075
Nov	15.375	+0.225
Dec	16.375	+0.450
3Q23	12.142	-0.080
4Q23	15.125	+0.250
1Q24	16.375	+0.750
2Q24	15.375	+0.750

month across 13-26 May, likely limiting LNG consumption levels in the country.

India's state-owned refiner IOC issued a buy tender for a delivery further out into the third quarter of the year during 23-27 September to the 5mn t/yr Dhamra LNG terminal. The tender will close on 2 May. This is likely as the firm seeks to take advantage of the relatively lower prices for the forward months.

The *Argus*-assessed forward curve for physically delivered LNG to northeast Asia was at \$12.875/mn Btu for September on 2 May. Indian LNG importers may expect to pay a price at a slight discount to prices for deliveries to northeast Asia for now, market participants said.

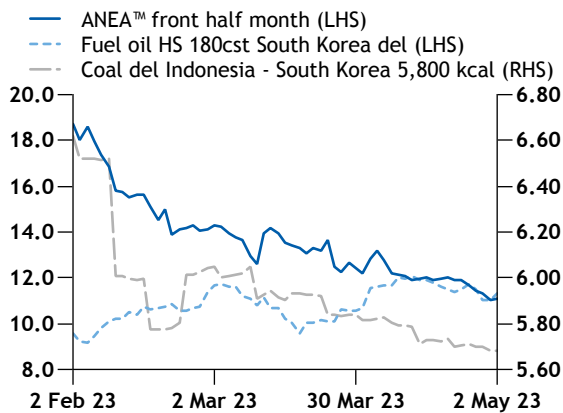
Change to China trucked LNG price publication schedule

Following consultation, *Argus* will not publish China domestic truck-delivered LNG price assessments on 3 May.

ASIA-PACIFIC COMPETING FUELS

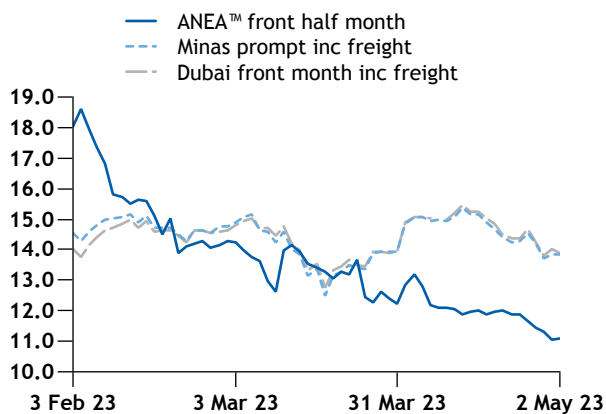
South Korea: Fuel oil, coal vs LNG

\$/mn Btu



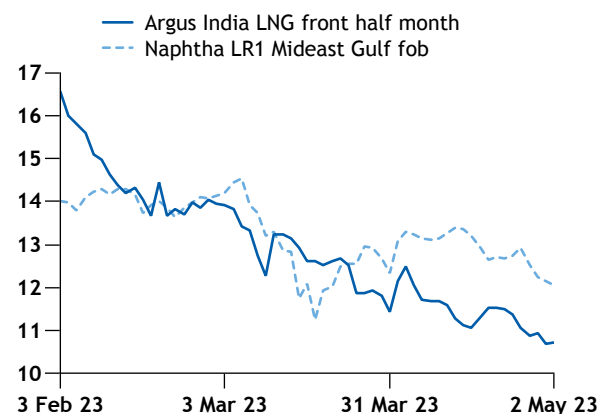
Japan: Crude vs LNG

\$/mn Btu



India: Naphtha vs LNG

\$/mn Btu



LNG vs conventional marine fuel		\$/mn Btu
weekly avg., week ending 28 Apr		
LNG des southeast Asia (ASEA) half-month net calorific value-adjusted		12.336
Singapore 0.5S fuel oil delivered		14.800
Singapore 0.1S MGO delivered		17.216
Singapore 3.5S fuel oil delivered		12.184

OTHER ASIA-PACIFIC PRICES

Argus Middle East des spot LNG				\$/mn Btu
Delivery	Bid	Offer	Midpoint	±
1H Jun	10.36	11.06	10.710	-0.240
2H Jun	10.46	11.16	10.810	-0.330
1H Jul	10.65	11.35	11.000	-0.390
2H Jul	10.76	11.46	11.110	na

Argus Middle East-India (MEI) Index				\$/mn Btu
Delivery	Bid	Offer	Mid	±
1H Jun	10.36	11.06	10.710	-0.240
2H Jun	10.46	11.16	10.810	-0.480
1H Jul	10.65	11.74	11.195	-0.195
2H Jul	10.76	11.46	11.110	na

Key netforwards and netbacks				\$/mn Btu
	Delivery	Price		±
Southeast Asia (ASEA)	1H Jun	10.750		-0.100
	2H Jun	10.820		-0.230
	1H Jul	10.980		-0.250
	2H Jul	11.070		na
Middle East fob (Asia-Pacific bound)	Prompt	10.320		+0.050
Middle East fob (Europe-bound)	Prompt	9.460		-0.340
Kamchatka fob (ARV freight)	Prompt	10.620		+0.060
Australia Gladstone fob	Prompt	10.520		+0.050
(Unit: A\$/GJ)	Prompt	14.920		-0.160
Australia Gladstone oil indexed fob	Prompt	12.930		nc
(Unit A\$/GJ)	Prompt	18.330		-0.300
Australia fob	Prompt	10.530		+0.050

China carbon emission allowance (CEA) price				
28 Apr 23	CNY/t	±	USD/t	±
CEA Closing Price	55.00	nc	8.63	nc
Open Trade Volumes, t	10	-100		

Data source: Shanghai Environment and Energy Exchange

AUSTRALIAN GAS PRICES

Argus Wallumbilla Index (AWX) - Friday 28 Apr 2023					
Delivery	Units	Bid	Offer	Midpoint	±
May	A\$/GJ	13.83	15.50	14.667	-0.166
May	\$/mn Btu	9.60	10.76	10.183	-0.281

The AWX and AVX indexes, the first month-ahead indexes for Australia's east coast Wallumbilla and Victorian natural gas markets, are assessed each Friday and reproduced through the week. The date shown is the date of the assessment. The indexes will also appear in the east coast Australian gas markets page each Friday.

MARKET COMMENTARY

Atlantic: AGC June steps lower

Near-curve Argus Gulf Coast (AGC) prices for fob loadings at export terminals in the US Gulf slipped on Tuesday, as European delivered markets fell.

The AGC June price stepped down to \$9.80/mn Btu from \$9.95/mn Btu on the previous Friday, having spent most of the past week trading around \$10/mn Btu. The price had opened on 1 December at \$31.95/mn Btu, sliding by \$22.15/mn Btu by the close of its first day as the AGC front-month price on Tuesday.

US loadings have held quick in recent weeks, with preliminary shipping data suggesting that the country exported a record amount of LNG in April, surpassing the previous record set just a month earlier when aggregate monthly loadings pushed past March 2022 levels. This was despite downtime at Texas' 17mn t/yr Corpus Christi facility on its third train which ran over 4-9 April. Feedgas flows to the terminal also briefly fell early last week to levels suggesting the equivalent of only two of its three liquefaction trains were online.

But planned downtime at Louisiana's 15mn t/yr Cameron LNG could weigh on aggregate US loadings this month. Maintenance began on the terminal's second of three trains on 28 April, Cameron LNG confirmed to Argus today. It remains unclear when the train will return to normal operations, with Cameron LNG declining to comment, though some market participants have suggested that it could run until mid-May. There is also maintenance ongoing until 27 May at the Lake Arthur Compressor station on the Columbia Gulf Transmission Pipeline feeding Cameron LNG, which could cap feedgas supply to the liquefaction facility.

And some minor pipeline maintenance could cap feedgas supply to other US Gulf coast liquefaction terminals this month, with the Corpus Christi pipeline feeding the Corpus Christi LNG terminal set for some curtailed capacity over 18-23 May because of downtime at its Sinton Compressor station. And the Creole Trail line – one of several feeding Louisiana's 33mn t/yr Sabine Pass terminal – is scheduled to cut capacity on Wednesday and again over 18-29 May.

Texas' 15mn t/yr Freeport LNG facility had planned to bring its second loading berth and third storage tank back into operation this month, which could support loadings from the terminal. But the terminal has yet to make any requests to regulators for permission to bring these units back online. And there are unconfirmed reports that the terminal is set to undergo some downtime this month, which could further limit exports.

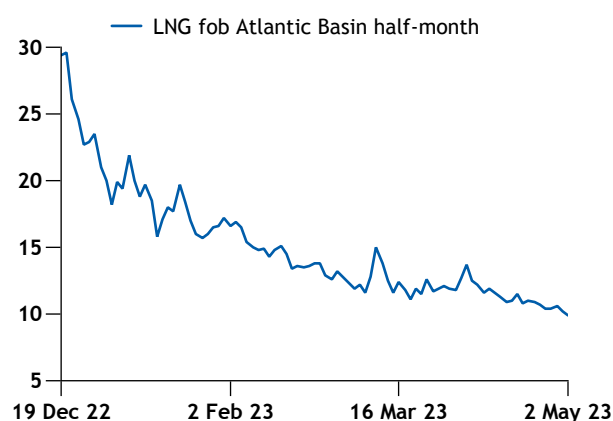
Argus Gulf Coast (AGC) fob LNG		\$/mn Btu
	Price	±
May	9.750	-0.200
Jun	9.800	-0.150
Jul	9.800	-0.250
Aug	10.000	-0.050
Sep	10.250	+0.400
Oct	10.800	+0.100
Nov	13.150	na

Argus Atlantic Basin fob spot LNG				\$/mn Btu
	Loading	Bid	Offer	Midpoint ±
Murmansk fob (ARV freight)	prompt			9.870 -0.350
Iberian peninsula reload	1H Jun	10.15	10.95	10.550 -0.400
	2H Jun	10.15	10.95	10.550 -0.400
	1H Jul	10.90	11.70	11.300 na
Northwest European reload	1H Jun	11.40	12.30	11.850 -0.400
	2H Jun	11.40	12.30	11.850 -0.400
	1H Jul	11.50	12.40	11.950 na
West Africa (AWAF™)	2H May	8.85	9.85	9.350 -0.450
	1H Jun	8.85	9.85	9.350 -0.450
	2H Jun	9.20	10.20	9.700 -0.450
	1H Jul	9.20	10.20	9.700 na
Trinidad and Tobago	2H May	9.30	10.30	9.800 -0.150
	1H Jun	9.30	10.30	9.800 -0.150
	2H Jun	9.30	10.30	9.800 -0.250
	1H Jul	9.30	10.30	9.800 na

Argus Atlantic Basin fob spot LNG index				\$/mn Btu
	Loading	Bid	Offer	Midpoint ±
Atlantic Basin	1H Jun	10.13	11.03	10.580 -0.420
	2H Jun	10.25	11.15	10.700 -0.420
	1H Jul	10.53	11.43	10.980 na

Atlantic Basin fob

\$/mn Btu



Click [here](#) to download “LNG open bids, offers and recent deals” and [here](#) to download “LNG global shipping highlights”.

