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NEW CARBON NEUTRAL

LNG DAILY

Volume 18 / Issue 219 / November 8, 2021

JKM rises following higher prices in the Atlantic

KEY DRIVERS / MARKET HIGHLIGHTS

- APLNG issues sell tender for Dec. 28 loading
- Asia-Pacific physical MOC: Three bids from BP, Trafigura, Vitol
- Russian gas flows through Mallnow recorded lower
- Panama Canal wait for unreserved bookings rises

SHIPPING MARKET HIGHLIGHTS

- Day rates increase to \$260,000/day in Pacific
- LNG Ogun fixed by Vitol for voyage at \$150,000/d

NEWS HEADLINES

 Downstream demand due to cooler weather supports European
LNG prices3
■ LIK povernment denies report it asked Oatar for additional LNC

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SHIPPING RATES, NOV 8

		\$/day	В.	allast rate	
Asia Pacific day rate	AARXT00	260,000	AAXTN00	100%	
Atlantic day rate	AASYC00	195,000	AAXTM00	100%	
TCR Australia-Japan	ATCRA00	260,000.00			
TCR USG-NWE	ATCRB00	195,000.00			
TCR USG-Japan	ATCRC00	195,000.00			

DAILY CUMULATIVE AVERAGES AND MONTHLY AVERAGES

Nov 8 (\$/MMBtu)	m	Cumulativ onthly aver			Previous month avera	ge
JKM	AAOVS00	32.163	Dec	AAOVS03	33.254	Nov
DES West India	AALIC00	30.107	Dec	AAWIC03	31.934	Nov
DES Mediterranean	AADCU00	27.933	Dec	AASWC03	29.207	Nov
DES Northwest Europe	AASDF00	27.993	Dec	AASDE03	29.202	Nov
FOB GCM Loading Month	LGCSM00	25.081	Dec	LGCSM31	27.329	Nov
JKM Yen	AAOVT00	3663.720	Dec	AAOVT03	3707.118	Nov
JKM Yuan	LJCWM00	205.927	Dec	LJCWM03	189.189	Nov

JKM [™]	AAOVQ00	31.864	+1.558	
Cumulative monthly average (Dec)	AAOVS00	32.163		
Previous month average (Nov)	AAOVS03	33.254		
CNL WTW JKTC	ACNLF00	0.831		

DI ATTO DAILVI NIC MADREDO (&/MMD+..)

PLATTS DAILY LNG MARKER	(2 (2) MINE	stuj		
Nov 8 DES Japan/Korea Marker (JKM)			Change	
JKM (Dec)	AAOVQ00	31.864	1.558	
H1 Dec	AADVQ00	31.575	1.496	
H2 Dec	AAPSV00	32.152	1.620	
H1 Jan	AAPSW00	32.733	1.691	
H2 Jan	AAPXA00	32.775	1.675	7
JKM (Dec) Japanese Yen	AAOVR00	3617.520	169.000	
JKM (Dec) Chinese Yuan (CNY/mt)		10597.546	514.861	
DES Japan/Korea (JKM) derivatives Si			01.1.001	
Balmo-ND	LJKMB00	31.809	2.407	
Dec	LJKM000	32.075	0.725	
Jan	LJKM001	32.400	1.125	
Feb	LJKM002	30.425	1.625	_
DES Japan/Korea (JKM) derivatives Lo				
Dec	JKLM000	32.000	1.516	_
Jan	JKLM001	32.484	2.075	
Feb	JKLM002	30.759	2.309	
DES Mediterranean Marker (MED)				
MED (Dec)	AASXY00	26.825	1.578	
H1 Dec	AASXZ00	26.725	1.603	
H2 Dec	AASYA00	26.925	1.553	
H1 Jan	AASYB00	26.961	1.527	_
DES Northwest Europe Marker (NWE)				
NWE (Dec)	AASXU00	26.825	1.503	
H1 Dec	AASXV00	26.725	1.503	_
H2 Dec	AASXW00	26.925	1.503	4
H1 Jan	AASXX00	26.961	1.377	-
Middle East Marker (MEM)				
MEM (Dec)	LMEMA00	29.663	1.563	
H1 Dec	LMEMB00	29.375	1.500	_
H2 Dec	LMEMC00	29.950	1.625	-
H1 Jan	LMEMD00	30.525	1.675	4
H2 Jan	LMEME00	30.575	1.675	4
DES West India Marker (WIM)				
WIM (Dec)	AARXS00	29.663	1.563	
H2 Nov	LMEAA00	29.275	1.500	
H1 Dec	LMEAB00	29.375	1.500	_
H2 Dec	LMEAC00	29.950	1.625	4
H1 Jan	LMEAD00	30.525	1.675	4
H2 Jan	LMEAE00	30.575	1.675	4
DES West India Marker (WIM) derivativ	es Singapore	close*		
Dec	AWIMB00	30.000	0.925	
Jan	AWIMM01	30.775	0.875	_
Feb	AWIMM02	29.025	1.525	
FOB Gulf Coast Marker (GCM)				
GCM	LGCSM01	24.500	1.500	

*For full forward curve, see page 4

LNG NETBACK PRICES (\$/MMBtu)

	- ,			
Nov 8			Change	
FOB Australia	AARXR00	29.420	1.450	
FOB Middle East	AARXQ00	28.800	1.650	_
DES Brazil Netforward	LEBMH01	27.140	1.500	_
FOB Singapore	AARXU00	30.014	1.508	_
FOB Murmansk	AARXV00	25.845	1.483	_





PLATTS LNG ASIA JKM RATIONALE & EXCLUSIONS

The S&P Global Platts JKM for December was assessed at \$31.864/MMBtu Nov. 8. Platts assessed the first half of December at \$31.575/MMBtu and H2 December at \$32.152/MMBtu, with a wider intramonth contango structure of 57.7 cents/MMBtu Nov. 8, compared to a contango of 45.3 cents/MMBtu Nov. 5.

The value for Jan. 6 was assessed at \$32.78/MMBtu, above Trafigura's bid for a Jan. 5-7 DES JKTC cargo at \$33.10/MMBtu, with GHV of 1,037-1,125 Btu/cu ft, which was normalized 33 cents lower on a smaller GHV range, smaller volume and later discharge port nomination within the same country, equating to a fixed price of \$32.77/MMBtu.

BP placed a bid for a Dec. 12-16 DES JKTC cargo at TTF December full-month average plus \$3.50/MMBtu, with a GHV of 1,030-1,110 Btu/cu ft and quantity of 3.3 TBtu. It was normalized 33 cents lower on lower maximum GHV and smaller volume, equating to a fixed price of \$29.506/MMBtu.

Vitol placed a bid for a Dec. 27-31 DES JKTC cargo at TTF December full-month average plus \$3.60/MMBtu, with a GHV of 1,000-1,110 Btu/cu ft, which was

normalized 8 cents lower on lower maximum GHV limit compared with the Platts standard of 1,030-1,130 Btu/cu ft, and equated to a fixed price of \$29.856/MMBtu.

During the derivatives Platts Market on Close assessment process, PetroChina placed the most competitive offer for 25 lots of January JKM derivative at \$32.45/MMBtu and BP placed the most competitive bid for 25 lots at \$32.35/MMBtu. Platts assessed January JKM Singapore at \$32.400/MMBtu at the Asian close Nov. 8, above the bid and below the offer.

Platts valued TTF December full-month average at 4:30 pm Singapore time at \$26.336/MMBtu, based on a 3.5 euro cent/MWh differential between the December balance of month and January TTF spread.

Platts valued ICE TTF January at 4:30 pm Singapore time at \$26.950/MMBtu, based on a \$5.45/MMBtu differential between JKM Jan and TTF Jan. This rationale applies to symbol(s) <AAOVQ00>

Exclusions: No market data was excluded from the Nov. 8 assessment.

PLATTS LNG ASIA WIM RATIONALE & EXCLUSIONS

The S&P Global Platts WIM for December was assessed at \$29.663/MMBtu Nov. 8. Platts assessed the first-half and second-half December at \$29.375/MMBtu and \$29.950/MMBtu, respectively, with a wider intramonth contango of 57.5 cents/MMBtu, compared with 45 cents/MMBtu Nov. 5.

Uniper placed an offer for a Dec. 27-28 DES India cargo at TTF Dec full-month average plus 2.20/MMBtu, with a GHV of 1,025-1,130 Btu/cu ft and quantity of 3.4 TBtu.

The offer was normalized 30 cents higher on the exclusion of Dubai and Kuwait on discharge port, two-day delivery window, larger volume, and earlier nomination of an alternate discharge port, equating to a fixed price of \$29.450/ MMBtu.

Platts assessed the December JKM/WIM spread at 2.201/MMBtu Nov. 8. This rationale applies to symbol(s) AARXS00.

Exclusions: No market data was excluded from the Nov. 8 assessment.

PLATTS LNG US FOB GULF COAST DAILY RATIONALE & EXCLUSIONS

The FOB Gulf Coast Marker (GCM) was assessed at \$24.50/MMBtu Nov. 8. The assessment was for FOB USGC cargoes loading 30 to 60 days forward. The market was assessed in line with high freight rates for shipments through the Atlantic and Pacific, due in part to long maximum wait times at the Panama

Canal for unreserved LNG tankers, and strengthening price movements in the major destination markets by close.

This rationale applies to symbol(s) <LGCSM01>.

Exclusions: None.

PLATTS LNG EUROPEAN ASSESSMENT RATIONALE & EXCLUSIONS

The Northwest Europe Marker (NWE) for December was assessed Nov. 8 at 26.825/MMBtu

H1 NWE for December was assessed at \$26.725/MMBtu H2 NWE for December was assessed at \$26.925/MMBtu

The NWE prices were assessed higher day on day reflecting higher flat prices for December TTF. The TTF December contract fell from an intraday high of Eur81.000/MWh to Eur78.240/MWh at market close. NBP/TTF premiums fell to an intraday high of \$0.620/MMBtu. Toward market close, gains in the December TTF contract led to NBP/TTF premiums falling to \$0.399/MMBtu at 4:30 pm London time. Market sources said that weakening NBP/TTF premiums in recent weeks have made the UK a less attractive market for cargoes. LNG storage levels in the UK looked strong as inflows into the Dragon LNG terminal offset withdrawals from South Hook and Isle of Grain, according to data from the

National Grid. Market participants reported bids for NWE H2 December at a flat price to TTF. However, sources said that a wide bid/offer spread was present in the market.

The Mediterranean Marker (MED) for December was assessed at \$26.825/MMBtu H1 MED for December was assessed at \$26.725/MMBtu

H2 MED for December was assessed at \$26.925/MMBtu

The MED price was assessed higher day on day. MED prices were assessed flat to NWE, with comparable premiums into both UK and Spanish gas hubs. PVB/TTF December premiums were assessed at 28 cents/MMBtu on Nov. 5. The assessments were based on pricing information from market sources for

cargoes delivering within the region for December delivery.

This rationale applies to symbol(s) <AASXU00, AASXY00> Exclusions: None

MARKET COMMENTARIES

JKM rises following higher prices in the Atlantic

Asian LNG prices rose following supply uncertainty and higher prices in the Atlantic basin Nov. 8.

The S&P Global Platts JKM for December was assessed at \$31.864/MMBtu Nov. 8.

Platts assessed the first half of December at \$31.575/MMBtu and the second half of December at \$32.152/MMBtu, with a wider intramonth contango of 57.7 cents/MMBtu Nov. 8, compared with a contango of 45.3 cents/MMBtu Nov. 5.

