

# LNG DAILY

Volume 18 / Issue 217 / November 4, 2021

## European LNG weakens following resumption of Russian gas flows into Germany

### KEY DRIVERS / MARKET HIGHLIGHTS

- Russian flows resume at Mallnow compressor
- Botas closes tender for nine DES cargoes

### SHIPPING MARKET HIGHLIGHTS

- Day rates remain at \$250,000/d in Pacific
- LNG FINIMA heard fixed by Vitol at \$190,000/d

### NEWS HEADLINES

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### SHIPPING RATES, NOV 4

	\$/day	Ballast rate
Asia Pacific day rate	NA	NA%
Atlantic day rate	195,000	100%
TCR Australia-Japan	NA	
TCR USG-NWE	NA	
TCR USG-Japan	NA	

### DAILY CUMULATIVE AVERAGES AND MONTHLY AVERAGES

Nov 4 (\$/MMBtu)	Cumulative monthly average	Previous month average
JKM	AAOV500 NA Dec	AAOV503 33.254 Nov
DES West India	AALIC00 NA Dec	AAWIC03 31.934 Nov
DES Mediterranean	AADC00 28.204 Dec	AASWC03 29.207 Nov
DES Northwest Europe	AASDF00 28.267 Dec	AASDE03 29.202 Nov
FOB GCM Loading Month	LGCSM00 25.271 Dec	LGCSM31 27.329 Nov
JKM Yen	AAOVT00 NA Dec	AAOVT03 3707.118 Nov
JKM Yuan	LJCWM00 NA Dec	LJCWM03 189.189 Nov

JKM <sup>TM</sup>	AAOVQ00	NA	NANA NA
Cumulative monthly average (Dec)	AAOV500	NA	
Previous month average (Nov)	AAOV503	33.254	
CNL WTW JKTC	ACNLF00	NA	

### PLATTS DAILY LNG MARKERS (\$/MMBtu)

Nov 4			Change
<b>DES Japan/Korea Marker (JKM)</b>			
JKM (Dec)	AAOVQ00	NA	NA NA
H1 Dec	AAPSU00	NA	NA NA
H2 Dec	AAPSV00	NA	NA NA
H1 Jan	AAPSW00	NA	NA NA
H2 Jan	AAPXA00	NA	NA NA
JKM (Dec) Japanese Yen	AAOVR00	NA	NA NA
JKM (Dec) Chinese Yuan (CNY/mt)	LJCMS00	NA	NA NA
<b>DES Japan/Korea (JKM) derivatives Singapore close*</b>			
Balmo-ND	LJKMB00	NA	NA NA
Dec	LJKM000	NA	NA NA
Jan	LJKM001	NA	NA NA
Feb	LJKM002	NA	NA NA
<b>DES Japan/Korea (JKM) derivatives London close*</b>			
Dec	JKLM000	32.186	-1.764 ▼
Jan	JKLM001	30.361	-1.764 ▼
Feb	JKLM002	28.086	-1.724 ▼
<b>DES Mediterranean Marker (MED)</b>			
MED (Dec)	AASXY00	25.220	-2.040 ▼
H1 Dec	AASXZ00	25.120	-2.015 ▼
H2 Dec	AASYA00	25.320	-2.065 ▼
H1 Jan	AASYB00	25.367	-1.993 ▼
<b>DES Northwest Europe Marker (NWE)</b>			
NWE (Dec)	AASXU00	25.220	-2.040 ▼
H1 Dec	AASXV00	25.120	-2.015 ▼
H2 Dec	AASXW00	25.320	-2.065 ▼
H1 Jan	AASXX00	25.367	-2.093 ▼
<b>Middle East Marker (MEM)</b>			
MEM (Dec)	LMEMA00	NA	NA NA
H1 Dec	LMEMB00	NA	NA NA
H2 Dec	LMEMC00	NA	NA NA
H1 Jan	LMEMD00	NA	NA NA
H2 Jan	LMEME00	NA	NA NA
<b>DES West India Marker (WIM)</b>			
WIM (Dec)	AARXS00	NA	NA NA
H2 Nov	LMEAA00	NA	NA NA
H1 Dec	LMEAB00	NA	NA NA
H2 Dec	LMEAC00	NA	NA NA
H1 Jan	LMEAD00	NA	NA NA
H2 Jan	LMEAE00	NA	NA NA
<b>DES West India Marker (WIM) derivatives Singapore close*</b>			
Dec	AWIMB00	NA	NA NA
Jan	AWIMM01	NA	NA NA
Feb	AWIMM02	NA	NA NA
<b>FOB Gulf Coast Marker (GCM)</b>			
GCM	LGCSM01	23.300	-1.700 ▼