US GULF COAST INDICATIVE FOB PRICE

Indicative USGC fob LNG (1 May 2023)		\$/mn Btu
Contract	Price	±
Jun	5.66	-0.04
Jul	5.87	-0.05
Aug	5.94	-0.06
3Q23	5.91	-0.06
4Q23	6.57	-0.04
1Q24	7.20	-0.02
2Q24	6.67	-0.03
Winter 23-24	6.88	-0.04
Summer 2024	6.81	-0.03
Winter 24-25	7.85	-0.03
Summer 2025	7.52	-0.02
2024	7.09	-0.03
2025	7.83	-0.03
2026	7.91	-0.04

The US Gulf Coast indicative fob price is a derived price series based on the price of Henry Hub gas futures. A subset of these prices is published in the print edition of Argus LNG Daily. The full series is available electronically.

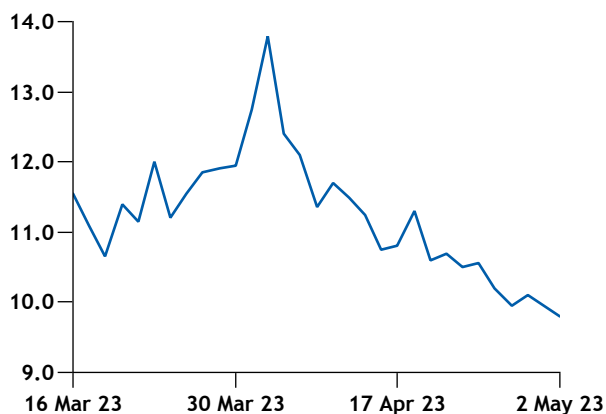
Argus LNG Daily also includes assessments of US Gulf Coast fob LNG prices (see page 1).

For more information, please see the Argus LNG Daily methodology:

<http://www.argusmedia.com/methodology-and-reference/>

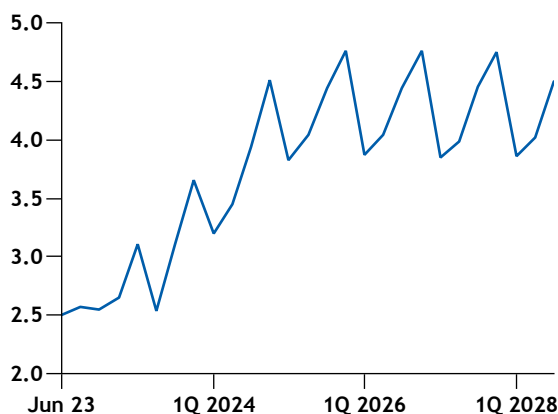
USGC fob LNG Curve

\$/mn Btu



US Nymex gas

\$/mn Btu



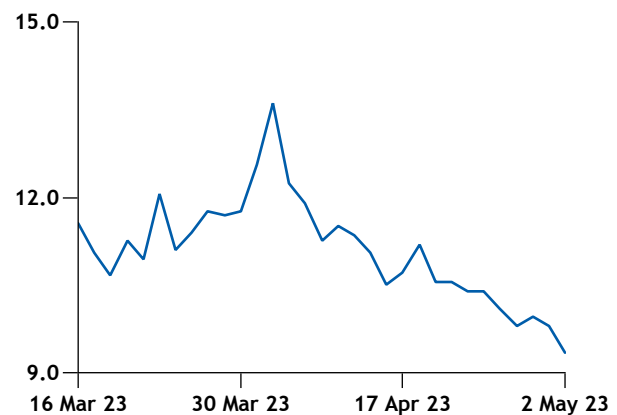
OTHER ATLANTIC PRICES

NBP - AGC fob LNG Spread		\$/mn Btu
Jun 23		0.84
Jul 23		0.85
Aug 23		1.66
Sep 23		2.38
Oct 23		2.87
Nov 23		4.38

LNG US Boston Harbor delivered ARV		\$/mn Btu	±
prompt		9.947	-0.176

West Africa (AWAF) LNG fob

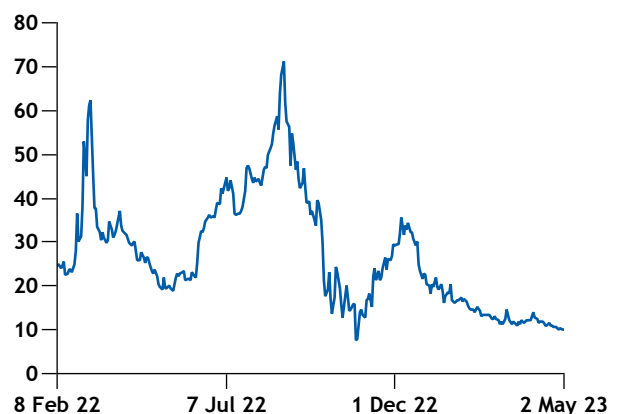
\$/mn Btu



Argus Latin America des spot LNG		\$/mn Btu
Delivery	Price	±
Argentina	Prompt	10.220 -0.240
Brazil	Prompt	9.960 -0.210
Chile	Prompt	10.220 -0.230
Mexico Gulf coast	Prompt	10.280 -0.210
Mexico Pacific coast	Prompt	10.340 -0.100

Argus Brazil des

\$/mn Btu



MARKET COMMENTARY

Europe: Des prices shed value

European delivered prices fell on the first trading day in May, following drops at the Dutch TTF gas hub.

The northwest European delivered price for August fell to \$10.75/mn Btu on Tuesday, from \$10.80/mn Btu at the close last week. And the TTF contract for that month slipped to €38.67/MWh during Tuesday's trading session, from €39.50/MWh on Friday. That said, the differential between the TTF contract and the delivered price tightened slightly to \$1.65/mn Btu, from \$1.79/mn Btu, which curbed the delivered LNG price's losses on the day.

TTF contracts for the third quarter this year fell by more than the fourth quarter contract, with the TTF curve forming a steep contango through to the next winter. The TTF August contract dropped by 41¢/mn Btu on Tuesday, while the October contract only dipped by 24¢/mn Btu, though the whole forward curve until the first quarter of 2024 moved lower. The quicker falls nearer on the curve led the spread between the TTF August and October contracts to open even wider, which had already been the widest since April. And the differential between August and November was \$4.75/mn Btu on the first day that November contract was assessed.

The limited space in the European Union's underground storage sites stemming from high early summer gas inventories in Europe, together with little competition from Asian LNG buyers, has flattened the TTF summer curve in the front months. The bloc's total underground inventory stood at 673TWh at the end of April, 60pc of total capacity, having exceeded even its target for 1 July at 49pc. The bloc has aimed to reach 72pc only by September, which should allow ample room for capacity holders to optimise their supply over the summer.

And continued quick LNG deliveries to Europe in recent weeks has suggested limited need for the region to bid higher for cargoes, further weighing on summer contracts at the TTF.

Early summer demand from markets that typically experience strong cooling gas demand has been weak so far this season, though the August TTF price has maintained a small premium to June and July, reflecting the potential for some competition as temperatures rise. Japan, South Korea and Taiwan have imported less LNG in April than a year earlier, with the first two markets holding high LNG inventories which could limit early summer purchases. Japanese utilities' inventory were 2.56mn t in the penultimate week of April, compared with 1.96mn t by the end of April a year earlier.

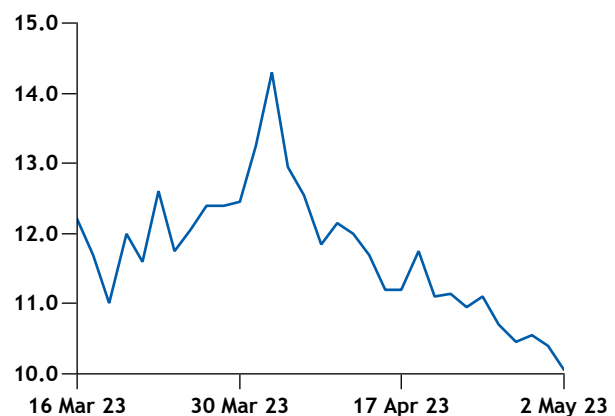
UK GAS AND EUROPEAN LNG PRICES

Argus European des spot LNG					\$/mn Btu
	Delivery	Bid	Offer	Midpoint	±
NW Europe	1H Jun	9.55	10.55	10.050	-0.400
	2H Jun	9.55	10.55	10.050	-0.400
	1H Jul	9.85	10.85	10.350	-0.450
	2H Jul	9.85	10.85	10.350	na
Iberian peninsula	1H Jun	9.35	10.55	9.950	-0.400
	2H Jun	9.35	10.55	9.950	-0.400
	1H Jul	9.65	10.85	10.250	-0.450
	2H Jul	9.65	10.85	10.250	na
Italy	1H Jun	9.65	10.65	10.150	-0.400
	2H Jun	9.65	10.65	10.150	-0.400
	1H Jul	9.95	10.95	10.450	-0.450
	2H Jul	9.95	10.95	10.450	na
Greece	1H Jun	9.75	10.75	10.250	-0.400
	2H Jun	9.75	10.75	10.250	-0.400
	1H Jul	10.05	11.05	10.550	-0.450
	2H Jul	10.05	11.05	10.550	na
Turkey	1H Jun	9.75	10.75	10.250	-0.400
	2H Jun	9.75	10.75	10.250	-0.400
	1H Jul	10.05	11.05	10.550	-0.450
	2H Jul	10.05	11.05	10.550	na

Northwest Europe des forward curve				\$/mn Btu
Contract	Price	±	diff. vs TTF	±
Jun	10.050	-0.400	-2.012	-0.032
Jul	10.350	-0.450	-1.843	-0.068
Aug	10.750	-0.450	-1.759	+0.031
Sep	11.400	-0.300	-1.946	+0.064
Oct	12.650	-0.400	-2.423	-0.083
Nov	15.500	-0.300	-2.451	na
3Q23	10.833	-0.400	-1.848	+0.009

Argus NW Europe LNG des

\$/mn Btu



LNG SPREADS AND OIL-LINKED SNAPSHOT

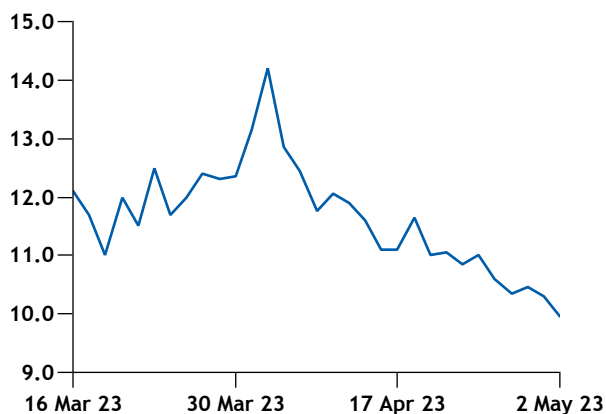
European hubs to LNG price spreads										\$/mn Btu
	Northeast Asia		China		India		Middle East		Middle East-India (MEI)	
	1H Jun	Jun avg	1H Jun	Jun avg	1H Jun	Jun avg	1H Jun	Jun avg	1H Jun	Jun avg
NBP	0.45	0.51	0.44	0.50	0.07	0.12	0.07	0.12	0.07	0.12
TTF	-0.98	-0.92	-0.98	-0.92	-1.35	-1.30	-1.35	-1.30	-1.35	-1.30

Snapshot of oil-linked LNG prices (1 May 2023)						\$/mn Btu
Jun	10pc	11pc	12pc	13pc	14pc	
601	8.30	9.13	9.96	10.80	11.63	
301	8.08	8.88	9.69	10.50	11.31	
311	8.23	9.05	9.87	10.69	11.52	
101	7.95	8.75	9.54	10.34	11.14	

Contracts defined as: Oil-linked LNG on six-month crude average (601) contract; Oil-linked LNG three-month crude average (301) contract; Oil-linked LNG three-month crude average plus one month lag (311) contract; Oil-linked LNG one-month crude average (101) contract. For more oil-linked LNG forward curve prices, please see the appendix at the back of the LNG Daily report.