"Last week was weak, but this week, a lot of sellers are adopting a wait-and-see approach. I think there could be potential demand from Japan," a trader based in Singapore said. Some market participants spoke of supply uncertainty stemming from Bintulu and Freeport, which could potentially lead to additional spot buying interest from some Asian importers.

On the other hand, cargo availability for December and January remained healthy. "There are more enquiries from buyers but there are also many offers in the market, so hard to say", a Japan-based trader said.

On Nov. 8, APLNG issued a sell tender for Dec. 28 loading cargo, however, the closing date was not determined at the time of reporting, according to multiple sources.

In the week of Nov. 1, Algeria sold two FOB cargoes for Nov. 4

Date	Seller	Loading		Buyer	Basis	Loading window	Offer/Bid	Notes
Best bids/offer	rs							
Nov 08		Northwest Euro	ope delivery		DES	H2 Dec	TTF flat bid	
REPORTED	APAC BIDS, OFFE	RS AND TRADE	S (\$/MMBtu)					
Date	Buyer	Destination	Seller	Source	Basis	Delivery period	Bid/Offer	Notes
Best bids/offer	rs							
Nov 08	BP	JKTC			DES	Dec 12-16	Dec TTF+3.5 bid	MOC
Nov 08	Vitol	JKTC			DES	Dec 27-31	Dec TTF+3.6 bid	MOC
Nov 08	Trafigura	JKTC			DES	Jan 5-7	33.10 bid	MOC
Nov 08		India	Uniper		DES	Dec 27-28	Dec TTF+2.20 offer	MOC
Nov 08		JKTC	Uniper		DES	Jan 1-3	Jan JKM+0.21 offer	MOC
Last 5 trades		APAC						
Oct 26	PTT	Thailand		Qatar	DES	Nov 27-29, Dec 3-5	low-33	Tender
Oct 26	Shell, Total		EGAS	Egypt	FOB	Nov 14-15, Nov 24-25	28.25, 28.70	Tender
Oct 22	Vitol	JKTC	PetroChina		DES	Dec 6-8	Dec TTF plus 3.05 traded offer	MOC
Oct 21	Vitol	JKTC	PetroChina		DES	Dec 7-11	Dec TTF plus 3.45 traded bid	MOC
Oct 21	PetroChina	JKC	Shell		DES	Dec 10-12	Dec TTF plus 3.00 traded offer	MOC

loading and Nov. 8 loading to a portfolio player and a trader, respectively, according to three sources. Traders were of the view that these cargoes are likely to head to Europe rather than Asia due to rising shipping rates.

Meanwhile, supply uncertainty from Malaysia concerned many Japanese importers. "As of now, we have a buffer even if we face a harsher winter. But if we lose even more cargoes, it could wipe out our revenue", a Japanese importer said.

Small and medium-size Japanese importers continued to apply pressure to have their December-March cargoes delivered, while some larger Japanese importers have begun seeking alternate sources.

"Some Japanese importers are still busy figuring out their December-delivery cargoes, they haven't shifted their focus for January delivery yet," a supplier said.

Multiple market participants said that a Chinese importer also received DQT notice from Petronas for January delivery, although this could not be confirmed at the time of publication.

Further down the curve, three sources said an independent Korean importer could potentially buy a January cargo, although this requirement is not firm yet.

During the physical Platts Market on Close assessment process, BP placed a bid for Dec. 12-16 delivery at Dec. TTF plus \$3.50/MMBtu, with a volume of 3.3 TBtu and GHV of 1,030-1,110 Btu/cu ft.

Vitol placed a bid for Dec. 27-31 delivery at Dec. TTF plus \$3.60/ MMBtu/MMBtu, with a volume of 3.4 TBtu and GHV of 1,000-1,110 Btu/cu ft.

For Jan. 5-7 delivery, Trafigura placed a bid at \$33.10/MMBtu, with a volume of 3.3 TBtu and GHV of 1,037-1,125 Btu/cu ft.

Uniper offered a Dec. 27-28-delivery cargo to India at Jan. TTF plus \$2.20/MMBtu, with a volume of 3.4 TBtu and GHV of 1,025-1,130 Btu/cu ft.

Further down the curve, Uniper also offered a January 1-3 JKTC delivery cargo, with a volume range of 3.3-3.5 TBtu, at JKM January full-month average plus 12 cents/MMBtu.

During the derivatives MOC process, BP placed the most competitive bid for 25 lots of January derivatives contract at \$32.35/

MMBtu, while PetroChina offered the most competitive offer for 25 lots of January derivatives contract at \$32.45/MMBtu. Platts assessed January derivatives at \$32.40/MMBtu, between the bid and the offer, at Singapore close. — <u>Masanori Odaka</u>

Downstream demand due to cooler weather supports European LNG prices

European LNG prices were bolstered Nov. 8 by lower Russian gas flows through Germany and strong demand driven by cooler temperatures across the continent.

Expensive shipping continued to impact the market, with maximum wait times of 2 ½ weeks reported at the Panama Canal for unreserved LNG tankers.

S&P Global Platts assessed DES Northwest Europe for December at \$26.825/MMBtu. The first half of December was assessed at \$26.725/MMBtu and the second half was assessed at \$26.925/MMBtu, translating to an intramonth contango of 20 cents/MMBtu.

Dutch TTF December futures moved in an intraday range of Eur76/MWh to Eur81/MWh. Platts assessed the TTF December contract at \$26.569/MMBtu on Nov. 8.

"Starting to think Europe looking a bit more attractive with shipping and JKM physical/paper disparity," an Atlantic-based trader said.

Russian gas flows through the Mallnow gas compressor were recorded lower on gas days Nov. 7-8. Flows had fallen by roughly 50% from the 8.2 million kWh/h seen on Nov. 6, according to data from operator Gascade. This comes as large net withdrawals from European inventories alluded to heightened downstream demand amid a cold spell across the continent.

LNG storage levels in the UK looked strong as inflows into the Dragon LNG terminal offset withdrawals from South Hook and Isle of Grain, according to data from utility National Grid. The NBP/TTF spread was assessed at roughly 40 cents/MMBtu at 4:30 p.m. London time,

ASIA/MIDDLE EAST (\$/MMBtu), NOV 8*

DES Japan/Korea Marker (JKM)			
JKM (Dec)	AAOVQ00	31.864	
JKM (H1 Dec)	AAPSU00	31.575	
JKM (H2 Dec)	AAPSV00	32.152	
JKM (H1 Jan)	AAPSW00	32.733	
JKM (H2 Jan)	AAPXA00	32.775	
Asian Dated Brent (16:30 Singapore)	ADBAA00	14.40	
JKM vs Henry Hub futures	AAPRZ00	26.252	
JKM vs NBP futures	AAPSA00	4.281	
JKM vs TTF	LNTFJ00	5.295	
JKM vs Asian Dated Brent (16:30 Singapore)	AAPSB00	17.462	
JKM vs MED (16:30 London)	ALNGB00	5.039	
JKM vs NWE (16:30 London)	ALNGA00	5.039	
DES Japan/Korea (JKM) derivatives Singapor	e close		
Balmo-ND	LJKMB00	31.809	
Dec	LJKM000	32.075	
Jan	LJKM001	32.400	
Feb	LJKM002	30.425	
Mar	LJKM003	26.025	
01 2022	LJKQR01	29.617	
02 2022	LJKQR02	16.750	
Summer 2022	LJKSN01	15.575	
Winter 2022	LJKSN02	15.900	
2022	LJKYR01	19.000	
2023	LJKYR02	12.000	
2024	LJKYR03	9.300	
DES Japan/Korea (JKM) derivatives London o	lose		
Dec	JKLM000	32.000	
Jan	JKLM001	32.484	
Feb	JKLM002	30.759	
Mar	JKLM003	26.075	
01 2022	JKLQR01	29.773	
02 2022	JKLQR02	16.350	
Summer 2022	JKLSN01	15.700	
Winter 2022	JKLSN02	16.300	
2022	JKLYR01	19.300	
2023	JKLYR02	12.237	
2024	JKLYR03	9.250	
DES West India Marker (WIM)			
WIM (Dec)	AARXS00	29.663	
DES West India Marker (WIM) derivatives Sing	•		
Dec	AWIMB00	30.000	
Jan	AWIMM01	30.775	
Feb	AWIMM02	29.025	
Mar	AWIMM03	24.775	
01 2022	AWIMQ01	28.192	
02 2022	AWIMQ02	15.475	
Summer 2022 Winter 2022	AWISN01	14.300	
	AWISN02	14.700	
2022 2023	AWIMY01	17.675 10.825	
2024	AWIMY02	8.350	
	AWIMY03	0.330	
Carbon Neutral LNG			
CNL WTW JKTC Differential (ex-Australia)	ACNLF00	0.831	
CNL WTT JKTC Differential (ex-Australia)	ACNLB00	0.183	
CNL DES JKTC Differential (ex-Australia)	ACNLG00	0.177	
CNL Combustion JKTC	ACNLJ00	0.648	
FOB Middle East			
FOB Middle East	AARXQ00	28.800	
FOB Australia (netback)			
JKM (Dec)	AAOVQ00	31.864	
(-) Freight	AAUSA00	2.44	
FOB Australia	AARXR00	29.42	
Key gas price benchmarks			
Japan Customs Cleared LNG (Aug)	LAKPN00	10.15	Final
Japan Customs Cleared LNG (Sep)	LAKPM00	10.78	Estimated

Platts Dutch TTF			
Dec	GTFWM10	26.569	
Jan	GTFWM20	26.586	
Competing fuel prices			
Japan Customs Cleared crude oil (Aug) (\$/b)	ААКОР00	73.78	Final
Japan Customs Cleared crude oil (Sep) (\$/b)	AAKOM00	73.81	Estimated
HSFO 3.5% sulfur 180 CST FOB Singapore	LUAXZ00	11.71	
NEAT Coal Index	ЈКТСВ00	6.570	
Minas crude oil	LCAB000	13.736	
Naphtha CFR Japan	LNPHJ00	16.725	

EUROPE (\$/MMBtu), NOV 8

\$/MMBtu	Eur/MWh	Eur/MMBtu
AASXY00 26.825	LNMTA00 78.920	LNMXA0023.147
AASXZ00 26.725		
AASYA00 26.925		
AASYB00 26.961		
ADBAB00 14.50		
AASYF00 21.275		
LNTFS00 0.256		
AASYH00 -0.206		
AASYJ00 12.328		
ALNSA00 0.000		
AASYM00 -5.039		
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NORTH AMERICA (\$/MMBtu), NOV 8

FOB Gulf Coast Marker (GCM)

FUD Guil COOST MOLKET (GCM)	
GCM	LGCSM01 24.500
Dated Brent (16:30 London)	ADBAB00 14.50
GCM vs JKM	LGMJM01 -7.364
GCM vs Henry Hub futures	LGMHM01 19.073
GCM vs TTF	LNTFG00 -2.069
GCM vs NWE	LGEUR00 -2.325
GCM vs MED	LGMET00 -2.325
GCM vs NBP futures	LGMNM01 -2.532
GCM vs Dated Brent (16:30 London)	LGMDB00 10.003
GCM vs USGC HSF0	LGMF000 13.610
Competing fuel prices	
US Gulf Coast high sulfur fuel oil	LUAXJ00 10.95
New York Harbor 1%S fuel oil	LUAXD00 12.92

*Japan Customs Cleared value shows latest available CIF price published by the Ministry of Finance, converted to US dollars per MMBtu. All other values reflect Platts most recent one-month forward assessments for each product in each region, converted to US dollars per MMBtu. JKM Marker, SWE LNG and NWE LNG average the assessments of the two half-months comprising the first full month of forward delivery. Asian LNG assessments assessed at Singapore market close 0830 GMT, European LNG assessment assessed at London market close 1630 UK time. NYMEX Henry Hub futures and ICE NBP futures values taken at Singapore market close and London market close. ICE NBP futures converted from Pence/Therm to \$/MMBtu. Asian Dated Brent crude oil assessed at Asian market close 0830 GMT and converted from \$/barrel to \$/MMBtu. Detailed assessment methodology is found on www.platts.com.