\*For full forward curve, see page 4

### LNG NETBACK PRICES (\$/MMBtu)

Nov 4		Change
FOB Australia	AARXR00	NA NA NA
FOB Middle East	AARXQ00	NA NA NA
DES Brazil Netforward	LEBHH01	26.020 -1.540 ▼
FOB Singapore	AARXU00	NA NA NA
FOB Murmansk	AARXV00	24.260 -2.010 ▼

## MARKET COMMENTARIES

## European LNG weakens following resumption of Russian gas flows into Germany

European LNG prices weakened Nov. 4 following the resumption of gas flows from Russia into Western Germany.

The Platts DES Northwest Europe for December was assessed at \$25.220/MMBtu, down \$2.040/MMBtu from the previous day. The first half of December was assessed at \$25.120/MMBtu, and the second half was assessed at \$25.320/MMBtu, keeping the intramonth contango at 20 cents/MMBtu from 20 cents/MMBtu day on day.

Prices fell day-on-day amid falling TTF December prices. The TTF December contract fell from an intraday high of Eur 79.900/MWh to Eur 73.945/MWh at market close. Market sources attributed the movements to increased gas flows being nominated through the Mallnow gas compressor. No Russian gas had been nominated to Western Europe through Mallnow since Oct. 30, according to data from operator Gascade. The gas flows nominated from Nov 4-5 may provide temporary respite for TTF prices, despite still being 40% below flows on Oct. 28. Platts assessed the TTF November contract at 24.988/MMBtu on Nov. 4, down \$2.162/MMBtu on the day.

Owing to the Singapore public holiday, the JKM derivatives market traded with a lower level of liquidity, with spread trades still high on the agenda for market participants. Spread trades for the JKM/TFU (TTF quoted in \$/MMBtu) for January remained just above the \$5/MMBtu level.

In the Atlantic Market on Close assessment process, BP bid for a DES Rotterdam Dec. 15-17 delivery cargo at TTF minus 10 cents/MMBtu.

In the East Mediterranean, Botas closed a tender for nine DES cargoes for December-February delivery on Nov. 4; however, no results were reported. Sources were of the opinion due to ongoing credit issues and the high pricing environment, there could be limited participation for the tender.

Elsewhere, US FOB prices continued to track European prices owing to the bullish shipping market and lack of tonnage availability in the Atlantic leaving trips to Asia unattainable for most market participants, as well as Panama congestions adding to costs. The front month Henry Hub contract remained over the \$5.50/MMBtu level with weather patterns dominating the sentiment.

The LNG shipping market showed neither an uptrend nor a downturn, with day rates remaining at \$250,000/d for the Pacific basin and at \$195,000/d in the Atlantic. The LNG FINIMA, 170,000 cu m, was heard fixed by Vitol for an early December loading ex USG at rate of \$190,000/d. — [Allen Reed](#)

## PLATTS LNG US FOB GULF COAST DAILY RATIONALE &amp; EXCLUSIONS

The FOB Gulf Coast Marker (GCM) was assessed at \$23.30/MMBtu on Nov. 4. The assessment was based on tradable values reported by market participants at \$22.40/MMBtu and \$23/MMBtu by the middle of the day for FOB USGC cargoes loading 30 to 60 days forward, in conjunction with lengthy maximum wait times at the Panama Canal and lower prices in end-user markets. This rationale applies to symbol(s) <LGCSM01> Exclusions: None

## PLATTS LNG EUROPEAN ASSESSMENT RATIONALE &amp; EXCLUSIONS

The Northwest Europe Marker (NWE) for December was assessed Nov. 4 at \$25.220/MMBtu. H1 NWE for December was assessed at \$25.120/MMBtu. H2 NWE for December was assessed at \$25.320/MMBtu. The NWE prices were assessed lower day on day reflecting falling flat prices for December TTF. The TTF December contract fell from an intraday high of Eur79.900/MWh to Eur73.945/MWh at market close. Market sources attributed the downward movements to increased gas flows being nominated through the Mallnow gas compressor. NBP/TTF premiums fell to an intraday low of \$0.480/MMBtu. Towards market close, losses in the December TTF contract led to NBP/TTF premiums rising to \$0.643/MMBtu at 4:30 pm London time. The Mediterranean Marker (MED) for December was assessed at \$25.220/MMBtu. H1 MED for December was assessed at \$25.120/MMBtu. H2 MED for December was assessed at \$25.320/MMBtu. The MED price was assessed lower 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 50 cents/MMBtu on Nov. 3. Sources pegged East Mediterranean prices below TTF plus 50 cents for December and the West-East Med freight difference at around \$0.20-0.30/MMBtu. In the Atlantic MOC, BP bid for a Dec. 15-17, 3.3 +/- 5% Tbtu cargo into Rotterdam at ICE TTF December front-month average minus 10 cents/MMBtu. This was converted to a fixed price of \$24.917/MMBtu. This was normalized down 3 cents due to the prompter alternate discharge port nomination than the Platts standard and a lower cargo size for cargoes delivered into NWE, compared to Platts standard 3.5Tbtu +/- 5% to a final price \$24.887/MMBtu. 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