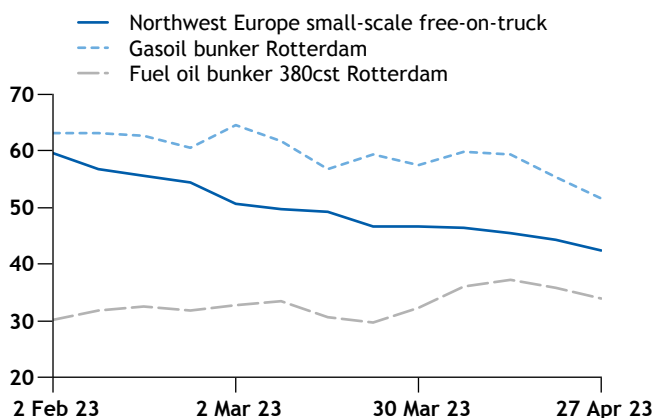
Argus Iberian peninsula des

\$/mn Btu



Small Scale LNG vs. Gasoil and fuel oil

€/MWh



SMALL-SCALE LNG

Small-scale LNG assessments (27 Apr 2023)				
	€/MWh	+/- 20 Apr	\$/t MGOe	+/- 20 Apr
Northwest Europe free on truck front month	42.325	-1.925	552	-23
Southwest France free on truck front month	42.225	-2.325	551	-28
Northwest Europe LNG bunker delivered on board	48.000	-2.300	626	-27

Competing fuels snapshot (27 Apr 2023)				
Gas	€/MWh	+/- 20 Apr	\$/t MGOe	+/- 20 Apr
TTF	38.810	-1.890	506	-22
Zeebrugge	36.841	-2.724	481	-33

Oil products	€/MWh	+/- 20 Apr	\$/t	+/- 20 Apr
Gasoil bunker Rotterdam prompt	51.503	-3.930	672	-48
Gasoil diesel 10ppm German NWE barge prompt	52.844	-2.666	689	-32
Fuel oil bunker 380cst Rotterdam prompt	33.916	-1.865	438	-22

NBP					\$/mn Btu
Delivery	Bid	Offer	Midpoint	±	
Jun	10.63	10.65	10.638	-0.324	
Jul	10.63	10.67	10.651	-0.385	
Aug	11.63	11.69	11.660	-0.547	
Sep	12.61	12.65	12.630	-0.589	
Oct	13.59	13.74	13.668	-0.568	
Nov	17.32	17.73	17.527	na	
3Q23	11.63	11.66	11.647	-0.506	
4Q23	16.81	16.88	16.845	-0.294	
1Q24	19.45	19.52	19.485	-0.301	
2Q24	17.18	17.33	17.255	-0.579	
2024	17.93	18.05	17.991	-0.484	
2025	15.59	15.90	15.740	-0.499	

Spain Tanque Virtual de Balance (TVB) LNG hub (2 May)		
	€/MWh	Change
Mibgas TVB intraday	34.53	-0.30
Mibgas TVB day-ahead	34.64	+0.05
MWh Change		
Mibgas TVB volume intraday	14,380	+12,950
Mibgas TVB volume day-ahead	12,422	+8,700

LNG OPEN BIDS, OFFERS AND RECENT DEALS

Global Open Bids				
Submission date	Validity date	Bid	Period	Note
11-May-23	unknown	1 cargo(es) des Vietnam to PetroVietnam Gas	delivery 01 Jun 2023 - 31 Jul 2023	Delivery to Thi Vai LNG import terminal
03-May-23	unknown	3 cargo(es) des India to Gail	delivery 01 Jul 2023 - 08 Sep 2023	Part of swap tender; Delivery Dhamra over 1-10 Jul, 1-10 Aug and 1-8 Sep
03-May-23	unknown	4 cargo(es) des Thailand to PTT	delivery 21 May 2023 - 13 Jul 2023	Delivery to Map Ta Phut; Delivery over 21-22 May, 26 -27 Jun, 1-2 Jul and 12-13 Jul
02-May-23	unknown	1 cargo(es) des India to Indian Oil Corp	delivery 23-27 Sep 2023	Delivery to Dhamra
30-Apr-23	unknown	4 cargo(es) des Bangladesh to RPGCL	delivery 01-24 Jun 2023	Delivery over 1-2, 8-9, 14-15 and 23-24 Jun
19-Apr-23	unknown	8 cargo(es) des to Energia Argentina	delivery 07 Jun 2023 - 01 Aug 2023	All for Bahia Blanca
13-Apr-23	unknown	1 cargo(es) des to Adgas	delivery 14-16 Jun 2023	For delivery to Middle East or west India
13-Apr-23	13-Apr-23	9 cargo(es) des to Botas	delivery 15 Apr 2023 - 31 Dec 2023	One per month Apr-Dec. Any Turkish terminal.
12-Apr-23	unknown	2 cargo(es) des Kuwait to KPC	delivery 29 Jul 2023 - 31 Aug 2023	Delivery 29-31 July and 1-31 August
Global Open Offers				
Submission date	Validity date	Offer	Period	Note
03-May-23	unknown	3 cargo(es) fob USA from Gail	loading 21 Jul 2023 - 08 Sep 2023	Part of swap tender; Loading from Sabine Pass on 25 Aug; Loading from Cove Point on 21 Jul and 8 Sep
03-May-23	unknown	1 cargo(es) des from Angola LNG	delivery 20 May 2023 - 04 Jun 2023	Delivery furthest to Singapore
28-Apr-23	unknown	1 cargo(es) fob Australia from Ichthys	loading 26-30 May 2023	
19-Apr-23	unknown	1 cargo(es) fob Angola from Angola LNG	delivery 29 Apr 2023 - 22 May 2023	For delivery furthest to southeast Asia
13-Apr-23	unknown	1 cargo(es) fob Angola from Angola LNG	delivery 20-30 Apr 2023	For delivery to Europe around 25 April, or furthest to India by late April. Due at 13:00 London time
13-Apr-23	unknown	1 cargo(es) des from PNG LNG	delivery 24-29 May 2023	Loading at PNG LNG facility
11-Apr-23	unknown	1 cargo(es) fob Egypt from Egas	delivery 21-22 Apr 2023	Loading from Damietta
05-Apr-23	unknown	1 cargo(es) des Angola from Angola LNG	delivery 01-30 Apr 2023	Loading at Soyo; for delivery to various destinations, incl India over 19-23 Apr, Jordan over 20-21 Apr, Canada over 18-21 Apr; UK over 16-25 Apr
Global Recent Deals				
Date	Transaction	Period	Price	Note
unknown	Egas sold to Unknown 1 cargo(es) fob Egypt	loading 10-11 May 2023		Awarded at low-\$10s/mn Btu; Loading from Damietta
unknown	PNG LNG sold to Unknown 1 cargo(es) des Papua New Guinea	delivery 13-16 Jun 2023		Awarded at low-\$11s/mn Btu
unknown	Angola LNG sold to Unknown 1 cargo(es) fob Angola	delivery 15-25 May 2023		Awarded at TTF minus \$2.20/mn Btu; Delivery to Europe or India. Due at 09:00 London time
unknown	Indian Oil Corp bought from Unknown 2 cargo(es) des India	delivery 03 May 2023 - 06 Aug 2023		Awarded at \$11.1-11.20 for delivery over 3 May-6 June; Awarded at \$11.50-11.60 for delivery over 28 June-6 August
unknown	Petronet LNG bought from Vitol 1 cargo(es) des India	delivery 19 Jun 2023	\$10.70-10.90/mnBtu	
unknown	Darwin LNG sold to Unknown 1 cargo(es) fob Australia	loading 25 Apr 2023 - 04 May 2023		Offered both on fob and des basis. Sold at a low \$1s/mn Btu discount to a northeast Asian LNG price
unknown	Kansai Electric sold to Vitol 1 cargo(es) des Australia	delivery 15 Jun 2023		Limited participation tender; Sold at 10-20¢/mn Btu discount to a northeast Asian spot LNG price

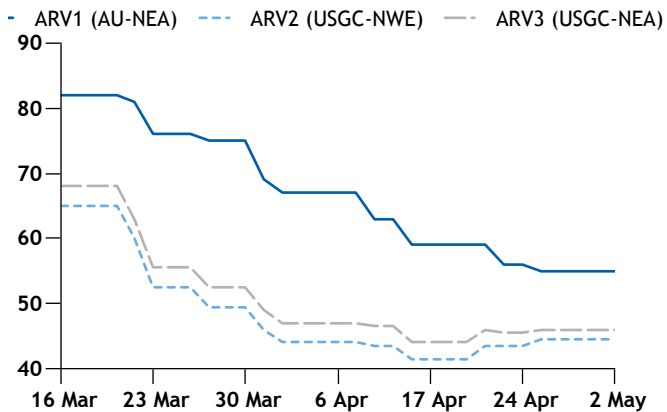
Global shipping highlights						
Vessel	Capacity m ³	From	To	Loading	Arrival	Notes
Kool Baltic	170200	Sabine Pass, US	Livorno, Italy	10 Apr	2 May	
Elisa Aquila	174000	Sabine Pass, US	Wilhelmshaven, Germany	14 Apr	2 May	
Woodside Rees Withers	173400	Corpus Christi, US	Eemshaven, Netherlands	18 Apr	2 May	
Tenergy	174000	Corpus Christi, US	TBC	20 Apr	2 May	
Georgiy Ushakov	172600	Yamal, Russia	Huelva, Spain	22 Apr	2 May	
Hyundai peacepia		Sabine Pass, US	Hosan, South Korea	2 Apr	3 May	Via Panama
Cool Explorer	160000	Freeport, US	Bahia Blanca, Argentina	12 Apr	3 May	
Golar Crystal	160000	Cameron, US	TBC	13 Apr	3 May	
SK Audace	180000	Cameron, US	Montoir, France	20 Apr	3 May	Diverted from Isle of Grain
Vladimir Rusanov	172600	Yamal, Russia	TBC	25 Apr	3 May	
Gaslog Georgetown	174000	Sabine Pass, US	TBC	27 Mar	4 May	
Bahrain Spirit	173000	Cameron, US	Lubmin, Germany	17 Apr	4 May	
LNG Sakura	177000	Cove Point, US	Brunsbüttel, Germany	19 Apr	4 May	
Seapeak Catalunya		Sabine Pass, US	Gate, Netherlands	21 Apr	4 May	
Castillo de Merida	178800	Corpus Christi, US	Dunkirk, France	15 Apr	5 May	
Barcelona Knutsen	173400	Sabine Pass, US	Isle of Grain, UK	19 Apr	5 May	
Boris Vilkitsky	172600	Yamal, Russia	TBC	26 Apr	5 May	
Vladimir Vize	172600	Yamal, Russia	TBC	28 Apr	5 May	
La Seine	174000	Freeport, US	Marmara Ereglisi, Turkey	19 Apr	6 May	Diverted from Lubmin
Grace Dahlia	177400	Sabine Pass, US	Milford Haven, UK	21 Apr	6 May	
Stena Crystal Sky	173000	Sabine Pass, US	TBC	23 Apr	6 May	
BW Pavilion Aranthera	170800	Corpus Christi, US	Gate, Netherlands	14 Apr	7 May	Diverted from Isle of Grain
Alicante Knutsen	174000	Sabine Pass, US	Gate, Netherlands	15 Apr	7 May	
Corcovado LNG	160100	Freeport, US	TBC	16 Apr	7 May	
Maran Gas Ulysses	174000	Sabine Pass, US	TBC	20 Apr	7 May	
LNG Abuja II	175000	Corpus Christi, US	TBC	22 Apr	7 May	
Grace Emilia	174000	Sabine Pass, US	Dahej, India	12 Apr	8 May	Via Suez
Hoegh Galleon	170000	Sabine Pass, US	Huelva, Spain	24 Apr	8 May	
Minerva Chios	174000	Sabine Pass, US	TBC	26 Apr	8 May	
Marvel Heron	177000	Cameron, US	Boryeong, South Korea	8 Apr	9 May	Via Panama
Orion Sun	174000	Calcasieu Pass, US	TBC	20 Apr	9 May	
Attalos	174000	Freeport, US	Trinidad	21 Apr	10 May	Diverted from Gate, then diverted from Bahia Blanca
Maran Gas Olympias	173400	Calcasieu Pass, US		28 Apr	10 May	
Adamastos	174000	Corpus Christi, US	Eemshaven, Netherlands	27 Apr	10 May	
Energy Endeavour	173400	Cove Point, US	TBC	24 Apr	11 May	
La Mancha Knutsen	176000	Sabine Pass, US	Gate, Netherlands	27 Apr	11 May	
Ribera Del Duero Knutsen	173400	Sabine Pass, US	Isle of Grain, UK	16 Apr	12 May	
Ribera Del Duero Knutsen	173400	Sabine Pass, US	Isle of Grain, UK	18 Apr	12 May	
Bushu Maru	180000	Freeport, US	Dunkirk, France	21 Apr	12 May	
Maran Gas Mystras	159800	Cameron, US	TBC	23 Apr	12 May	
BW Pavilion Vanda	162000	Calcasieu Pass, US	Escobar, Argentina	22 Apr	13 May	