RECENT TENDERS AND STRIPS

Tender/ strip I November	ssuer/location	Tender type	(Loading) or delivery period	Slots/ cargoes	Opening	Closing date	Validity	Notes	Results
Tender A	Angola LNG - Angola LNG	Sell	16-Nov-21 - 15-Dec-21	1 DES		10-Nov-21		furthest delivery to Arun	
Tender S	Sonatrach - Algeria	Sell	(01-Nov-21 - 15-Nov-21)	3 F0B					
	APLNG - Australia Pacific LNG	Sell	(28-Dec-21 - 28-Dec-21)	1 DES or FOB	08-Nov- 21				
	Adnoc - ADNOC Das Island	Sell	(07-Apr-22 - 23-Sep-22)	6 F0B		09-Nov-21		loading dates: April 7-13, May 15-21, June 12-18, July 20-26, Aug 20-26, Sep 17-23 Brent- linked basis	
Tender E	BOTAS - Turkey	Buy	01-Dec-21 - 28-Feb-22	9 DES		04-Nov-21		9 cargo tender, closing Nov.4	
	EGAT - Map Ta Phut	Buy	10-Dec-21 - 18-Dec-21	1 DES		03-Nov-21		One cargo buy tender for Dec. 10-12 or Dec. 16-18 delivery	
	Pakistan LNG - Port Qasim	Buy	19-Nov-21 - 27-Nov-21	2 DES	02-Nov- 21	05-Nov-21	05-Nov-21	Two cargo buy tender for Nov. 19-20 and Nov. 26-27 delivery. Closes on Nov. 5, 1200 hours PST. Validity until 2300 hours PST.	
	Oman LNG - Oman LNG	Sell	(01-Dec-21 - 03-Dec-21)	1 DES or FOB		21-0ct-21		Closing 1pm 0man time	heard awarded to Gunvor around \$30/MMBtu FOB
	chthys LNG - chthys LNG	Sell	(13-Nov-21 - 17-Nov-21)	1 DES or FOB	25-0ct-21	27-0ct-21	27-0ct-21	FOB or DES cargo, 13-17 November loading. The tender closes on Oct. 27, noon Tokyo time. Validity until 7 PM Tokyo time (7 hour validity).	heard awarded at approximately \$31/MMBtu FOB
	Darwin LNG - Darwin	Sell	(01-Dec-21 - 03-Dec-21)	1 DES or FOB		28-0ct-21		Dec 1-3 load or Dec 14-17 DES JKTC	heard awarded at approximately \$31/MMBtu FOB
Tender F	Petronet - Dahej	Buy	16-Nov-21 - 30-Nov-21	1 DES	21-0ct-21	27-0ct-21	28-0ct-21	Seller to nominate delivery window for H2 Nov, fixed price only, DES Dahej or Kochi, 3.2 Tbtu	heard not awarded
Tender E	Egas - Egypt	Sell	(13-Nov-21 - 25-Nov-21)	2 DES or FOB		26-0ct-21	26-0ct-21		Heard awarded approximately \$28s/MMBtu
Tender F	PTT - Maρ Ta Phut	Buy	27-Nov-21 - 05-Dec-21	2 DES	25-0ct-21	26-0ct-21	26-0ct-21	Seeking two cargoes for Nov. 27-29 delivery and Dec. 3-5 delivery. Closes on 4 PM Thailand time on Oct. 26, and has a 3 hour validity until 7 PM Thailand time.	Heard awarded around \$33- \$34/MMBtu
Tender I	EASA - Escobar	Buy	19-Nov-21 - 19-Dec-21			26-0ct-21		Two cargo buy tender for Nov. 19 & Dec. 19 delivery	
Tender N	Novatek - Yamal	Sell	05-Dec-21 - 31-Mar-22	3 DES		21-0ct-21		Dec. 5-23, Jan. 3-21, and March 25-31 delivery	Heard partially awarded
	Sakhalin Energy - Sakhalin	Sell	(01-Dec-21 - 01-Dec-21)	1 DES or FOB		21-0ct-21	22-0ct-21		heard awarded at approximately \$34/MMBtu
	Angola LNG - Angola LNG	Sell	05-Nov-21 - 19-Nov-21	1 DES		25-0ct-21	26-0ct-21	Furthest to India, onboard Seri Balqis	
Tender E	BOTAS - Turkey	Buy	01-Nov-21 - 31-Mar-22	19 DES		18-0ct-21		DW: Nov.1-7, Nov.8-14, Nov.15-21, Nov.22-28, Nov.29-Dec.5, Dec.6-12, Dec.13-19, Dec.20-26, Dec.27-Jan.2, Jan.3-9, Jan.10-16, Jan.17-23, Jan.24-30, Jan.31-Feb.6, Feb.7-13, Feb.14-20, Feb.21-27, Feb.28-Mar.6, Mar.7-13	Heard partially awarded at TTF+\$0.40/MMBtu to +\$0.70/ MMBtu
	Darwin LNG - Darwin	Sell	20-Nov-21 - 27-Nov-21	1 DES		14-0ct-21	14-0ct-21	Nov 14-16 loading or Nov 20-27 DES	heard awarded to a trader at high \$36 or approximately \$37/ MMBtu FOB to BP
	APLNG - Australia Pacific LNG	Sell	(25-Nov-21 - 27-Nov-21)	1 DES	11-0ct-21	12-0ct-21			Heard awarded to Gunvor

down from an intraday high of 62 cents/MMBtu.

In tenders, sources were unable to confirm the results of the recent Sonatrach tender for up to three FOB Algeria cargoes, for prompt load.

"[The tender] would've been relatively cheap given the lack of outlets and the short notice," one Europe-based trader said.

Angola LNG was heard to be closing a tender Nov. 10 for an H2 November/H1 December discharge cargo with the furthest point of delivery being Arun.

Spread trades remained popular in the Platts JKM derivatives market during European hours, with the January JKM/TFU (TTF traded in \$/MMBtu) reaching \$5.90/MMBtu by market close, as participants looked to hedge the changing spreads between the two basins.

Shipping day rates increased by \$10,000 to \$260,000/day for the Pacific basin and remained at \$195,000/day in the Atlantic.

A newbuild LNG tanker from Norway's BW was heard fixed by China's ENN for a period of 10 years at a rate in the high \$70,000s/day starting the third quarter of 2022. The Torben Spirit, 173,400 cu m, was

heard on subs by Brazil's Petrobras for a period of three years with the rate not reported.

The LNG Ogun, 149,600 cu m, was reported fixed by commodity trader Vitol for a single voyage ex Bethioua, Algeria, for Nov. 10 loading at a rate of \$150,000/day. Britain's BP was heard to have fixed a BW newbuild LNG tanker for a period of 10 years starting the third quarter of 2022 with the rate not reported.

At the Panama Canal – the shortest passageway for LNG tankers that load on the US Gulf Coast to reach East Asia – maximum wait times for unreserved northbound LNG transits was 18 days on Nov. 8, while it was 17 days southbound, according to Panama Canal Authority data compiled by Adimar Shipping.

In Texas, meanwhile, Freeport LNG expects to resume full production around Nov. 20, as an outage involving a pre-treatment train at the export facility was taking longer to repair than first estimated, a spokesperson said. — <u>Harry Weber, Zack Smith, Piers De Wilde</u>

NEWS

UK government denies report it asked Qatar for additional LNG supplies

- Report that ministers held talks over long-term arrangement
- UK has 'regular' discussions with key energy partners
- UK month-ahead gas price most expensive among Europe's hubs

The UK government has not asked for more LNG supplies from Qatar or secured extra short-term deliveries from the country, a government spokesperson said Nov. 8, following a report that the UK had approached Doha for a new long-term deal and additional supplies.

Month-ahead gas prices at the UK NBP are currently the most expensive among Europe's traded gas hubs, with S&P Global Platts assessing the December NBP contract at 191.50 pence/therm (Eur76.31/MWh, \$25.83/MMBtu) on Nov. 5.

That is 363% higher than the 41.33 p/th price of the NBP monthahead contract a year ago.

According to a Financial Times report on Nov. 5, UK government ministers have held talks with Qatar over a long-term arrangement where Qatar would become a "supplier of last resort" to the UK.

It also reported that Qatar had diverted four LNG cargoes for delivery to the UK over the past two weeks.

"The UK government has not requested or secured any additional shipments from the Qatari government," the UK government spokesperson told S&P Global Platts.

The UK's Centrica already has a long-term Qatari LNG import agreement for delivery into the Isle of Grain terminal, while Qatar Energy itself is co-owner of the South Hook LNG terminal in Wales.

Centrica declined to comment Nov. 8, while Qatar Energy did not respond to multiple requests for comment.

"We already receive regular shipments of LNG from Qatar, and other LNG suppliers, as part of existing commercial arrangements between buyers and sellers," the government spokesperson said.

SOUTH AMERICA (\$/MMBtu), NOV 8

LEBMH01	27.140	
LAARM01	14.090	
LASWM01	0.315	
LADBM01	12.643	
LAHHM01	21.590	
LAJKM01	-4.724	
LABPM01	0.108	
	LAARM01 LASWM01 LADBM01 LAHHM01 LAJKM01	LARM01 14.090 LASW01 0.315 LADBM01 12.643 LAHHM01 21.590 LAJKM01 -4.724

NORTH AMERICAN FEEDGAS (\$/MMBtu), NOV 5

Daily average US LNG feedgas cost	ALNFG00	5.210
30-day moving average US LNG feedgas cost	ALNUS00	5.367
Daily average USGC LNG feedgas cost	ALNFH00	5.229
30-day moving average USGC LNG feedgas cost	ALNUG00	5.407

Export facility	Estimated feedgas cost				
Sabine Pass	ALNFA00	5.229			
Corpus Christi	ALNFB00	5.228			
Cove Point	ALNFC00	5.036			
Cameron	ALNFD00	5.332			
Freeport	ALNFE00	5.142			
Elba Island	ALNFF00	5.371			

Facility feedgas costs represent a calculation derived from S&P Global Platts' North American gas spot price indices at the hub(s) from which feedgas would be procured most economically for the export facility. The average summary costs are an average of the relevant export facilities' feedgas costs weighted by Platts Analytics' daily estimated volume delivered to each facility.

US CARGO CANCELLATIONS, NOV 8

Dec-21	0	
Nov-21	0	
Oct-21	0	
Sep-21	0	
Sep-21 Aug-21	0	
Jul-21	0	
Jun-21	0	
May-21	0	
Apr-21	0	
Mar-21	0	
Feb-21	5	
Jan-21	2	

The figures are collected from market sources.