FREIGHT RATES

Argus round voyage forward curves (28 Apr)						
Month	ARV1: Australia-Northeast Asia		ARV2: USGC-Northwest Europe		ARV3: USGC-Northeast Asia	
	\$/day	+/- 21 Apr	\$/day	+/- 21 Apr	\$/day	+/- 21 Apr
Jun	56,000	-2,000	44,500	-500	47,000	nc
Jul	60,000	-2,000	57,000	+2,000	59,000	+1,000
Aug	82,000	-3,000	86,000	+1,000	88,000	nc
Sep	134,000	-1,000	140,000	nc	145,000	nc
Oct	227,000	nc	235,000	nc	245,000	nc
Nov	283,000	nc	303,000	nc	315,000	nc
Dec	235,000	nc	245,000	nc	255,000	nc
Jan	155,000	nc	165,000	nc	172,000	nc
Feb	100,000	nc	110,000	nc	115,000	nc
Mar	75,000	nc	80,000	nc	84,000	nc
Apr	60,000	nc	63,000	nc	66,000	nc
May	61,000	nc	64,000	nc	65,000	nc

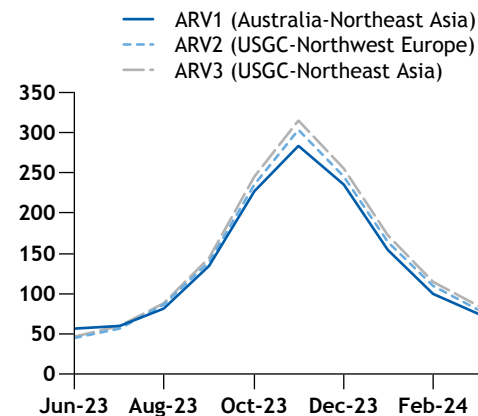
Argus Round Voyage spot rates

\$'000/day



Argus Round Voyage forward curves

\$'000/day

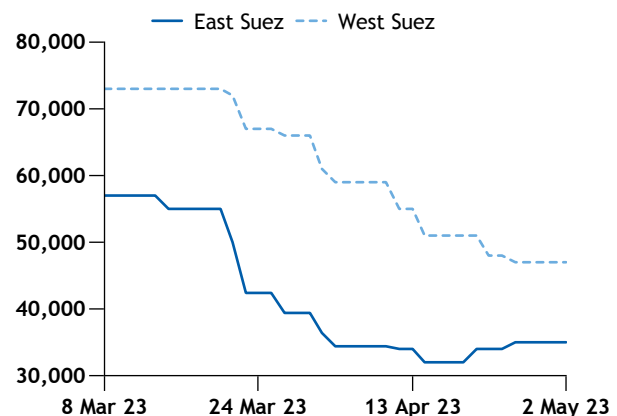


Argus ballast leg TFDE rates (28 Apr 2023)

	%	+/- 21 Apr
Day rate - west of Suez	100	nc
Day rate - east of Suez	100	nc
Fuel cost - west of Suez	40	nc
Fuel cost - east of Suez	40	nc

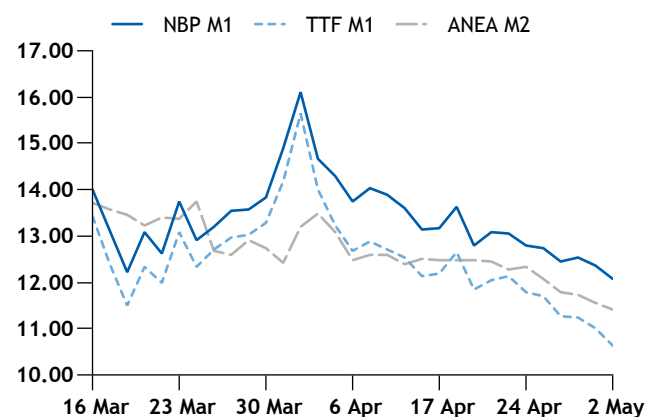
Laden freight rate (prompt - TFDE)

\$/day



European gas hubs vs ANEA

\$/mn Btu


 download data on [Argus direct](#)

FREIGHT COSTS AND NETBACKS

Standard round-trip freight costs*																\$/mn Btu
	route via	Ain Sukhna and Aqaba	Aliaga	Altamira	Dahej and Qasim	Escobar	Incheon	Jebel Ali and Mina al-Ahmadi	Manzanillo	Map ta Phut	Milford Haven	Pecem	Quintero	Shenzen and Taipei	Singapore	Tokyo
Angola	-		0.59	0.52	0.55	0.35	1.08	0.59	0.83	0.64	0.51	0.27	0.52	1.28	0.58	1.12
	Suez Panama	0.63							0.72							
Bintulu and Tangguh	-	0.74			0.46	1.16	0.32	0.56	1.03	0.18		1.15	1.25	0.23	0.13	0.37
	Suez Panama		0.94	1.68 1.56							1.25					
Bonny	-		0.55	0.49	0.59	0.36	1.13	0.64	0.84	0.68	0.46	0.25	0.52	0.74	0.64	1.16
	Suez Panama	0.59							0.69							
Bontang	-	0.80			0.55	1.16	0.37	0.64	1.02	0.27		1.19	1.16	0.26	0.21	0.37
	Suez Panama		1.03	1.74 1.54							1.31					
Dampier	-	0.62		1.40	0.43	1.07	0.51	0.50	1.07	0.35		1.09	1.11	0.42	0.27	0.51
	Suez Panama		1.03								1.31					
Gladstone	-	0.85		1.16	0.62	0.98	0.56	0.70	0.83	0.55		1.24	0.87	0.51	0.47	0.53
	Suez Panama		1.27								1.54					
Rotterdam	-		0.38	0.44		0.57			1.10			0.37	0.77			
	Suez Panama	0.48			0.68		1.35	0.71		0.94				1.27	0.87	1.39
Papua New Guinea	-	0.85		1.16	0.59	1.07	0.51	0.70	0.83	0.46		1.24	0.87	0.42	0.47	0.46
	Suez Panama		1.27								1.54					
Ras Laffan and UAE	-	0.31			0.15	1.16	0.81	0.08	1.50	0.60			1.36	0.70	0.51	0.86
	Suez		0.65	1.36							0.93	1.15				
Sakhalin	-	1.14			0.80	1.34	0.23	0.90	0.73	0.46		1.52	1.11	0.31	0.46	0.21
	Suez Panama		1.27	2.07 1.26							1.58					
Singapore	-	0.66			0.41	1.15	0.37	0.50	1.11	0.16		1.15	1.25	0.26		0.42
	Suez		0.89	1.60							1.17					
Sagunto	-		0.19	0.44		0.48			1.00		0.22	0.30	0.67			
	Suez Panama	0.34			0.53		1.18	0.55		0.78				1.09	0.71	1.23
Trinidad and Tobago	-		0.55	0.19		0.37			0.87	0.93	0.42	0.16	0.56		0.87	
	Suez Panama	0.61			0.80		1.56 1.22	0.82		0.39			0.45	1.47 1.26		1.60 1.13
USGC	-		0.67	0.06		0.45	1.66		0.24	0.94	0.51	0.28	0.62		0.89	1.69
	Suez Panama	0.62			0.78			0.81						1.60 1.30		
							1.26		0.37				0.42	1.30		1.14

*Standard freight costs include full charter costs and fuel for the return leg of a delivery fixture

Netbacks (standard freight costs*)												\$/mn Btu (prompt)
	India	China	Japan	South Korea	Taiwan	Iberian peninsula	Greece	Italy	Turkey	NW Europe	North-east US	
Middle East	10.49	10.32	10.19	10.24	10.38	9.22	9.68	9.49	9.67	9.24	2.35	
Australia	10.19	10.62	10.57	10.59	10.68	8.91	9.35	9.18	9.35	8.92	2.14	
Nigeria	9.76	9.77	9.66	9.71	9.85	9.53	9.70	9.61	9.67	9.55	2.67	
Norway	9.57	9.39	9.30	9.36	9.49	9.65	9.78	9.69	9.75	9.79	2.75	
Algeria	9.96	9.78	9.71	9.75	9.88	9.81	10.10	10.01	10.07	9.82	2.78	
Trinidad and Tobago	9.46	9.34	9.21	9.26	9.52	9.52	9.67	9.60	9.66	9.58	2.88	
Russia	9.96	10.82	10.92	10.89	10.84	8.71	9.15	8.97	9.12	8.72	2.15	

FREIGHT COSTS AND NETBACKS

Spot (ARV) freight costs*															\$/mn Btu	
	route via	Ain Sukhna and Aqaba	Aliaga	Altamira	Dahej and Qasim	Escobar	Incheon	Jebel Ali and Mina al-Ahmadi	Manzanillo	Map ta Phut	Milford Haven	Pecem	Quintero	Shenzen and Taipei	Singapore	Tokyo
Angola	-	0.50	0.42	0.44	0.28	0.91	0.48		0.51	0.43	0.21	0.42	1.08	0.47	0.94	
	Suez	0.53														
	Panama							0.60								
Bintulu and Tangguh	-	0.64			0.39	1.01	0.28	0.49	0.90	0.15		1.01	1.09	0.19	0.11	0.32
	Suez		0.83	1.47							1.10					
	Panama			1.36												
Bonny	-	0.47	0.40	0.48	0.29	0.95	0.51		0.55	0.39	0.20	0.42	0.60	0.51	0.97	
	Suez	0.50														
	Panama							0.57								
Bontang	-	0.69			0.47	1.01	0.32	0.56	0.89	0.23		1.05	1.01	0.22	0.18	0.32
	Suez		0.91	1.53							1.15					
	Panama			1.35												
Dampier	-	0.52		1.22	0.35	0.93	0.44	0.41	0.94	0.30		0.95	0.97	0.36	0.23	0.44
	Suez		0.91								1.15					
	Panama			1.36												
Gladstone	-	0.70		1.01	0.52	0.85	0.48	0.58	0.73	0.48		1.09	0.76	0.44	0.41	0.45
	Suez		1.12								1.36					
	Panama			1.15												
Rotterdam	-	0.32	0.34		0.44							0.28	0.60			
	Suez	0.39			0.55		1.15	0.57		0.76				1.08	0.70	1.19
	Panama							0.56					0.62			
Papua New Guinea	-	0.70		1.01	0.49	0.93	0.44	0.58	0.73	0.39		1.09	0.76	0.36	0.41	0.40
	Suez		1.12								1.36					
	Panama			1.19												
Ras Laffan and UAE	-	0.25			0.12	1.01	0.70	0.06	1.31	0.52			1.18	0.60	0.43	0.74
	Suez		0.58	1.20							0.82	1.02				
Sakhalin	-	0.99			0.69	1.17	0.19	0.78	0.63	0.39		1.34	0.97	0.26	0.39	0.18
	Suez		1.12	1.82							1.39					
	Panama			1.10												
Singapore	-	0.57			0.35	1.00	0.32	0.43	0.97	0.14		1.01	1.09	0.22		0.36
	Suez		0.79	1.41							1.03					
Sagunto	-	0.16	0.35			0.38					0.18	0.24	0.53			
	Suez				0.44		1.01	0.46		0.64				0.94	0.59	1.05
	Panama	0.29							0.56				0.61			
Trinidad and Tobago	-	0.47	0.15		0.29					0.75	0.35	0.13	0.45		0.70	
	Suez	0.51			0.66		1.33	0.68						1.25		1.37
	Panama						1.04		0.33				0.38	1.08		0.97
USGC	-	0.57	0.04		0.37	1.40				0.77	0.43	0.22	0.50		0.73	1.43
	Suez	0.52			0.66			0.68						1.37		
	Panama						1.08		0.32				0.36	1.11		0.98

*ARV freight costs take into account a varying proportion of return leg fuel and charter costs, in line with Argus' ballast bonus assessments. For more details, consult the Argus Round Voyage methodology.

Netbacks (ARV freight costs*)												\$/mn Btu (prompt)	
	India	China	Japan	South Korea	Taiwan	Iberian peninsula	Greece	Italy	Turkey	NW Europe	North-east US		
Middle East	10.52	10.42	10.32	10.36	10.48	9.31	9.75	9.58	9.74	9.35	2.39		
Australia	10.26	10.68	10.65	10.66	10.74	9.05	9.47	9.31	9.47	9.07	2.19		
Nigeria	9.89	9.95	9.86	9.90	10.02	9.60	9.78	9.69	9.76	9.63	2.69		
Norway	9.71	9.61	9.53	9.59	9.69	9.70	9.85	9.76	9.83	9.84	2.77		
Algeria	10.05	9.95	9.88	9.92	10.03	9.84	10.13	10.04	10.10	9.86	2.80		
Trinidad and Tobago	9.62	9.57	9.45	9.49	9.73	9.59	9.76	9.68	9.75	9.65	2.89		
Russia	10.06	10.86	10.95	10.92	10.88	8.88	9.30	9.14	9.28	8.91	2.21		

NEWS

Thailand's PTT seeks May-July LNG cargoes

Thailand's PTT is seeking four LNG cargoes for delivery over May-July through a tender closing on 3 May.

The firm is seeking cargoes on a des basis, for delivery to the country's 11.5mn t/yr Map Ta Phut terminal over 21-22 May, 26 -27 June, 1-2 July and 12-13 July.

The firm was last in the market seeking **seven cargoes for delivery over May-September**, through a tender that closed on 12 April. The tender was likely fully awarded and linked to a northeast Asian spot LNG price, market participants said. The delivered prices were likely equivalent to around high-\$11s/mn Btu for May deliveries, \$12s/mn Btu for June deliveries, mid-\$13s/mn Btu for July deliveries, high-\$14s/mn Btu for August deliveries and \$15s/mn Btu for September deliveries, they added.

Softening Asian spot LNG prices continued to spur the firm to emerge with requirements, especially as temperatures in the region rose, market participants said. Maximum temperatures in Bangkok are forecast to reach a range of 35-38°C over 2-8 May, according to the Thai Meteorological Department (TMA) on 2 May. Warmer weather is likely to persist over the rest of the month, keeping demand for gas-fired power generation lifted.

Prompt demand has otherwise been limited to buyers in the southeast and south Asia region. But some buyers in south Asia are taking advantage of current lower prices to seek requirements for further ahead. India's IOC is also seeking a delivery over 23-27 September on a des basis, to the country's 5mn t/yr Dhamra LNG terminal, through a tender closing 2 May.

The ANEA price, Argus' assessment for spot LNG deliveries in northeast Asia, for second-half June and first-half July deliveries were last assessed at \$11.085/mn Btu and \$11.20/mn Btu on 2 May respectively, about 72¢/mn Btu lower than a week earlier. The price for second-half July debuted at \$11.475/mn Btu on 2 May, while the second-half May ANEA was last assessed at \$11.03/mn Btu on 28 April.

By Naomi Ong

Sakhalin 2 faces months of maintenance

Russia's far east, Gazprom-led Sakhalin 2 project plans extensive maintenance on oil and LNG infrastructure over the next few months.

The maintenance programme starts next month with work on the Piltun-Astokhskeye-B oil platform offshore Sakhalin island, followed by the shutdown of the Piltun-Astokhskeye-A/Molikpaq platform in June-September, according to operating consortium Sakhalinskaya Energiya's corporate newsletter. The two platforms are integrated for crude production.

Work is also planned at the onshore Prigorodnoye oil processing complex and export terminal on Sakhalin, although this should not be expected to affect "crude production or exports". Sakhalin 2 crude and condensate output are exported as ultra-light sweet Sakhalin Blend. Loadings declined by almost 10pc on the month to 73,000 b/d (283,000t) in March, with all Sakhalin Blend heading to China.

Maintenance on all facilities in Sakhalin 2's "integrated gas chain" will start on 1 July, including the Lunskeye gas production, providing feedgas for the 9.6mn t/yr LNG plant at Prigorodnoye, where LNG turbines will be overhauled "without the engagement of foreign contractors". Sakhalinskaya Energiya has not said how long the work will last or whether LNG exports will be affected.

The LNG plant operated 21pc above capacity in 2022, producing 11.6mn t. But Sakhalinskaya Energiya has moved away from a "peak-load" strategy this year, to maintaining steady year-round production, deputy upstream head Alexander Singurov said in February. The project will honour LNG export commitments and continue supplying gas to the domestic market, despite the output drop, he adds. Name-plate LNG capacity is committed under long-term contracts with Japanese and South Korean buyers, with additional output sold on a spot basis.

Alongside Gazprom, with 50pc, Sakhalinskaya Energiya shareholders include Japan's Mitsubishi and Mitsui, with a combined 22.5pc between them. Following Shell's departure from Sakhalin 2 last year, Moscow has approved the sale of a 27.5pc stake in the project to Novatek, Russia's largest LNG producer.

Abu Dhabi's Adnoc switches export plant to Ruwais

Abu Dhabi's Adnoc expects to build its planned LNG project in Al-Ruwais Industrial City in Abu Dhabi instead of Fujairah, the firm said on Tuesday.

The 9.6mn t/yr liquefaction terminal was initially planned for the emirate of Fujairah but will now be built in Al-Ruwais.

It is slated to more than double the country's LNG production capacity and comes at a time when demand for the fuel is firm owing to Russia's invasion of Ukraine last year, which tightened supplies worldwide.

The Ruwais plant will run on renewable and nuclear grid power, making it one of the lowest carbon intensity LNG facilities, Adnoc said.

Al-Ruwais was chosen as the location for the terminal because of its proximity to the company's current operations, Adnoc added.

Adnoc already has an LNG import terminal at Ruwais, which uses the 150,900m³ *Express* floating storage and regasification unit. The vessel – installed in 2019 – does not typically receive LNG cargo deliveries, but has on a few occasions cast off and loaded at Adnoc's 5.6mn t/yr Das Island liquefaction facility before returning to Ruwais with LNG, ship-tracking data show.

Adnoc holds a charter for the *Express* with US-based owner Excelerate Energy. The charter automatically renews each month and has a 12-month cancellation notice period.

The news follows Adnoc's announcement on 1 May of a new three-year agreement to [supply TotalEnergies with LNG from 2023-25](#). The company intends to increase its foothold in the European gas market as the continent looks for alternatives to Russian imports.

Earlier this year, Adnoc combined its gas processing and LNG subsidiaries to form Adnoc Gas. The newly consolidated LNG business is expected to have a capacity of about 10bn ft³/d (103bn m³/yr) and is at the forefront of the UAE's push to [triple its LNG export capacity](#) to about 15mn t/yr in the next few years.

By Rithika Krishna and Samuel Good

Adnoc, TotalEnergies in 3-year LNG supply deal

Abu Dhabi's Adnoc has signed a three-year agreement to supply TotalEnergies with LNG.

Under terms of the agreement, Adnoc Gas will begin supplying the French company with LNG from this year through to 2025, to be then be delivered to various export markets around the world, Adnoc said.

TotalEnergies senior vice president for LNG Thomas Maurisse specifically highlighted "the growing Asian markets" as a likely destination for this additional LNG supply.

Neither company disclosed the volumes involved, but Adnoc put the value of the agreement at \$1bn-1.2bn "under current market conditions."

"The agreement demonstrates Adnoc Gas' ability to meet global demand for LNG, a critical energy transition fuel," Adnoc Gas said.

This pact builds on what is already a strong relationship between TotalEnergies and the UAE, where the company produced 280,000 b/d of oil equivalent in 2021. The company holds stakes in a number of Adnoc's onshore and offshore oil and gas concessions, as well as LNG, gas processing and shipping operations.

It also holds a 24.5pc interest in Abu Dhabi's Dolphin Energy, which pipes Qatari gas to both the UAE and Oman. By Nader Itayim

Holiday reins in Japan's thermal power capacity

Japan's operational thermal power generation capacity is forecast to drop during the country's Golden Week holiday over 29 April-7 May.

Power producers are taking advantage of the holiday to carry out maintenance checks at their thermal units, as electricity demand from the industrial sector typically weakens during the holiday season when heating demand is also muted.

At least 17 thermal units with a combined generation capacity of 8.37GW, comprising 4.74GW of gas-fired and 3.63GW of coal-fired capacity, were scheduled to shut down between 28 April and 7 May, according to an Argus survey based on data provided by the Japan Electric Power Exchange.