NATURAL GAS FUTURES (\$/MMBtu), NOV 8

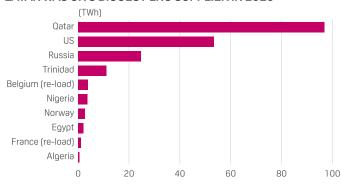
NYMEX HH Singapore close	(Dec)	AAPSD00	5.612	
NYMEX HH Singapore close	(Jan)	AAPSE00	5.723	
ICE NBP Singapore close	(Dec)	AAPSF00	27.582	
ICE NBP Singapore close	(Jan)	AAPSG00	28.019	
NYMEX HH London close	(Dec 21)	AASYN00	5.550	
NYMEX HH London close	(Jan 22)	AASY000	5.642	
ICE NBP London close	(Dec 21)	AASYR00	27.032	
ICE NBP London close	(Jan 22)	AASYS00	27.350	
NYMEX HH US close	(Dec 21)	NMNG001	5.427	
NYMEX HH US close	(Jan 22)	NMNG002	5.505	

MARINE FUEL LNG BUNKER, NOV 8

	\$/M	MBtu	\$/mt (UII)	\$/mt (LNG)		
Singapore	LNBSG00	31.364	LNBSM00 1211.999	LNBSF00 1630.928		
	Eur/	'MWh	\$/mt (0il)	\$/mt (LNG)		
Rotterdam	LNBRT00	77.225	LNBRM00 1013.274	LNBRF00 1364.948		
MMRtu to \$/mt (ail) factor: 38 6/3: MWh to \$/mt (ail) factor: 11 322: MMRtu to \$/mt (LNC) factor: 52 000						

Qatar was the dominant LNG supplier to the UK in 2020, representing 48% of total LNG deliveries, followed by the US (27%) and Russia (12%), according to UK government data.

QATAR WAS UK'S BIGGEST LNG SUPPLIER IN 2020



"We have regular discussions with our key energy partners around the world ahead of winter and to discuss the global transition to clean energy," the spokesperson added.

UK Prime Minister Boris Johnson held brief talks with the Emir of Qatar, Tamim bin Hamad al-Thani, during COP26, though the discussions were thought to have centered on a recent deal between Qatar and Rolls Royce on climate technology innovation.

Policy tool

Source: UK government

The UK produces around half of the gas it consumes, and relies on imports to meet the remaining demand, with Qatar delivering a total of

PLATTS WIM RLNG DAILY PRICES, NOV 8

	\$/MM	\$/MMBtu		
Ex-Terminal				
Dahej	RLEDA00	31.47	RLEIA002331.47	
Hazira	RLEDB00	31.62	RLEIB002342.77	
Dabhol	RLEDC00	31.56	RLEIC002338.45	
Mundra	RLEDE00	31.60	RLEEI002341.18	
Kochi	RLEDD00	32.10	RLEDI002378.36	
Average	RLEDF00	31.67	RLEIF002346.45	
Location				
Ahmedabad	RLDDJ00	31.97	RLDIJ002368.60	
Morbi	RLDDK00	32.10	RLDIK002378.31	
Panvel	RLDDL00	32.22	RLDIL002387.41	
Dabhol	RLDDC00	32.22	RLDIC002387.41	
Vijaipur	RLDDM00	32.15	RLDIM002382.30	
Kota	RLDDN00	32.15	RLDIN002382.30	
Chhainsa	RLDD000	32.22	RLDI0002387.07	
Jagdishpur	RLDDP00	32.22	RLDIP002387.07	
New Delhi	RLDDQ00	32.22	RLDIQ002387.07	
Koottanad	RLDDR00	32.75	RLDIR002426.27	
Kakinada	RLDDS00	32.83	RLDIS002432.54	
Average	RLDDT00	32.28	RLDIT002391.49	

Prices are net-forward calculations derived from the Platts WIM and exclude VAT and CST sales taxes. Delivered prices represent the cost of delivery from the nearest connected LNG terminal via pipeline.

97 TWh (9.1 Bcm) of gas last year, UK government data show.

Qatar's LNG supplies to the UK have reached 5.67 Bcm of gas equivalent in the year to date, according to Platts Analytics data.

"While it is unclear if any material agreements could be reached between the two countries, Qatar's natural gas exports are in many ways one of its strongest foreign policy tools," Samer Mosis, head of EMEA LNG at S&P Global Platts Analytics, said Nov. 8.

"The power of this tool was clear during Qatar's difficulties with its regional peers earlier this decade, during which it never stopped its exports of gas to the UAE, a gesture of its desire to amend ties with its neighbors," Mosis said.

(continued on page 9)

S&P Global Platts

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SHIPPING PRICES

SHIPPING RATES, NOV 8

		\$/day	
Asia Pacific day rate	AARXT00	260,000	
Atlantic day rate	AASYC00	195,000	
TCR Australia-Japan	ATCRA00	260,000.00	
TCR USG-NWE	ATCRB00	195,000.00	
TCR USG-Japan	ATCRC00	195,000.00	
		\$/MMBtu	
PLF1 Middle East-Japan/Korea	AAUUA00	3.89	
PLF2 Middle East-NWE	AAUTE00	4.14	
PLF3 Trinidad-NWE	AAUUC00	1.90	

SHIPPING RATES



Source: S&P Global Platts

SHIPPING CALCULATOR, NOV 8

	Australia- Japan/Korea	Middle East- India
Ship size (mt)	72980.77	72980.77
Trip length (days)	9	3
Carrier day rate (\$/day)	260000	260000
Day rate cost (\$/MMBtu)	1.50	0.63
Boil-off cost	0.65	0.22
Supplementary boil-off cost (\$/MMBtu)	0.21	0.07
Cost of voyage* (\$/MMBtu)	2.44	0.96
*lastudes seut seet		

^{*}Includes port cost.



FREIGHT ROUTE COSTS, NOV 8 (\$/MMBtu)

Asian discharge ports

	J	apan/Korea	South China/Taiwan		West India	
Middle East	AAUUA00	3.89	AAUSH00	3.39	AAUSP00	0.96
Australia (Dampier)	AAUSA00	2.44	AAUSI00	1.96	AAUSQ00	2.36
Australia (Gladstone)	ACABA00	2.45	ACABB00	2.69	ACABC00	3.80
Bontang	АОЈКА00	1.69	AOCTA00	1.23	AOWIA00	2.33
Bintulu	АВЈКА00	1.72	АВСТА00	1.02	ABWIA00	2.12
Singapore	ASJKA00	1.93	ASCTA00	1.22	ASWIA00	1.63
Tangguh	ATJKA00	1.68	ATCTA00	1.44	ATWIA00	2.78
Trinidad via Suez	AAUSB00	7.52	AAUSJ00	7.06	AAUSR00	4.85
Trinidad via Panama	AAUXB00	5.21	AAUZB00	6.34		
Trinidad*	AAUZC00	5.21	AAUZD00	6.34		
Nigeria	AAUSC00	5.91	AAUSK00	5.24	AAUSS00	3.80
Algeria	AAUSD00	5.49	AAUSL00	5.05	AAUST00	3.01
Belgium	AAUSE00	6.38	AAUSM00	5.71	AAUSU00	3.62
Peru	AAUSF00	5.43	AAUSN00	6.22	AAUSV00	6.81
Russia	AAUSG00	0.99	AAUS000	1.45	AAUSW00	3.75
Spain	ACAAA00	5.74	ACAAB00	5.07	ACAAC00	3.24
Norway	АСААН00	7.33	ACAAI00	6.41	ACAAJ00	4.47
USGC*	LAUVA00	5.47	LAUVB00	6.60	LAUVC00	5.32
USGC via Panama	LAUVI00	5.47	LAUVL00	6.60		
USGC via Suez	LAUVJ00	8.27	LAUVM00	7.33	LAUV000	5.32
USGC via Cape	LAUVK00	8.51	LAUVN00	7.79	LAUVP00	6.62

EMEA discharge ports

	South	n West Euro	pe North	n West Eur	оре К	uwait/UAE
Middle East	AAUSX00	3.47	AAUTE00	4.14	LMEMM00	0.52
Australia (Dampier)	AAUSY00	5.39	AAUTF00	6.09	LMEMN00	2.84
Australia (Gladstone)	ACABD00	6.88	ACABE00	7.61	ACABI00	4.30
Trinidad	AAUSZ00	1.93	AAUUC00	1.90	LMEMP00	4.44
Nigeria	AAUTA00	2.16	AAUTG00	2.32	LMEMQ00	4.05
Algeria	AAUTB00	0.47	AAUTH00	0.99	LMEMR00	2.62
Belgium	AAUTC00	0.83			LMEMS00	3.42
Peru	AAUTD00	5.64	AAUTI00	5.85	LMEMT00	7.34
Russia	AAUUB00	6.83	OOCTUAA	7.31	LMEMU00	5.25
Spain			ACAAD00	0.83	LMEMV00	2.85
Norway	ACAAK00	1.40	ACAAL00	0.82	LMEMW00	4.06
Murmansk			AARXW00	0.98		
USGC*	LAUVD00	2.53	LAUVE00	2.50	LMEMX00	5.12
USGC via Suez					LMEMY00	5.12
USGC via Cape					LMEMZ00	6.41

Americas discharge ports

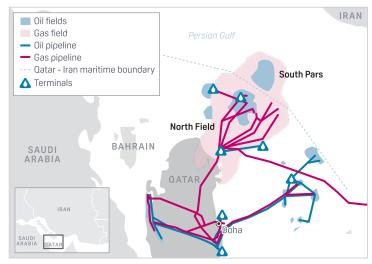
	US A	US Atlantic Coast		Argentina		Brazil
Middle East	AAUTK00	4.73	AAUTS00	5.06	ACAAP00	5.83
Australia (Dampier)	AAUTL00	5.95	AAUTT00	5.08	ACAAQ00	6.10
Australia (Gladstone)	ACABF00	5.75	АСАВН00	4.37	ACABG00	5.37
Trinidad	AAUTM00	0.99	AAUTU00	2.24	ACAAR00	1.52
Nigeria	AAUTN00	2.42	AAUTV00	2.47	ACAAS00	2.13
Algeria	AAUT000	1.61	AAUTW00	2.85	ACAAT00	2.50
Belgium	AAUTP00	1.45	AAUTX00	3.23	ACAAU00	2.88
Peru	AAUTQ00	4.92	AAUTY00	2.27	ACAAV00	3.46
Russia	AAUTR00	7.43	AAUTZ00	6.52	ACAAW00	9.15
Spain	ACAAE00	1.33	ACAAF00	2.87	ACAAG00	2.33
Norway	ACAAM00	1.62	ACAAN00	3.85	ACAA000	3.68
USGC*			LAUVG00	3.44	LAUVH00	2.70

^{*}Most economic.

All values calculated based on prevailing spot market values during the day for LNG, bunker fuel and ship chartering. No route cost is calculated for Zeebrugge to NW Europe, or Spain to SW Europe. Other routes appear blank on days when a public holiday in one or another location means underlying values are not published. Detailed assessment methodology, including assumed route times and underlying values, is found on www.platts.com.

"This time around, with the UK, it would not be surprising if Qatar worked diligently to hep the UK avert an energy crisis, an effort which would only strengthen bilateral relations," he said.

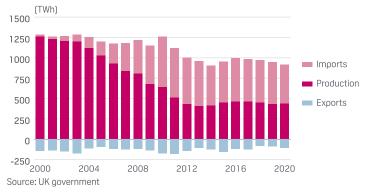
QATAR'S GAS AND OIL FIELDS



Source: S&P Global Platts

.In 2020, the UK produced a total of 439 TWh of gas (41.5 Bcm), while imports totaled 478 TWh, according to government data. Pipeline imports from Norway accounted for a third of total UK gas supply and more than half of total imports at 263 TWh.