Japan's power sector plans to add around 4.9GW of thermal capacity during the week to 7 May, with the return of 11.5GW outstripping the closure of 6.6GW. The increase largely reflects the return from inspections that began over 28-30 April.

Japan's power demand averaged 84GW across 24-30 April, down by 2pc from a week earlier, hitting a weekly low of 71GW on 30 April, according to nationwide transmission system operator the Organisation for Cross-regional Co-ordination of Transmission Operators.

By Motoko Hasegawa

Cheniere eyes Corpus Christi stage 3 in 2026

US LNG producer Cheniere has suggested its 11.5mn t/yr Corpus Christi stage 3 expansion project could "possibly" be fully operational by the end of 2026, earlier than its previous substantial completion date in 2027, it said on Tuesday.

The expansion, which comprises seven midscale lique-

Argus Green Marine Fuels Conference

23-25 May 2023 | Amsterdam, Netherlands

Register
as a group
and save
up to 20%
off standard
rates



www.argusmedia.com/green-marine-fuels-conference

faction trains, was 28.7pc complete as of 31 March, and the company expects first LNG and “potentially more volumes” from the project in 2025, Cheniere said.

Cheniere plans to add a further two midscale liquefaction trains at Corpus Christi, for which the firm requested permission to build from federal energy regulator Ferc last month. Cheniere has secured around 2.8mn t/yr of LNG in long-term supply contracts for the two trains, it said, and has previously slated both trains to start operations in 2031.

Cheniere pens first offtake for Sabine Pass expansion

Cheniere last week signed a supply and purchase agreement (SPA) with an unnamed Asian buyer for 400,000 t/yr of LNG over 20 years through 2047 from the 20.3mn t/yr expansion at its 33mn t/yr Sabine Pass export terminal, it said.

Most of the supply under the SPA is subject to the first liquefaction train of the project reaching a final investment decision (FID), the firm added. Cheniere is targeting the project being in service by the end of this decade, and has submitted pre-filing documents to Ferc for the expansion, it said.

The plans involve three 6.5mn t/yr trains, and one 750,000 t/yr boil-off gas reliquefaction unit. The firm said in February that it is also targeting increased loading rates at its three berths.

Germany's Rostock LNG eyes 4Q 2023 FID

A final investment decision (FID) will be made on a new LNG import terminal at German the port of Rostock in the fourth quarter, liquidator of the Rostock LNG project, Winfried Krueger-Sprengel, said on Tuesday at Amsterdam's Flame conference.

Belgian system operator Fluxys and Russian producer Novatek had cancelled plans to build and operate a small-scale LNG import terminal at Rostock in October 2021. And both firms had sold their shares in the company, with Krueger-Sprengel tasked with the liquidation of the firm.

The new onshore terminal, which would have a capacity of 1.5GWh, or 1bn m³/yr, aims to begin operations at the start of 2026 and would supply the Baltic region with gas and small-scale LNG services.

More information is scheduled to be released over the next 10 days, Krueger-Sprengel told Argus on Tuesday.

By Auguste Breteau

Developers: Europe 'complacent' on long-term LNG

European firms are being “complacent” and a “little naive” about signing on for long-term supply, developers of US liquefaction projects and European import terminals said at the Flame conference in Amsterdam.

Only 3pc of long-term deals signed in 2022 are destined

for Europe and expiring long-term contracts are rarely renewed for more than 10 years, participants at the Flame conference said on Tuesday.

“We are seeing aggregators take more of a position”, Cheniere's vice-president for strategy and communication Andrew Walker said, while “Europe is more happy to take spot supply”. But the next crisis is “just a matter of time”, and Europe should not expose itself to spot volatility, Juan Crespo, commercial director of Dunkerque LNG warned.

“Europeans are being extremely complacent” and at risk of competing in a tighter market, Vivek Chandra founder and CEO of liquefaction project developer Gulf Stream LNG said. A lack of interest in long-term contracts has limited the development of new projects, he said. Lots of offtake agreements have been signed over the last year but this has not translated into final investment decisions (FID), Chandra said, as while capital expenditure prices have increased 40-50pc in the last two to three years, tolling fees have remained flat at around \$2.50/mn Btu.

“Europeans are being a little naive”, Chandra said, pointing to the fact that US developers need long-term certainty to develop liquefaction projects, not short-term offtake deals. Nearly all US liquefaction projects are being developed by utilities or entrepreneurial groups, he said, which don't have the luxury of a large balance sheet.

Disagreements on the US' space to grow output

Chandra said that the next wave of projects to reach a FID in the US could be very limited as the US is “running out of space”, a statement that was rebuffed by competitors.

Only Texas and Louisiana have the pipeline infrastructure for rapid development of liquefaction projects, Chandra said.

Of these, Texas has only five deep sea channels and Louisiana has two as well a river, while regulation means that any project needs to be around three to five miles from the nearest community.

But the US will not run out of capacity, Cheniere VP Andrew Walker responded, saying that “expansions will take up the load”. Cheniere has remained focused on expansion, rather than building new greenfield projects. The firm is working on 11.5mn t/yr of new peak export capacity to be rolled out as part of the stage three expansion of Corpus Christi, followed by another 3.3mn t/yr at the facility, and a further 20mn t/yr at Sabine Pass.

By Auguste Breteau

India's RIL, BP offer gas from KG-D6 basin

Indian private-sector refiner Reliance Industries (RIL) and BP are set to auction 6mn m³/d of gas from “difficult fields” located in the KG basin off India's east coast in an e-auction on 19 May, according to a tender notice published on 28 April.

The government considers deepwater, ultra-deepwater as well as high-pressure and high-temperature fields as difficult fields.

Bidders from city gas companies that sell compressed natural gas (CNG) and piped natural gas (PNG) will be given priority in this auction, followed by fertilizer firms, power plants, and finally, other consumers and traders.

Supplies will commence from 1 June, and be delivered over the next three to five years. The gas will be priced based on a formula linked to a northeast Asian spot LNG price, but subject to a government-imposed ceiling price of \$12.12/mn Btu until 30 September.

The gas will flow from RIL's onshore gas terminal at Gadimoga, Andhra Pradesh to Indian gas pipeline operator Pipeline Infrastructure (PIL) 1,375km pipeline which runs from Kakinada in Andhra Pradesh to Bharuch in Gujarat.

The government has capped trading margins on the resale of gas produced from difficult fields. Trading margins for sales to the urea and residential gas industries have been capped at 200 rupees/1000m³ (\$2.45/1,000m³) for 2023, while trading margins for other industries have been pegged in a contract these industries have signed with importer Petronet LNG, at Rs16.62/mn Btu for 2023.

The government has also asked bidders to specify whether they want to purchase gas through the auction for their own use or for trade.

RIL expects natural gas production from the KG-D6 block to rise to 30mn m³/d over the April 2023-March 2024 fiscal year, accounting for 30pc of India's overall gas production and 15pc of the country's gas demand, as it plans to commission the [MJ deepwater gas fields](#) during the April-June 2024 quarter.

India produced 34bn m³ of natural gas in 2022-23, oil ministry data show.

RIL and BP have jointly developed three main gas fields in the KG basin. RIL owns around 67pc of the KG-D6 fields, with the rest owned by BP.

By Rituparna Ghosh

India sets domestic natural gas prices higher for May

India's oil ministry has set the May domestic natural gas price at \$8.27/mn Btu, in line with a new mechanism that sets prices at 10pc of the monthly average of the Indian crude basket.

This marks a 4.4pc increase from April when the oil ministry set natural gas prices slightly lower at \$7.92/mn Btu.

The government approved a revised natural gas pricing mechanism in April, under which domestic gas prices would be revised every month. Prices were previously revised every six months.

But the price for conventional gas produced by state-controlled oil marketing companies such as ONGC and Oil India (OIL) has been set at \$6.50/mn Btu, a ceiling price that will remain in place for the next two years to ensure a stable pricing regime for domestic gas consumers.

This is also to provide adequate protection to producers from adverse market fluctuations and incentivise more production, the oil ministry had previously said.

Gas produced from new wells or well interventions in the nomination fields of ONGC and OIL will be allowed a premium of 20pc to India's administered price mechanism (APM), details of which are yet to be released.

The APM fixes prices of gas sold by state-controlled producers and sets a pricing floor for the industry.

Gas produced from deepwater, ultra-deepwater, high-temperature and high-pressure areas will be priced at \$12.12/mn Btu until 30 September.

India's natural gas production has been rising in recent months. Output totalled 2.9bn m³ in March, up by 3pc from a year earlier, oil ministry data show, although consumption was down by 6pc on the year at 5.1bn m³.

The government has outlined plans to make the country a gas-based economy, with the share of natural gas in its primary energy mix targeted to rise to 15pc by 2030 from around 6pc in 2022.

It also aims to expand domestic gas consumption as it tries to move away from more polluting fuels like coal, in its efforts to cut carbon emissions by 1bn t by 2030 from 2005 levels, progressing towards net zero emissions by 2070.

By Rituparna Ghosh

The global energy transition

As commodity markets evolve, so does our coverage.

Visit the [Argus Energy Transition Hub](#) for the latest news and insights
www.argusmedia.com/energy-transition »

Brazil's LNG demand to fall in 2023

Higher hydroelectric reservoir levels will dampen Brazil's LNG demand in the coming months, while a lack of infrastructure and a still-infant regulatory framework continue to hamper the development of industrial LNG demand.

Two years after the liberalization of the Brazilian gas market, industrial consumers are still struggling to access the free market, leaving prospects for LNG demand still largely a function of power generation needs. After heavy rains throughout 2022 and early 2023, only minimal thermal generation may be needed to plug the supply gap in the power sector.

Brazil's hydropower reservoirs are expected to reach more than 80pc of their collective maximum capacity in May, according to grid operator ONS. The power spot price for clearing (PLD) is expected to be kept at its R69/MWh regulatory bottom until the end of the year, according to Brazil's chamber of electric energy commercialization (CCEE), limiting the changes for thermal generation on merit order, when thermal power generation is priced below other sources.

Strong hydroelectric, wind and solar power generation is set to curb Brazil's thermal power demand this year. Hydro-power generation met 76pc of the country's power load in January, while wind turbines met another 12pc, solar 2.7pc and thermal – including gas, coal, nuclear and others – at 9.1pc.

Many large industrial consumers would be keen to begin importing LNG to improve supply in a market that remains tight, but regulation and a lack of infrastructure are still hampering the development of Brazil's downstream market.

Market participants have flagged the high level of penalties they would have to pay for processing capacity services if they opted to import LNG directly or buy gas directly from producers, rather than purchase volumes from local distributors, and have called for the regulations to be amended. Access rules for essential facilities such as regasification terminals are also still unclear, with no transparency to tariffs and costs.

Limited pipeline connections between existing LNG terminals and the distribution grid are also hampering market development. Pipeline operator TAG has agreed to build a 14mn m³/d pipeline linking the gas network to the Porto de Sergipe terminal, but that is not expected to start operating before April 2024.

A deal to build a pipeline connecting the GNA terminal and the distribution network in Rio de Janeiro state is still being negotiated.

New capacity may support demand

Additional LNG import capacity is under construction and

could provide some support to LNG demand later this year, although it is likely to be limited.

Three terminals under construction in Brazil are slated to start operations in 2023 and 2024. Project developer Compass expects the 4mn t/yr TSRP import project in Sao Paulo state – which has a gas supply agreement with the largest distribution company in the state, Comgas – to start operations in the second half of this year.

US-based firm New Fortress Energy is building two other terminals: the Barcarena facility in Maranhao state and a second one in Santa Catarina state, at Baia de Babitonga, with no updated timelines having been announced.

By Flavia Pierry

US' Elba Island LNG terminal eyes capacity increase

The US' Elba Island LNG terminal is eyeing a 400,000 t/yr expansion by modifying its gas treatment facilities.

The terminal has a baseload capacity of 2.5mn t/yr, which it is seeking to expand to 2.9mn t/yr by enabling greater uptime and less flaring on its 10 modular liquefaction trains. It is unclear if the facility's 4mn t/yr peak capacity would be affected.

Elba Island's output has been impeded by downtime stemming from a need to remove heavier hydrocarbons from its liquefaction units, but intends to retrofit some gas treatment units at the 10 modular train to reduce fouling and build a gas condensate plant to receive the hydrocarbons separated by the treatment units.

Operator Southern LNG is targeting regulatory approval by 1 May 2024, so that the modifications can be implemented by 1 August 2024.

Argus Clean Ammonia North America Conference

June 6-8, 2023 | Houston, Texas

Meet market makers and explore the commercial future of clean ammonia in the Americas



www.argusmedia.com/clean-ammonia-north-america

Fertilizers
illuminating the markets®

The terminal has a long-term regulatory approval to export 2.86mn t/yr to countries that the US does not have a free trade agreement with, and in March received short-term approval to export 4mn t/yr over the next two years. The terminal also has long-term authorisation to export 4mn t/yr to countries that the US does have a free trade agreement with, but most LNG importers are non-FTA countries.

Exports from the facility have held below the terminal's baseload capacity in recent years. Exports in 2022 were 2.1mn t, up from 1.5mn t in 2021, according to data from Vortexa.

Shell is the sole offtaker from the facility, having a 2.5mn t/yr fob contract from the facility that runs until 2040. The additional volumes could allow Southern LNG to offer some additional cargoes to other market participants.

By Martin Senior

Hyundai Heavy wins orders for six new LNG carriers

South Korean shipbuilder Hyundai Heavy Industries has received two orders to build a total of six LNG carriers.

An unnamed Australasian shipowner has ordered two LNG carriers at a value of 742bn won – equivalent to \$277mn per vessel. The vessels are set to be delivered by the end of November 2027.

This is close to the most expensive LNG order per vessel ever placed at a South Korean shipyard, with recent orders mainly around \$250mn-260mn per vessel. Historically, only specialised Arc7 ice-class LNG carriers – for use with Russian liquefaction terminals – have been priced higher than this order, at \$294mn-350mn per vessel.

The higher price for this order could be because vessels with larger storage capacities have been requested. Carriers built in recent years have tended to have capacities of around 174,000m³.

The other order was placed by an unnamed European shipowner and was valued at 1.4 trillion won for four LNG carriers, or \$263mn per vessel. The carriers are set to be delivered by the end of September 2027.

The last order the shipyard received was for three carriers at \$261mn per vessel in January.

Hyundai Heavy is a subsidiary of HD Korea Shipbuilding and Marine Engineering – formerly called Korean Shipbuilding and Offshore Engineering (KSOE).

By Martin Senior

Energy transition, Nigerian style

Nigeria's incoming government aims to stick with a national plan to use natural gas to balance international climate concerns against its need for economic development, a policy

that will require foreign and indigenous upstream operators to manage their own balancing acts in the years ahead.

Nigeria's energy transition plan aims to use the country's relatively low historical CO₂ emissions as a starting block, and abundant natural gas reserves to power a race against time. The country has 135 years of gas reserves, but the industry consensus is that the window for financing projects will close within the next 30 years. Nigeria has proven gas reserves of 209 trillion ft³ (5.9 trillion m³), but projects that it can raise that figure to 600 trillion ft³.

The outgoing administration of President Muhammadu Buhari declared 2021-30 Nigeria's "decade of gas", and upstream operators are looking to president-elect Bola Tinubu to continue this policy when his administration takes office on 29 May. National energy transition goals include electricity, clean cooking and industrialisation, with the aim of providing electricity and LPG to 2mn households every year until energy poverty is eradicated. Policy makers expect oil and gas sector revenues to fund the transition, at the same time as the country's upstream operators are reshaping their own strategies to realise the plan.

The Nigerian heads of leading foreign operators Shell, ExxonMobil, Chevron, TotalEnergies and Eni all say their goal is to produce enough gas to meet domestic supply obligations – for gas-to-power projects, industry and fertiliser plants – as well as exports. Ending routine gas flaring has been key – Chevron says it has eliminated 97pc of its flared gas over the past 10 years, and TotalEnergies will eliminate all routine flaring in its Nigeria operations by the end of this year.

But foreign operators warn that Abuja's unpaid debts for past gas supply – with around \$200mn owed to Shell, and a similar amount to Chevron – may be a hurdle to new investment. Domestic gas pricing is another concern. Although operators agree Nigeria's 18-month-old [Petroleum Industry Act](#) could soon provide some fiscal certainty with its gas pricing provisions, Abuja has only just begun to introduce its regulations. Against this backdrop, Nigeria LNG (NLNG) – jointly owned by state-owned NNPC, Shell, TotalEnergies and Eni, and in the process of adding a [seventh production train](#) to boost LNG capacity to 30mn t/yr by 2026 from 22mn t/yr now – says its growth strategy will be to direct its LPG production to the domestic market while expanding LNG exports.

Model reform

But some indigenous operators want NLNG to continue to export its LPG output, leaving the domestic supply of LPG to them. As Nigeria aims to end all associated gas flaring by 2025, local upstream independents are increasingly processing gas to supply by pipeline to local and regional industry, and investing in new LPG capacity.

London-listed Seplat Energy plans to add 400mn ft³/d (4.1bn m³/yr) of processing capacity to its existing 375mn ft³/d and stop flaring gas in 2024.

Foreign operators see their ongoing shift from Nigerian onshore and shallow-water assets to deepwater fields – where their unit operating costs are about \$25/bl and \$15/bl, respectively – as key to their financing of Nigerian gas investments. Indigenous firms are expected to control 100pc of Nigeria's onshore and shallow-water assets by 2025, and some are calling for the government to manage this shift by helping them to increase capacity while weeding out poorly managed companies from the sector. They cite Abuja's reform of the banking sector in 2004-05 – which saw the number of Nigerian banks drop to 25 from 89, but the average bank balance sheet rise by 1,150pc – as a model to follow.

Woodside gas project faces fresh scrutiny

Australian independent Woodside Energy's Scarborough gas project will face greater scrutiny over its impact on the World Heritage-listed Great Barrier Reef, after the Federal Court of Australia dismissed the company's attempt to have a legal challenge dismissed.

The Australian Conservation Foundation (ACF) last June filed an injunction seeking to have the climate effects of Woodside's LNG development in Western Australia's (WA) Carnarvon basin analysed under federal law. The case is now listed for a management hearing on 7 June.

Woodside says the \$12bn, 30pc complete project is critical to maintaining production at its Pluto LNG train 1, while a second train will process the majority of an estimated 8mn t/yr in LNG exports.

Projects assessed by the National Offshore Petroleum Safety and Environmental Management Authority are typically exempt from federal environmental law. But the ACF argues the law requires assessment because of the project's emissions risking the health of the reef, which biologists say will struggle to cope with further ocean warming. Woodside said the project will reduce Asian nations' reliance on dirtier, coal-fired energy and that the Scarborough field is estimated to contain only 0.1pc of carbon dioxide (CO₂).

Woodside forecasts the project will emit 28.5mn t/yr of CO₂e across scopes 1, 2 and 3 mainly through its customers. ACF documents claim the total emissions will result in a 0.000394°C increase in global average sea surface temperature, which will result in the death of millions of coral during a bleaching event.

Lower Australian courts have begun recommending against fossil fuel projects on the basis of CO₂ emissions in recent years, with the Alpha North thermal coal project in Queensland struck down by the state's Land Court. But the

previous Liberal-National federal government last year won an appeal against a [previous Federal Court ruling](#) that it was required to consider the future effect of emissions on the nation's youth when assessing new mines.

Woodside maintains it will produce the first LNG from Scarborough in 2026. But the project has faced [significant legal battles](#) with two court challenges surrounding Pluto 2 dismissed last year and another [continuing in WA's Supreme Court](#). A Federal Court decision halting the development of fellow Australian independent Santos' Barossa gas field has [affected cultural site permits](#) needed for offshore projects.

By Tom Major

Delayed Trinidad deepwater PSCs pending

A seven-month delay in Trinidad and Tobago awarding four deepwater block production sharing contracts (PSC) caused by "technical and commercial considerations" may soon be drawing to an end, energy minister Stuart Young said last week.

A consortium of BP and Shell, the country's top gas producers, [made bids in June 2022 for four of 17 deepwater blocks](#) offered in a competitive round. The ministry had promised to announce the results in September.

"The negotiations are in the final stages and the report and recommendations are expected to be submitted shortly for the consideration of the government," Young told the country's parliament.

The government is seeking to reverse a 22-year decline in gas production that has thwarted the Caribbean country's LNG, petrochemical and fertilizer industries.

Neither BP nor Shell commented on Young's statement.

Young told the country's parliament last week the improved viability of deep-water projects and tightening supply are driving the market, but volatile crude prices and industry instability are also challenges.

This is the Caribbean country's second effort to encourage hydrocarbon production from its deepwater acreage. Australian firm Woodside operates nine deepwater blocks awarded by the energy ministry in 2014.

The deepwater blocks BP and Shell bid on are off the northern and north-eastern coasts of Trinidad and east and north of Tobago.

The energy ministry is also [considering 16 bids from eight potential operators](#) for eight of 11 onshore blocks in a round that closed in January. Those blocks are in the central range, the southern basin and the southern range of Trinidad, the energy ministry said. The award of the onshore blocks is "imminent," the ministry told *Argus* on 28 April.

The ministry asked prospective bidders in September to [nominate shallow-water acreage](#) for a bid round to be held

by the end of the second quarter of this year.

The country's natural gas output reached 2.68 Bcf/d in 2022, 4.2pc higher than 2021. Crude production was 58,436 b/d in 2022, down by 2.3pc from 2021.

By Canute James

Japan's power demand falls in April

Japanese electricity consumption in April was lower against a year earlier, as the early onset of warm spring weather reduced demand for heating purposes. This reduced consumption was despite a gradual recovery in the country's economic activity.

Japan's power demand averaged 85GW in April, down by 5pc from a year earlier, according to nationwide transmission system operator the Organisation for Cross-regional Co-ordination of Transmission Operators. This was also lower by 8pc from March.

Large parts of Japan experienced warmer than usual weather in April, especially during the first half of the month. Temperatures in the country's 10 main cities averaged 15.09°C across 1-15 April, up by 0.7°C from the same period of 2022, according to the Japan Meteorological Agency. Temperatures in the cities averaged 15.48°C in April, up by just 0.03°C from a year earlier and higher by 3.29°C against the previous month.

The weaker power consumption came despite a steady recovery in industrial output from Covid-19 induced slumps. Japan's seasonally adjusted index of production in March was 95.7 against the 2015 base of 100, according to preliminary data released by the trade and industry ministry (Meti) on 28 April.

Industrial output in April was forecast to grow by 4.1pc from the previous month. This suggests the index would rise to 99.62 in April, up by 4.8pc from a year earlier. This also implies power demand in April from the industrial sector was firmer from a year earlier.