UK REMAINS DEPENDENT ON GAS IMPORTS



"Our gas supply remains secure, thanks to a diverse range of sources at home and abroad. We have more than enough delivery capacity to meet demand," the UK government spokesperson said.

— Stuart Elliott, Claudia Carpenter



Russia waiting 'patiently' for startup of Nord Stream 2 gas link: Kremlin

- Approval still outstanding from German regulator
- German CSU leader urges prompt pipeline launch
- Nord Stream 2 can help against high gas prices: Soder

Russia is waiting "patiently" to be able to launch the 55 Bcm/year Nord Stream 2 gas pipeline to Germany, Kremlin spokesman Dmitry Peskov said Nov. 8, as German approval of the pipeline operator remains outstanding.

Nord Stream 2 was completed in September, but commercial operations are yet to begin as Gazprom-owned Nord Stream 2 AG waits for regulatory clearance.

Peskov was cited by the Prime news agency as telling reporters there was no launch date yet for the pipeline. "This will take some time, and the main thing here is to wait patiently," Peskov said.

Nord Stream 2 AG applied in June for approval as an independent gas transmission network operator, but the Bundesnetzagentur (BNetzA) regulator only deemed the application as complete in early September, and it has up to four months from Sept. 8 to produce a draft decision.

That means a first decision might not be published before January 2022.

Unless the BNetzA gives the green light to begin flows in its draft decision, the process could delay first gas even further as the European Commission then has two months to review it before returning it to the regulator, which then itself has two more months to make a final decision.

Further complicating the certification process, Poland's PGNiG and its German trading subsidiary PGNiG Supply & Trading (PST) have been granted permission to take part in the certification proceedings.

PGNiG and the Polish government have long been opposed to Nord Stream 2, saying it threatens European energy security and could see Poland's role as a transit country for Russian gas to Europe reduced.

Ukraine's state-owned gas company Naftogaz Ukrayiny and grid operator GTSOU have also applied to the regulator to be allowed to take part in the certification process.

CSU view

Meanwhile, the head of Germany's CSU party, Markus Soder, said Nov. 6 that a prompt startup of Nord Stream 2 would help ease skyhigh European gas prices.

S&P Global Platts assessed the benchmark TTF day-ahead price at a record high of Eur116.10/MWh Oct. 5, with price volatility continuing through October and into November.

The TTF day-ahead price was assessed at Eur73.20/MWh Nov. 5, up by 408% from a year ago.

In an interview with the Westdeutsche Allgemeine Zeitung (WAZ), Soder — who also serves as Minister-President of Bavaria — said Nord Stream 2 would be a "secure" way to ensure stable gas supplies to Germany.

"It makes sense that we open the Nord Stream 2 pipeline in the Baltic Sea soon," Soder said. "We cannot stand idly by as prices rise before the cold winter," he said.

Asked whether Germany should start Nord Stream 2 before the

regulatory requirements are met, Soder said: "We have the exit from coal, the exit from nuclear energy, an increasing scarcity of resources, rising prices and a growing demand for electricity."

"That is why we need gas-fired power plants. Nord Stream 2 would simply be a secure basis for the stable availability of gas in Germany," he said.

TTF DAY-AHEAD GAS PRICE STILL HIGH AFTER VOLATILE OCTOBER



Source: S&P Global Platts

Regulatory warning

PGNiG has said that putting the pipeline into operation before obtaining a final certification decision would constitute a breach of German and EU law.

The German regulator in early October also warned it could take action against Nord Stream 2 AG if it did not demonstrate compliance with regulatory requirements.

According to information available to the BNetzA, all technical requirements necessary for Nord Stream 2 to go into operation have now been fulfilled and the relevant certificates have been submitted to the authorities responsible under state law.

A BNetzA spokesperson said it could not, therefore, be ruled out that Nord Stream 2 AG would put the pipeline into operation "in the near future."

It said it reserved the right to launch supervisory or abuse proceedings against Nord Stream 2 AG in the event that doubts about its compliance with regulatory requirements were not "dispelled."

- Stuart Elliott, Anastasia Dmitrieva

Algeria's Medgaz gas pipeline capacity boost ready by year-end: APS

- Capacity to rise from 8 Bcm/year to 10.7 Bcm/year
- Feasibility study concluded for expansion to 16 Bcm/year
- As exports to Spain via GME pipeline to Morocco end

The 8 Bcm/year Medgaz pipeline that carries Algerian gas directly to Spain is to have an increased capacity of 10.7 Bcm/year by the end of this year, with a fourth compressor due to enter service in the fourth quarter, Algeria's state news agency APS said Nov. 7.

Algerian officials had previously flagged that the capacity expansion would be complete by the end of November, and it comes

as Algerian gas flows to Spain via Morocco using the GME pipeline were halted on Nov. 1 after the non-renewal of a key transit deal between Algiers and Rabat.

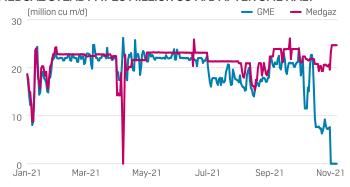
Algeria has repeatedly said it can meet Spanish gas demand using only Medgaz and LNG deliveries, but the non-renewal of the GME transit contract could still cause some concern in Europe given the current tight gas market and high prices.

According to S&P Global Platts assessments, the month-ahead price on the Spanish PVB hub on Nov. 5 was Eur74.95/MWh, the second highest among Europe's traded hubs behind the UK NBP month-ahead contract.

European gas prices have soared in recent months on supply uncertainties, with the current PVB month-ahead price up by 405% from just Eur14.85/MWh on Nov. 5, 2020.

Since Nov. 1, Algerian gas exports in Medgaz have increased, reaching 25 million cu m/d on Nov. 4, according to data from S&P Global Platts Analytics.

MEDGAZ STEADY AT 25 MILLION CU M/D AFTER GME HALT



Source: S&P Global Platts Analytics

That is up from an average of 21 million cu m/d in the first 10 months of the year. At 25 million cu m/d, current flows already suggest an annual capacity of 9.1 Bcm/year.

Once Medgaz reaches capacity of 10.7 Bcm/year, daily flows could come in at close to 30 million cu m/d.

Further expansion

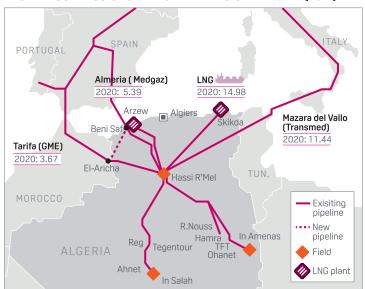
According to the APS report, Medgaz is able to cover supplies under long-term contracts held by Spanish buyers, while the capacity of the pipeline could be expanded further to 16 Bcm/year.

Feasibility studies for the further increase have already been carried out, but a final investment decision can only be made if additional long-term agreements are in place for volumes more or less in line with the proposed extension, and of a long enough duration to ensure the investments are recovered, APS said.

Algeria has sought to reassure Spain that it can guarantee gas deliveries, after energy minister Mohamed Arkab in August said that preparations had been made to divert all gas from the GME pipeline into Medgaz.

The GME pipeline transited 5.93 Bcm of Algerian gas via Morocco to Spain in the first 10 months of 2021 — an average of 20 million cu m/d — according to Platts Analytics data.

ALGERIA COMMISSIONS NEW GME DIVERSION PIPELINE (Bcm)



Source: S&P Global Platts Analytics

Total supplies in the first 10 months of 2021 through the two pipelines (12.44 Bcm) are already more than the expanded capacity of Medgaz, suggesting that pipeline would not be able to meet all Spanish gas demand in the future.

Sonatrach had three supply contracts through GME for a combined 6.7 Bcm/year with Spain, Portugal and Morocco, APS said.

It renegotiated diverting some of this volume via Medgaz before closing the link.

Continuity of the GME beyond the end of October depended on gas contracts being signed on this route between Sonatrach and its clients which did not occur, it added. — <u>Gianluca Baratti, Stuart Elliott</u>

European LNG regas rates move back above 250 mil cu m/d mark Nov. 5

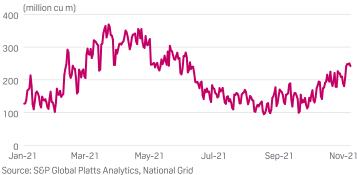
- Nov. 5 sees highest volume in almost five months
- Spain picks up in pace amid Algerian pipeline loss
- Early November indications suggest further increase

European LNG regasification rates in Europe climbed back above the 250 million cu m mark for a single gas day in early November for the first time in almost five months, an analysis by S&P Global Platts showed.

Data from S&P Global Platts Analytics and National Grid showed 250 million cu m was sent into European gas grids (Belgium, France, Italy, the Netherlands, Poland, Portugal, Spain and the UK) during the final working day of Week 44, the highest daily figure since the June 7 gas day.

LNG regas rates across Europe have begun to pick up in pace on the back of an increase in LNG volume deliveries into the region as the Winter 2021 delivery season progresses and demand begins to

EUROPEAN LNG REGAS



pick up, as well as weaker flows of Russian gas into both Germany and Slovakia.

Data from Platts Analytics showed Europe imported a total of 5.693 million mt (7.856 Bcm) during October, close to 50% higher than the 4.022 million mt imported during September.

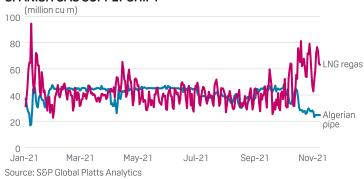
At the same time, imports of LNG into the three key Asian markets (China, Japan and South Korea) stood at 14.170 million mt last month against 15.348 million mt during September, marking a monthly decrease of 8%.

Moreover, during the first six days of November, a total of 1.188 million mt was delivered into Europe, suggesting that the recent increase could gather in pace in the coming weeks.

European LNG regas rates have seen an increase in Spain in particular, primarily on the back of lower Algerian pipeline gas receipts following the expiry of the long-term transit contract on the GME pipeline at the end of October.

Data from Platts Analytics showed that Spanish LNG regas averaged 65 million cu m/d for the first seven gas days of November from an average of 56 million cu m/d in October and 45 million cu m/d in November 2020.

SPANISH GAS SUPPLY SHIFT



Spanish receipts of Algerian pipeline gas averaged 43 million cu m/d in November 2020, the data showed, compared with an average of 34 million cu m/d in October and 24 million cu m/d for the Nov. 1-7 gas days. — *Gary Hornby*

CHINA DATA: October natural gas imports fall 12% on month on higher prices

- October imports were 9.38 million mt
- Import cost rises 9% on month
- Higher price, long holiday dampen domestic demand

China imported 9.38 million mt, or 12.93 Bcm, of natural gas — including both piped gas and seaborne LNG — in October, down 11.7% month on month, General Administration of Customs preliminary data released Nov. 7 showed.

Higher prices discouraged China's natural gas imports, mainly spot LNG imports, last month, according to domestic trade sources.

China was estimated to have imported around 5.54 million mt of LNG in October, down 15% from around 6.53 million mt in September, according to ship tracking data.

The average cost of importing natural gas into China in October was estimated at Yuan 3,467/mt (\$541.89/mt) excluding taxes and fees, up 9.3% from Yuan 3,171/mt in September, and marking the sixth consecutive month-on-month rise since May, S&P Global Platts calculations based on customs data showed.

The JKM benchmark price for spot LNG in Northeast Asia averaged \$19.02/MMBtu over Aug. 16-Sept. 15 for October delivery cargoes on a DES basis, up 21.5% from a month earlier, and equivalent to above Yuan 6,500/mt after adding taxes and fee, Platts data showed.

Domestic natural gas demand was lackluster during late September and earlier October due to higher prices and the week-long National Day holiday, which also dampened interest in spot imports to a certain extend in the month, market sources noted.

China's National Day holiday falls in Oct. 1-7 when market activities normally reduce, sources added.

The average price of China's trucked LNG cargoes, which was unregulated by the government, dropped below Yuan 6,000/mt across the entire country on Sept. 29 and remained below the level till Oct. 11, according to data from Shanghai Petroleum and Natural Gas Exchange, despite Platts JKM increasing to above \$32/MMBtu on Sept. 28 and even spiking to \$56.33/MMBtu on Oct. 6.

Meanwhile, the October natural gas imports were still up by 24.5% year on year, reflecting the strong demand recovery and growth in natural gas demand over the period.

Over January-October, China's natural gas imports totaled 99.07 million mt, or 136.62 Bcm, up 22.3% from the corresponding period in 2020, the preliminary customs data showed.

Separate volume data for LNG and piped gas will be released by the customs later in November. — <u>Staff</u>

Australia's Gladstone LNG exports hit year-to-date high in October

Australia's LNG exports from the Gladstone hub in central Queensland breached 2 million mt/month for the first time this year in October, with firm volumes to all key destinations, data from the Gladstone Ports Corp. showed Nov. 8.

There was 2.06 million mt recorded to have been exported for the month, up 2% year on year from 2.01 million mt, 7% stronger than 1.93

million mt in September, and the highest monthly total since 2.19 million mt in December 2020, the data showed.

The step up in volumes sets the port on a path to continue in 2021 its streak of continuous year-on-year gains since exports began in 2015.

For January-October, Gladstone Port exported 19.26 million mt LNG, which annualized to 23.12 million mt. That would beat 22.37 million mt in 2020.

Last year, October-December were the strongest months for exports and the only months in the year to breach 2 million mt/month.

China, Gladstone's major export destination, received 1.2 million mt in October, down 1% year on year and up 24% from a 24-month low in September, the GPC data showed.

Commonwealth Bank of Australia analyst Vivek Dhar said in a research note Nov. 8 that beginning mid-November, heating demand should support China's gas consumption. However, LNG imports would face some competition this winter from pipeline imports due to a ramp-up of the Russia-China Power of Siberia pipeline.

Gladstone's LNG exports to Malaysia hit a seven-month high in October at 247,602 mt, up 31% year on year and 1% above September, the figures showed.

South Korea was Gladstone's second largest destination for LNG in October with 348,447 mt, with that having edged up 2% year on year and 28% month on month.

Japan was sent 128,845 mt, up 1% year on year and down 49% month on month. A total 133,607 mt was bound for Singapore, down 6% year on year and 31% lower month on month, GPC data recorded.

— Nathan Richardson

No Russian gas auctions scheduled on Gazprom Export's ESP for Nov. 8-12

- Unusual move to hold no ESP auctions
- No sales reported since Oct. 13
- Offer has been limited to long-term sales

Russia's Gazprom Export has not scheduled any auctions on its Electronic Sales Platform for the week Nov. 8-12, it said in an update on its website Nov. 8.

In an unusual move, the company said there were "no planned sales sessions" this week.

Gazprom Export launched the ESP in September 2018 as a tool to sell surplus gas into Europe outside of its traditional long-term contract model and has sold more than 51 Bcm of gas since its launch.

However, sales have slowed in recent months and since September all gas offered has been for longer-term delivery in either 2022 or 2023 to just two delivery points — the German THE hub or the Austrian virtual trading point.

No sales have been recorded since Oct. 13 despite auctions being held across the remainder of the month.

It is unclear whether no sales were made at those auctions or whether Gazprom Export has not updated the results, with the company unable to comment further.

However, it is not unusual for the results to be updated at a later date. The last scheduled auctions were for the week Oct. 25-29, with gas

available for sale for delivery in either Q3 2022 or for Calendar Year 2023 to the THE and Austrian VTP hubs.

No auctions were scheduled for the week Nov. 1-5 due to a public holiday in Russia.

October sales

Sales in October, according to the latest results, totaled just 168 million cu m, which would be the lowest ever volume sold in a calendar month, lower even than the sales in the first month of operation in September 2018.

Gazprom has come in for criticism for not increasing supply to Europe at a time of sky-high gas prices, but the company has repeatedly said it has been meeting all of its customer obligations in full.

RECORDED ESP GAS SALES IN OCTOBER



S&P Global Platts assessed the benchmark TTF day-ahead price at a record high of Eur116.10/MWh Oct. 5, with price volatility continuing through October and into November.

The TTF day-ahead price was assessed at Eur73.20/MWh Nov. 5, up by 408% from a year ago. — $\underline{Stuart\ Elliott}$

Freeport LNG full output to resume around Nov. 20 amid pre-treatment train repairs

- Estimate is later than Texas facility operator first thought
- JERA, Osaka Gas, TotalEnergies committed for offtake

Feedgas demand at Freeport LNG was slowly rebounding Nov. 8 as repairs to one of the pre-treatment trains at the Texas export facility were taking longer than first estimated.

The pre-treatment train remained out of service following an unspecified incident that occurred Oct. 31. Full production was expected to resume around Nov. 20, about two weeks later than first estimated, a spokesperson said in an e-mail responding to questions.

Gas deliveries to the facility south of Houston registered 1.4 Bcf/d on Nov. 8, based on nominations for the morning cycle. That came after gas deliveries fell to 476 Mcf/d on Nov. 5, the lowest level since Sept. 17, when the entire facility was offline due to an interruption in power caused by damage from Hurricane Nicholas, S&P Global Platts Analytics data showed. Before the latest disruption, feedgas demand was at about 2 Bcf/d.

The incident involving the pre-treatment train occurred the same day as a separate power trip involving a compressor that temporarily knocked liquefaction Train 2 offline. The pre-treatment trains are located on the mainland and separated from the liquefaction units that are on a small island nearby.

The operator of the 15 million mt/year capacity Freeport LNG terminal had previously planned to reduce the number of loadings at the facility through up to early November due to a planned maintenance outage on a segment of pipeline that feeds gas to the terminal, a person familiar with the decision said Oct. 22.

Freeport LNG has offtake commitments with Japanese utilities JERA and Osaka Gas, each of which also hold 25% stakes in an entity that controls the terminal. France's TotalEnergies controls over 2.2 million mt/year of LNG from the third train at Freeport LNG. It inherited that commitment when it acquired Toshiba's US LNG business in 2019.

— Harry Weber

HYDROGEN

INTERVIEW: Hydrogen engines could help build demand: Aggreko

- Moerdijk 50 kVA hydrogen generator demo project
- Plans 10 hydrogen gensets to market this year
- Energy transition may mean higher consumer costs

Hydrogen combustion engines could be a bridge to wider adoption of the energy carrier before fuel cell technology ramps up, according to generation equipment company Aggreko.

Costs for hydrogen-fueled power generation would come down, but customers would also have to accept higher costs as a feature of the energy transition, Carsten Reincke-Collon, the company's Director of Future Technologies, told S&P Global Platts in an interview Nov. 4.

Reincke-Collon put current delivered prices to a site at around Eur12.00/kg (\$13.89/kg), equivalent to around Eur3-4/liter of diesel, and said halving the cost in 10 years would be achievable, although he noted that this would still be high compared with diesel.

"Of course, the cost should come down, but we will also have to ask the question if we are open to accept a bit of higher premium on decarbonized services in the future," Reincke-Collon said.

S&P Global Platts assessed monthly European hydrogen pump prices at Eur9.50/kg (\$11.01/kg) in Germany Nov. 1.

"If energy cost is not your main concern, but rather it's the reliability of power, and maybe then we get the equipment cost down, then we're getting closer to it," he said. "But I don't think it's going to be really quick."

Converting remote power generators to run on hydrogen provides an easier way for the potential mass adoption of hydrogen as a fuel for power generation in areas such as event venues and construction sites, Reincke-Collon said.

"Combustion is closer to what we do today, if you think about what people in the business are dealing with day-to-day in terms of service, handling and installation," he said.

Converting existing applications and technology also means production is more easily scalable and entry costs lower.

"It's a mass-produced thing that you just have to adapt to a new fuel," Reincke-Collon said. "Mass production always means the entry costs are lower. They're roughly half the cost at least of a fuel cell of the same size."

Dutch pilot project

In June, Aggreko undertook its first pilot project of a 50 kVA hydrogen combustion power generation unit at its depot in Moerdijk, Netherlands, which it developed with partner CMB.TECH.

The company is now investing in a further 10 units that will be ready for customer installations in Europe by the end of the year, Aggreko said.

CMB opened a 450 kg/day hydrogen fueling station in Antwerp at the start of June to fuel ships, tube trailers, cars, trucks and buses.

Aggreko sees an opportunity for integrating hydrogen and renewables into temporary power, requiring no capex commitment on the part of customers. These short-term contracts can help businesses take steps towards decarbonizing their energy needs, the company said.

Reincke-Collon said the company's commitment to achieve netzero emissions across its own operations and reduce diesel fuel used in customer applications by 50% by 2030 had spurred it to prioritize the use of clean fuels.

"Fuel plays a big role in our services, as we often have to bring the energy to the site where the customer needs our services and solutions," he said. "We have been looking at alternative fuels for a long time, more so with the increased targets that we set ourselves for the energy transition."

Hydrogen infrastructure development is needed to move from demonstration projects to commercial scale, Reincke-Collon said, noting large natural gas-based hydrogen production projects with CCS would help scale the industry.

Hydrogen logistics

Reincke-Collon noted that the logistics and infrastructure for hydrogen are more challenging than for liquid fuels such as diesel. Methanol is a good contender as a green hydrogen carrier in the future, he added, as it is simpler than ammonia to handle and does not have the same issues of toxicity.

Hydrogen-fueled back-up and temporary power generation could be supplied by tube trailers in areas with ready production of the energy carrier, but the development of pipeline infrastructure would be needed to enable large-scale hydrogen power plants, Reincke-Collon said.

Aggreko is also developing 45 kVA hydrogen fuel cell and battery hybrid generators.

Reincke-Collon said the flexibility in load for a fuel cell is limited, and combining hydrogen fuel cells with batteries helps to optimize the load.

The company has partnered with Nedstack on the proton exchange membrane fuel cell and lithium-ion battery system, which will also be piloted in Moerdijk. — <u>James Burgess</u>

South America positioned to impact low-carbon hydrogen market: panelists

- South American countries place an emphasis on domestic demand first
- Government will play an integral role in hydrogen development
- 59% of electricity in Latin America and the Caribbean sourced from renewable energy

South America, rich in renewable energy resources, has the potential to produce more low-carbon hydrogen than it could consume domestically — positioning the continent to become a leader in the development of a global hydrogen economy, according to a panel of speakers at the Oxford Institute for Energy Studies webinar on Hydrogen in South America on Nov. 5.

Although exports will play an important role as hydrogen projects begin to scale up, the initial focus is on domestic decarbonization.

"Focusing exclusively on exports is missing the point," said Mariano Berkenwald, International Energy Expert and former Latin America Program Officer for the International Energy Agency. Berkenwald continued by emphasizing the need for countries to "focus on smaller projects to enable smaller local hydrogen ecosystems," such as high altitude mining in Chile and Peru.