Power demand in Japan is partly met by electricity supplies bought through the Japan Electric Power Exchange (Jepx). Jepx delivered 19.6TWh, or 27GW, of electricity during April, down by 11pc from a year earlier.

Softer power demand and more nuclear availability in April likely weighed on thermal power generation. The monthly average of operational nuclear capacity was around 8.4GW in April, up by 3.4GW from a year earlier, according to an Argus survey based on the Jepx data. The increase could theoretically reduce LNG demand by around 321,000 t/month, assuming it displaces output from gas-fired plants with an average 50pc efficiency.

Japan's power sector produced 45TWh of electricity from thermal power plants in April 2022, including 18.1TWh of coal, 21.4TWh of gas and 1.7TWh of oil, Meti data show.

By Motoko Hasegawa

Aus's APLNG output stable on quarter in Jan-Mar

Drier weather at wells supplying the 9mn t/yr Australia Pacific LNG (APLNG) plant held its January-March output stable from the previous quarter, according to Australian independent Origin Energy.

APLNG production was stable from the [previous quarter](#), with higher average daily production rates and lower non-operated production owing to planned outages. The plant exported 165PJ for January-March, slightly down from 165.6PJ in October-December 2022, as there were two fewer days during the quarter. There were two LNG spot cargoes shipped for the quarter, down by one from the previous quarter, as prices continued to soften because of a mild northern hemisphere winter and high storage levels.

Origin benefited from lower energy purchase costs during the quarter as a result of Australia's [east coast price cap](#) of A\$125/t (\$83/t) on coal. The firm operates Australia's largest power station, the 2,880MW Eraring coal-fired power plant that is located 120km north of Sydney. Origin could benefit

APPENDIX

Full methodology of oil-linked LNG prices available at <http://www.argusmedia.com/methodology-and-reference/>. A subset of the oil-linked LNG prices are published in the print edition of Argus LNG Daily. The full series is available electronically.

Oil-linked LNG on six-month crude average (601) contract (28 Apr 2023)										\$/mn Btu
Delivery	10pc	10.5pc	11pc	11.5pc	12pc	12.5pc	13pc	13.5pc	14pc	14.5pc
Jun	8.54	8.96	9.39	9.82	10.25	10.67	11.10	11.53	11.95	12.38
Jul	8.30	8.72	9.13	9.55	9.96	10.38	10.80	11.21	11.63	12.04
Aug	8.13	8.54	8.94	9.35	9.75	10.16	10.57	10.97	11.38	11.79
Sep	8.11	8.51	8.92	9.33	9.73	10.14	10.54	10.95	11.35	11.76
Oct	8.03	8.43	8.84	9.24	9.64	10.04	10.44	10.84	11.25	11.65
Nov	7.96	8.35	8.75	9.15	9.55	9.95	10.34	10.74	11.14	11.54
3Q23	8.18	8.59	9.00	9.41	9.81	10.23	10.63	11.04	11.45	11.86
4Q23	7.98	8.37	8.78	9.18	9.58	9.97	10.37	10.77	11.17	11.57
1Q24	7.88	8.27	8.66	9.06	9.45	9.85	10.24	10.63	11.03	11.42
2Q24	7.75	8.14	8.53	8.91	9.30	9.69	10.08	10.47	10.85	11.24
2024	7.71	8.10	8.48	8.87	9.25	9.64	10.02	10.41	10.79	11.18
2025	7.37	7.74	8.11	8.48	8.85	9.22	9.58	9.95	10.32	10.69

Oil-linked LNG on three-month crude average (301) contract (28 Apr 2023)										\$/mn Btu
Delivery	10pc	10.5pc	11pc	11.5pc	12pc	12.5pc	13pc	13.5pc	14pc	14.5pc
Jun	8.23	8.64	9.05	9.46	9.87	10.28	10.69	11.10	11.52	11.93
Jul	8.08	8.48	8.88	9.29	9.69	10.10	10.50	10.90	11.31	11.71
Aug	7.97	8.37	8.77	9.16	9.56	9.96	10.36	10.76	11.16	11.56
Sep	7.99	8.39	8.79	9.19	9.59	9.99	10.39	10.79	11.19	11.59
Oct	7.99	8.39	8.79	9.19	9.59	9.99	10.39	10.79	11.19	11.59
Nov	7.95	8.34	8.74	9.14	9.53	9.93	10.33	10.73	11.12	11.52
3Q23	8.01	8.41	8.81	9.21	9.61	10.02	10.42	10.82	11.22	11.62
4Q23	7.95	8.34	8.74	9.14	9.53	9.93	10.33	10.73	11.12	11.52
1Q24	7.81	8.20	8.59	8.98	9.37	9.76	10.15	10.54	10.93	11.32
2Q24	7.70	8.08	8.46	8.85	9.24	9.62	10.00	10.39	10.77	11.16
2024	7.66	8.04	8.42	8.81	9.19	9.57	9.95	10.34	10.72	11.10
2025	7.34	7.70	8.07	8.44	8.81	9.17	9.54	9.90	10.27	10.64

Oil-linked LNG on three-month crude average with one month lag (311) contract (28 Apr 2023)										\$/mn Btu
Delivery	10pc	10.5pc	11pc	11.5pc	12pc	12.5pc	13pc	13.5pc	14pc	14.5pc
Jun	8.29	8.70	9.12	9.53	9.95	10.36	10.77	11.19	11.60	12.02
Jul	8.23	8.64	9.05	9.46	9.87	10.28	10.69	11.10	11.52	11.93
Aug	8.08	8.48	8.88	9.29	9.69	10.10	10.50	10.90	11.31	11.71
Sep	7.97	8.37	8.77	9.16	9.56	9.96	10.36	10.76	11.16	11.56
Oct	7.99	8.39	8.79	9.19	9.59	9.99	10.39	10.79	11.19	11.59
Nov	7.99	8.39	8.79	9.19	9.59	9.99	10.39	10.79	11.19	11.59
3Q23	8.09	8.50	8.90	9.30	9.71	10.11	10.52	10.92	11.33	11.73
4Q23	7.98	8.37	8.77	9.17	9.57	9.97	10.37	10.77	11.17	11.57
1Q24	7.85	8.25	8.64	9.03	9.42	9.82	10.21	10.60	10.99	11.39
2Q24	7.73	8.12	8.50	8.89	9.28	9.66	10.05	10.44	10.82	11.21
2024	7.69	8.08	8.46	8.84	9.23	9.61	10.00	10.39	10.77	11.15
2025	7.36	7.73	8.10	8.47	8.83	9.20	9.57	9.94	10.31	10.67

Oil-linked LNG on previous-month crude average (101) contract (28 Apr 2023)										\$/mn Btu
Delivery	10pc	10.5pc	11pc	11.5pc	12pc	12.5pc	13pc	13.5pc	14pc	14.5pc
Jun	7.92	8.32	8.71	9.11	9.51	9.90	10.30	10.69	11.09	11.49
Jul	7.95	8.35	8.75	9.15	9.54	9.94	10.34	10.74	11.14	11.53
Aug	8.03	8.43	8.84	9.24	9.64	10.04	10.44	10.84	11.25	11.65
Sep	7.99	8.39	8.79	9.19	9.59	9.99	10.39	10.79	11.19	11.59
Oct	7.95	8.34	8.74	9.14	9.54	9.93	10.33	10.73	11.12	11.52
Nov	7.90	8.29	8.69	9.08	9.48	9.87	10.27	10.66	11.06	11.45
3Q23	7.99	8.39	8.79	9.19	9.59	9.99	10.39	10.79	11.19	11.59
4Q23	7.90	8.29	8.69	9.08	9.48	9.87	10.27	10.66	11.06	11.45
1Q24	7.77	8.15	8.54	8.93	9.32	9.71	10.10	10.48	10.87	11.26
2Q24	7.66	8.05	8.43	8.81	9.20	9.58	9.96	10.35	10.73	11.11
2024	7.63	8.01	8.39	8.77	9.15	9.53	9.91	10.29	10.67	11.06
2025	7.31	7.68	8.05	8.41	8.78	9.15	9.51	9.87	10.24	10.61

Crude oil forward prices												\$/bl
	Jul 2023	Aug 2023	Sep 2023	Oct 2023	Nov 2023	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024
Argus Calculated Japanese Crude Cocktail	85.68	87.63	87.29	86.89	86.44	86.03	85.66	85.33	85.02	84.72	84.43	84.13
Ice Brent (Singapore close)	79.02	78.65	78.21	77.74								

Months 13-24 available to LNG Daily data subscribers. Months 25-47 available to Asia Crude Oil Forward Curves subscribers.

JAPAN, KOREA AND TAIWAN LNG PRICES

Argus Japan, South Korea, Taiwan des spot LNG					\$/mn Btu
	Delivery	Bid	Offer	Mid	±
Japan, South Korea, Taiwan	1H Jun	10.69	11.51	11.100	-0.145
	2H Jun	10.80	11.62	11.210	-0.175
	1H Jul	10.98	11.79	11.385	-0.195
	2H Jul	11.08	11.90	11.490	na



Argus LNG Daily is published by Argus Media group

Registered office
Lacoin House, 84 Theobald's Road,
London, WC1X 8NL
Tel: +44 20 7780 4200

ISSN: 2046-2301

Copyright notice
Copyright © 2023 Argus Media group
All rights reserved
All intellectual property rights in this publication and the information published herein are the exclusive property of Argus and/or its licensors (including exchanges) and may only be used under licence from Argus. Without limiting the foregoing, by accessing this publication you agree that you will not copy or reproduce or use any part of its contents (including, but not limited to, single prices or any other individual items of data) in any form or for any purpose whatsoever except under valid licence from Argus. Further, your access to and use of data from exchanges may be subject to additional fees and/or execution of a separate agreement, whether directly with the exchanges or through Argus.

Trademark notice
ARGUS, the ARGUS logo, ARGUS MEDIA, INTEGER, ARGUS LNG DAILY, other ARGUS publication titles and ARGUS index names are trademarks of Argus Media Limited.
Visit www.argusmedia.com/Ft/trademarks for more information.

Disclaimer
The data and other information published herein (the "Data") are provided on an "as is" basis. Argus and its licensors (including exchanges) make no warranties, express or implied, as to the accuracy, adequacy, timeliness, or completeness of the Data or fitness for any particular purpose. Argus and its licensors (including exchanges) shall not be liable for any loss, claims or damage arising from any party's reliance on the Data and disclaim any and all liability related to or arising out of use of the Data to the full extent permissible by law.

All personal contact information is held and used in accordance with Argus Media's Privacy Policy
<https://www.argusmedia.com/en/privacy-policy>

Publisher
Adrian Binks

Chief operating officer
Matthew Burkley

Global compliance officer
Jeffrey Amos

Chief commercial officer
Jo Loudiadis

President, Expansion Sectors
Christopher Flook

Global head of editorial
Neil Fleming

Editor in chief
Jim Washer

Managing editor
Andrew Bonnington

Editor
Samuel Good
Tel: + 44 207 780 4293
lng@argusmedia.com

Customer support and sales:

support@argusmedia.com
sales@argusmedia.com

London, Tel: +44 20 7780 4200

Houston, Tel: +1 713 968 0000

Singapore, Tel: +65 6496 9966



Natural gas/LNG

illuminating the markets®