Argentina has been producing green hydrogen through small pilot projects since 2009, utilizing it for both power generation and methane production to be used in various applications.

Approximately 59% of the electricity generation matrix in Latin America and the Caribbean is sourced from renewable energy, according to Alfonso Blanco Bonilla, executive secretary of the Latin American Energy Organization. The issue, he said, is the lack of a developed market to provide adequate demand necessary for production.

Government roadmaps

In this, governments will also play an important role in the development and adoption of low-carbon hydrogen production, with more than 10 countries in Latin America in the process of publishing or having already published national hydrogen roadmaps.

Brazil's National Hydrogen Program combines specific objectives with government committees to address structure, targets, and policies for integration. The country has \$40 million in public and public-oriented investments in research and development and \$22 billion in announced investments, including large-scale, low-carbon hydrogen projects currently under feasibility studies in Ceara, Rio de Janeiro, and Pernambuco.

Brazil, one of the largest food producers in the world, imports vast amounts of fertilizers and all its methanol. This large domestic demand, combined with already-existing industrial complexes, could contribute to reducing dependency on imports and provide a potential surplus in low-carbon hydrogen production within the country, Thigo Barral Ferreira — CEO of Brazil's Energy Planning Company — told OIES during the webinar.

As projects are scaled up, global exportation will need cooperation from government as well. Importers are likely to require certification of the carbon intensity in the production of hydrogen,

according to Berkenwald, and considerations of certification schemes have been presented as a part of several national strategies. This will open doors for global importers looking to South America for lower production costs utilizing an abundance of renewable energy.

One such project in Chile – Haru Oni – presented by Siemens Energy, partners with German industry for the offtake of e-fuels by Porsche. The project, in the pilot phase until 2022, will use wind turbines and direct air capture to power operations and provide feedstock for methanol synthesis. Siemens expects 55 million liters of e-fuel per year to be produced in phase one, from 2022-2024.

Panelists at the OIES webinar agreed that there was room for both competition and cooperation moving forward as the world moves toward the collective goal of decarbonization. "We must learn to live with a carbon budget. It will not be easy, but we need to do it," said Hernan Carlino, head of the Global Climate Change Research Centre, at the conclusion of the event.

South America is in a position to drive this change forward domestically at first, but then through global markets as economies of scale develop, panelists said. — Leslie Gavriliuc

SUBSCRIBER NOTES

Platts proposes new daily carbon neutral hydrogen assessments

S&P Global Platts is proposing to launch its first suite of carbon-neutral hydrogen assessments, effective Dec. 9, 2021.

Building on its industry-leading price valuations for hydrogen, Platts would launch new carbon-neutral hydrogen price assessments that incorporate the cost of carbon capture, renewable energy certificates and where appropriate the cost of offsetting carbon emissions generated during production. Carbon offset costs would be accounted for using Platts CNC nature-based carbon credits, as measured in \$/mtCO2e in certain markets. Platts would complement these backstop calculated prices with available source data including bids, offers and reported trades as these become available. Other factors that will be considered include market information on power-purchase agreements and hydrogen offtake agreements. In the absence of spot market activity, Platts would consider carbon neutral hydrogen production costs as a baseline against which market prices would be assessed.

Platts would start publishing daily assessments in six locations, which have the potential to become hydrogen hubs as global markets emerge: California and US Gulf Coast in the Americas, the Netherlands and Saudi Arabia in Europe and the Middle East, and Japan and Australia in Asia-Pacific.

Assessments would be measured in \$/kg, \$/MMBtu, Eur/kg, Eur/MMBtu, Yen/kg, Yen/MMBtu, A\$/kg, A\$/MMBtu.

The prices would be published on Platts Dimensions Pro and under the Market Data Category: HY.

The following symbols would be created:

- -Australia Carbon Neutral Hydrogen A\$/kg
- -Australia Carbon Neutral Hydrogen A\$/kg MAvg
- -Australia Carbon Neutral Hydrogen A\$/MMBtu
- -Australia Carbon Neutral Hydrogen A\$/kg MAvg
- -Australia Carbon Neutral Hydrogen \$/kg
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- -California Carbon Neutral Hydrogen \$/MMBtu MAvg
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- -NW Europe Carbon Neutral Hydrogen Eur/kg
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- -USGC Carbon Neutral Hydrogen \$/MMBtu MAvg

Please send all questions and comments to

hydrogenassessments@spglobal.com and pricegroup@spglobal.com by Nov. 11, 2021. For written comments, please provide a clear indication if comments are not intended for publication by Platts for public viewing. Platts will consider all comments received and will make comments not marked as confidential available upon request.

Vercer Capital Markets Trading Limited changes entity name to Dare Global

Vercer Capital Markets Trading Limited has advised Platts that it would like to change its participating entity name in the Platts Market on Close assessment processes for:

Americas Fuel Oil - Paper

Asia Naphtha-Paper

Asia Mogas-Paper

Asia Jet Fuel-Paper

Asia Gasoil-Paper

Asia Fuel Oil-Paper

Asia APAC LNG - Paper

EMEA Naphtha-Paper

EMEA Mogas-Paper

EMEA Jet Fuel-Paper

EMEA Gasoil/Diesel- Paper

EMEA Fuel Oil - Paper

EMEA Crude BFOE CFDs- Paper

This follows the Vercer Capital Markets Trading Limited name change to Dare Global Limited.

Platts has reviewed Dare Global Limited and will consider information from Dare Global Limited in the Americas, Asia and EMEA assessment processes for the abovementioned markets, subject at all times to adherence with Platts editorial standards.

Platts will publish all relevant information from Dare Global Limited accordingly. Platts welcomes all relevant feedback regarding MOC participation. Platts considers bids, offers and transactions by all credible and creditworthy parties in its assessment processes. For comments and feedback, please contact: Platts editors at oilgroup@spglobal.com and PriceGroup@spglobal.com.

Platts launches Atlantic LNG physical eWindow

S&P Global Platts has launched the Platts Editorial Window, or eWindow, communication tool for its Atlantic LNG physical Market on Close (MOC) assessment process for its DES Northwest Europe (NWE), DES Mediterranean (MED) and FOB Gulf Coast Marker (GCM) price assessments on Sept. 24, 2021. Participants in the Platts MOC process are now able to submit bids, offers and expressions of interest to trade for publication directly through the eWindow communication tool or through an editor, who would then publish the information using the software.

The instruments that are launched for the Platts Atlantic LNG are from the third to the fifth half-month forward (H+3 to H+5) in dollars per MMBtu for the DES NWE and DES MED assessments, and 30-60 days forward for FOB GCM. Market participants can state their specific bid or offer delivery windows — for example, 3-day or 5-day delivery or loading windows — within these instruments.

The instruments will allow for a variety of different delivery or loading locations to be used in bids and offers, such as: DES UK, DES Spain, etc.

For delivery locations that are not listed individually, market participants can select "DES in TQC" and input the details directly the DES basis of the bid or offer in the Terms, Quality & Comments (TQC) box.

The instruments will allow for a volume range to be expressed for bids and offers, up to $0.3\,\mathrm{TBtu}$.

If the bid or offer is in a volume range, then the instrument called Platts Atlantic LNG (Qty Range) would be selected. The instruments will also allow for a variety of pricing basis.

Market participants can also input directly other terms related to their bids or offers in the TQC box.

The eWindow instruments will generate a different format for headlines of bids, offers and trades published on Platts LNG Alert and via other Platts services. For example, a headline that currently appears as:

Atlantic LNG MOC: COMPANY Offers Oct TTF ICE Front Month Average +0.15 \$/ MMBTU DES Pricing 24-30 September. 2 Day Delivery Window: 11-12 October. Base Discharge Port: Buyer to advise during CN process. No later than 20 days prior to the 2 Day Arrival Period, Buyer can nominate substitute Discharge Port in Mugardos, Rotterdam, Dragon, Isle of Grain, South Hook, Montoir, Dunkirk, Zeebrugge, Bilbao, Huelva, Barcelona, Sagunto, FOS. GHV: 1000 to 1120 Btu/SCF. Contract Quantity 3.65 Tbtu +/-5%. Base ship: will be nominated upon completion of deal. No later than 15 days prior to the 1 Day Arrival Period, Seller may nominate an Alternate LNG Ship subject to SSCS and terminal acceptance. Base Load Port: Freeport. Seller's option to nominate an Alternative Load Port no later than 15 days prior to the 2 day Arrival Period. Laytime 36 hours., will be published as:

Platts Atlantic LNG DES NWE+MED H3-H5, COMPANY offers Oct11-Oct12 100% TTF Full Month Oct \$0.15 for 3.65 Pricing 24-30 September. Base Discharge Port: buyer to provide at trade confirmation. No later than 20 days prior to the 2 Day Arrival Period, Buyer can nominate substitute Discharge Port in Mugardos, Rotterdam, Dragon, Isle of Grain, South Hook, Montoir, Dunkirk, Zeebrugge, Bilbao, Huelva, Barcelona, Sagunto, FOS. GHV: 1000 to 1120 Btu/SCF. Base ship: will be nominated upon completion of deal. No later than 15 days prior to the 1 Day Arrival Period, Seller may nominate an Alternate LNG Ship subject to SSCS and terminal acceptance. Base Load Port: Freeport. Seller's option to nominate an Alternative Load Port no later than 15 days prior to the 2 day Arrival Period. Laytime 36 hours.

TIMING: All bids and offers will still have to be submitted by 16.00.00.000 London time. Following any trade, market participants will have 60 seconds to rebid or re-offer. No price changes are allowed from 16:28:00:000 to the close of the MOC process at 16.30.00.999. A rebid or re-offer, following a trade, in last 120 seconds prior to the close of the MOC will trigger a 120-second extension from 16.30.01.000 to 16.32.00.999, in order to adequately test that rebid or re-offer.

INCREMENTABILITY: Bids and offers can be improved by a maximum of \$0.05/MMBtu and a minimum of \$0.01/MMBtu every 120 seconds. As per Platts editorial guidelines, buyers or sellers can withdraw bids/offers at any time when communicating through eWindow, provided no prior interest to transact has been expressed by any potential counterparty. All bids and offers are firm from

the moment they are submitted into eWindow to the moment they are traded, the MOC process closes or the bid/offer is withdrawn from the system by the trader or a Platts editor. Market participants can still send bids and offers directly to an LNG editor for publication via eWindow. In markets where Platts eWindow is in operation, the eWindow clock will be used to determine the correct sequence of events when a bid or offer is amended, withdrawn, or traded by an interested counterparty. Bids or offers submitted by phone, or any other medium, such as instant messaging software, shall be measured at the time the bid, offer or trade indication is actually transmitted through the eWindow system via the editor.

Guidelines for the publication of bids and offers in the MOC process are published in the LNG Timing and Increment Guidelines available here: https://www.spglobal.com/platts/en/our-methodology/methodology-specifications/lng/lng-timing-and-increment-guidelines.

Full information relevant to these assessments can be found in the Global LNG specifications guide available here: https://www.spglobal.com/platts/en/our-methodology/methodology-specifications/lng/liquefied-natural-gas-lng-assessments-and-netbacks-methodology.

Platts expects credit relationships that prevail inside its assessment environment to fully reflect relationships in the markets as a whole. eWindow provides direct entry and management of credit filters which should mirror those normally applied in the marketplaces.

Where Platts editors publish bids and offers on behalf of a company that submits data to an editor, counterparty credit settings are set to "open" for regular participants in the assessment process unless companies have notified Platts in advance of any restrictions.

If a counterparty submitting information through an editor has not already notified Platts of any counterparty credit restrictions, they should notify Platts at least one hour prior to the start of the MOC process if any counterparty credit filters need to be modified.

Please send all feedback, comments and questions to

<u>Ingeditorialteam@spglobal.com</u> and <u>pricegroup@spglobal.com</u>.

For written comments, please provide a clear indication if comments are not intended for publication by Platts for public viewing.

Platts will consider all comments received and will make comments not marked as confidential available upon request.

Platts proposes to change timing and increment guidelines for Asia LNG MOC S&P Global Platts is proposing to change the timing and increment guidelines

S&P Global Platts is proposing to change the timing and increment guidelines for its Asia LNG Market on Close assessment process.

Platts proposes to allow a maximum price move of 5 cents/MMBtu per 60 seconds for bids and offers submitted through the eWindow communication tool and through a Platts editor for the Asia LNG physical MOC process, and a maximum price move of 5 cents/MMBtu per 30 seconds for bids and offers submitted through the eWindow communication tool and 5 cents/MMBtu per 60 seconds for bids and offers through the Platts editor for the Asia LNG derivatives MOC process from Jan. 17, 2022.

Platts is also proposing to change the final state for the Asia LNG physical MOC process to 16:29:00 Singapore time for eWindow or manual MOC environment, and Asia LNG derivatives to 16:29:30 Singapore time for eWindow MOC environment and 16.29.00 Singapore time for manual MOC environment. Time allowed for participants to repeat a bid or offer for Asia LNG physical will remain unchanged from the current guideline of maximum 60 seconds following a trade, while the maximum time allowed for participants to repeat a bid or offer for Asia LNG derivatives following a trade will be shortened to 30 seconds, from 60 seconds currently.

An extension of the MOC process will be triggered by a rebid or re-offer following a trade between 16:29:00 and 16:30:00 Singapore time for Asia LNG physical, and between 16:29:30 and 16:30:00 Singapore time for Asia LNG derivatives.

The extension period will last for one minute until 16:31:00 Singapore time for both Asia LNG physical and derivatives in order to adequately test that bid or offer. The proposed changes will apply to bids and offers submitted by market participants for the Platts JKM, WIM and MEM assessments directly through the Platts Editorial Window, or eWindow, communication tool and through a Platts editor who would then publish bids and offers using the software.

Under Platts existing timing and increment guidelines, bids and offers for Asia LNG physical submitted directly through the eWindow tool and through a Platts editor can improve by up to 5 cents/MMBtu per 120 seconds, with final state at 16:28:00 Singapore time.

Bids and offers for Asia LNG derivatives submitted directly through the eWindow communication tool can improve by a maximum of 5 cents/MMBtu every 60 seconds, and by a maximum of 5 cents/MMBtu every two minutes in the manual MOC process, with final state at 16:29:00 Singapore time.

The increments have been amended to a maximum of 10 cents/MMBtu every 30 seconds for Asia LNG derivatives since Oct. 12, and to a maximum of 5 cents/MMBtu every 60 seconds for Asia LNG physical since Oct. 8 until further notice, to reflect the current volatility in the market due to European gas market price movements (https://www.spglobal.com/platts/en/our-methodology/subscriber-notes/101221-platts-asia-lng-derivatives-market-on-close-incrementability-changes).

Platts has established clearly defined timing guidelines and standards of incrementability that apply when publishing bids and offers in the MOC process, in order to ensure an orderly and transparent price assessment process. Guidelines for the publication of bids and offers in the MOC process are available in the Platts LNG Timing and Increment Guide, available here: https://www.spglobal.com/platts/en/our-methodology/methodology-specifications/lng/lng-timing-and-increment-guidelines.

Please send all comments, feedback and questions to

<u>LNGeditorialteam@spglobal.com</u> and <u>pricegroup@spglobal.com</u> by Dec. 1. For written comments, please provide a clear indication if comments are not intended for publication by Platts for public viewing.

Platts will consider all comments received and will make comments not marked as confidential available upon request.

HYDROGEN & CARBON

NORTH AMERICA HYDROGEN ASSESSMENTS, NOVEMBER 5*

	Freeling	O	Including Coopy		
Draduation Dathway		ding Capex	Including Capex \$/kg Change		
Production Pathway	\$/kg	Change	\$/Kg	Change	
Alberta (C\$/kg)					
SMR w/o CCS	0.8000	-0.0466	1.5217	-0.0465	
Alkaline Electrolysis PEM Electrolysis	3.3452 3.8642	-0.4124 -0.4764	4.5372 5.9998	-0.4121 -0.4759	
	3.0042	-0.4764	5.9996	-0.4759	
Appalachia	0.7001	0.0705	1.001.4	0.0705	
SMR w/o CCS Alkaline Electrolysis	0.7661 4.8745	-0.0705 +0.3419	1.3614 5.7539	-0.0705 +0.3420	
PEM Electrolysis	5.6308	+0.3419	7.2064	+0.3420	
Gulf Coast	3.0300	10.3343	7.2004	10.3330	
SMR w/o CCS	0.8144	0.0040	1 2105	0.0040	
Alkaline Electrolysis	2.6627	-0.0649 -0.2479	1.3185 3.4950	-0.0649 -0.2480	
PEM Electrolysis	3.0758	-0.2864	4.5672	-0.2864	
Midcontinent	0.0100	0.2001	4.0012	0.2001	
SMR w/o CCS	0.7651	-0.0799	1.2964	-0.0799	
Alkaline Electrolysis	3.0631	-0.5089	3.9169	-0.5089	
PEM Electrolysis	3.5383	-0.5879	5.0681	-0.5879	
Northeast					
SMR w/o CCS	0.7865	-0.0809	1.4212	-0.0808	
Alkaline Electrolysis	3.1039	-0.0999	4.0085	-0.0999	
PEM Electrolysis	3.5855	-0.1153	5.2063	-0.1153	
Northern California					
SMR w/o CCS	0.9655	+0.0337	1.6958	+0.0337	
Alkaline Electrolysis	3.1133	+0.1953	4.0996	+0.1954	
PEM Electrolysis	3.5964	+0.2257	5.3634	+0.2256	
Northwest					
SMR w/o CCS	0.8257	-0.0047	1.4083	-0.0047	
Alkaline Electrolysis	2.7996	+0.4738	3.6957	+0.4738	
PEM Electrolysis	3.2339	+0.5472	4.8395	+0.5472	
Rockies					
SMR w/o CCS	0.8019	-0.0304	1.3600	-0.0304	
Alkaline Electrolysis	3.3665	+0.5804	4.2331	+0.5804	
PEM Electrolysis	3.8889	+0.6705	5.4415	+0.6704	
Southeast					
SMR w/o CCS	0.8393	-0.0651	1.3590	-0.0651	
Alkaline Electrolysis	2.8773	-0.0664	3.7320	-0.0663	
PEM Electrolysis	3.3237	-0.0767	4.8550	-0.0767	
Southern California					
SMR w/o CCS	0.9809	+0.0823	1.6817	+0.0823	
Alkaline Electrolysis	3.0244	+0.2640	3.9903	+0.2640	
PEM Electrolysis	3.4937	+0.3050	5.2243	+0.3050	
Upper Midwest					
SMR w/o CCS	0.8102	-0.0671	1.3786	-0.0672	
Alkaline Electrolysis	3.7287 4.3072	-0.1175 -0.1358	4.6350	-0.1176	
PEM Electrolysis	4.3072	-0.1358	5.9311	-0.1358	

JAPAN HYDROGEN ASSESSMENTS, NOVEMBER 8

	Exclu	ıding Cəpex	Inclu	Including Capex		
Production Pathway	Yen/kg	Change	Yen/kg	Change		
SMR w/o CCS	563.3235	+26.4902	649.1602	+26.2936		
Alkaline Electrolysis	804.9282	+107.4519	946.6791	+107.1273		
PEM Electrolysis	929.8256	+124.1255	1183.8012	+123.5439		

ASSESSMENT RATIONALE

The S&P Global Platts hydrogen prices are daily valuations that incorporate the cost of variable natural gas, electricity, and carbon inputs, where applicable. A second set of valuations include fixed assumptions for capital and operating expenses. The Platts hydrogen prices are not based on observed or reported market transactions. Details on the Platts hydrogen methodology can be found at:

https://www.spglobal.com/platts/en/our-methodology/methodology-specifications/ energy-transition/hydrogen-methodology.

VOLUNTARY CARBON CREDITS, NOVEMBER 8

	\$/mtCO2e	Change	Eur/mtC02e	Change
Platts CEC	7.900	0.000	6.827	-0.023

Note: The Platts CEC assessment reflects the value of CORSIA-eligible credits in the voluntary carbon market, and is not a component of Platts hydrogen assessments.

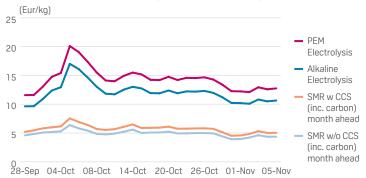
UK HYDROGEN ASSESSMENTS, NOVEMBER 8

Production Pathway	GBP/kg	Change	GBP/KWh	Change
ATR w CCS	4.0790	+0.1456	0.1224	+0.0044
ATR w CCS (inc. Capex & Carbon)	4.3982	+0.1456	0.1320	+0.0044
Alkaline Electrolysis	10.5014	+0.2997	0.3151	+0.0090
Alkaline Electrolysis (inc. Capex)	11.1154	+0.2967	0.3335	+0.0089
PEM Electrolysis	12.1282	+0.3462	0.3639	+0.0104
PEM Electrolysis (inc. Capex)	13.2283	+0.3407	0.3969	+0.0102

NETHERLANDS HYDROGEN ASSESSMENTS, NOVEMBER 8

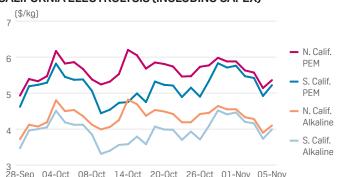
Production Pathway	Eur/kg	Change	Eur/KWh	Change
SMR w/o CCS	3.5750	+0.1818	0.1073	+0.0055
SMR w/o CCS (inc. Capex)	4.0099	+0.1806	0.1203	+0.0054
SMR w/o CCS (inc. Carbon)	4.1133	+0.1918	0.1234	+0.0057
SMR w/o CCS (inc. Capex & Carbon) 4.5482	+0.1906	0.1365	+0.0058
SMR w CCS	4.4710	+0.2050	0.1341	+0.0061
SMR w CCS (inc. Capex)	5.1753	+0.2030	0.1553	+0.0061
SMR w CCS (inc. Carbon)	4.5248	+0.2059	0.1358	+0.0062
SMR w CCS (inc. Capex & Carbon)	5.2291	+0.2040	0.1569	+0.0061
Alkaline Electrolysis	10.0073	+0.0880	0.3002	+0.0026
Alkaline Electrolysis (inc. Capex)	10.7256	+0.0861	0.3218	+0.0026
PEM Electrolysis	11.5574	+0.1018	0.3468	+0.0031
PEM Electrolysis (inc. Capex)	12.8443	+0.0982	0.3854	+0.0030

NETHERLANDS HYDROGEN (INCLUDING CAPEX)



Source: S&P Global Platts

CALIFORNIA ELECTROLYSIS (INCLUDING CAPEX)



28-Sep 04-Oct 08-Oct 14-Oct 20-Oct 26-Oct 01-Nov 05-Nov

Source: S&P Global Platts