## NEWS

## Italy's Snam sees LNG regasification, gas storage volumes drop in Q3

- LNG volume down 40% as fewer tankers allocated
- TAP supply reduces need for LNG imports
- Storage injection volume falls for a second year

Italian gas infrastructure operator Snam reported Nov. 4 a 40% decrease in the volume of LNG regasified at its Panigaglia terminal and a 10% drop in gas volume moved through its storage sites in the third quarter amid weaker demand.

The company regasified 0.5 Bcm during the quarter at the 3.5 Bcm/year terminal.

It said that fewer cargoes were also delivered during the first nine months of 2021, with 28 unloadings compared with 51 in the same period of 2020.

Part of the reason for the lower LNG supply is the major change in Italy's gas supply portfolio with the start-up at the end of 2020 of the Trans Adriatic Pipeline (TAP), which brings up to 8 Bcm/year of gas

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**REPORTED ATLANTIC BIDS, OFFERS AND TRADES (\$/MMBtu)**

Date	Seller	Loading	Buyer	Basis	Loading window	Offer/Bid	Notes
<b>Best bids/offers</b>							
Nov 04		Rotterdam delivery	BP	DES	DEC 15-17	TTF ICE-0.10 bid	MOC

**REPORTED APAC BIDS, OFFERS AND TRADES (\$/MMBtu)**

Date	Buyer	Destination	Seller	Source	Basis	Delivery period	Bid/Offer	Notes
<b>Best bids/offers</b>								
Nov 04								
<b>Last 5 trades</b>		<b>APAC</b>						
Nov 03	BP	JKTC			DES	Dec 3-7	Dec TTF+3.85 bid	MOC
Nov 03	Trafigura	JKTC			DES	Dec 13-15	Jan TTF+3.75 bid	MOC, withdrawn
Nov 03	Vitol	JKTC			DES	Dec 27-31	Dec TTF+3.95 bid	MOC
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

from Azerbaijan to Italy.

In Q3, TAP deliveries covered 13% of Italian supply, compared with zero in Q3 2020, while record international LNG prices have also seen cargoes arbitrated to other markets.

The record high prices during 2021 have also affected storage injections, with 3 Bcm injected into the company's sites during Q3, down from 3.4 Bcm in the same quarter of 2020 and 4 Bcm in Q3 2019.

The company reported a decline in overall demand during Q3 of 4% year on year to 13.3 Bcm, although its volume of gas injected into the network was unchanged at 17.4 Bcm.

It said it sees Italian gas demand growing compared with 2020, which was heavily impacted by COVID-19 measures, with a recovery in industrial demand and a cold winter early in 2021 the main drivers.

For the first nine months, Italian gas demand has risen 6% year on year, including an 11% increase in industrial demand to 10.6 Bcm, equivalent to around one fifth of national demand. — [Gianluca Baratti](#)

## Ecogas wins contract to build LNG storage, regasification facilities in Burkina Faso

- Latest addition to West African LNG infrastructure
- Ecogas to use Ghana's emerging LNG hub at Tema
- Already planning facilities in Liberia, Sierra Leone

Energy infrastructure development company Ecogas has been awarded a contract to build LNG storage and regasification facilities in Burkina Faso as it looks to expand its presence in West Africa, it said Nov. 4.

Ecogas — an affiliate of the Tema LNG Terminal Company (TLTC) that owns the soon-to-be-commissioned LNG import facility in Ghana — had already won exclusive rights to build and operate storage and regasification facilities in Liberia and Sierra Leone.

The award of the Burkina Faso contract is based on Ecogas utilizing the Tema LNG terminal in Ghana, which will act as a storage hub for LNG in the region.

With construction of the terminal now complete, the first LNG cargo into Tema is expected in the coming weeks, according to industry sources.

Ecogas said that by sourcing fuel from Tema, it aims to introduce a reliable supply of LNG into the West African energy mix. "Burkina

Faso now joins Sierra Leone and Liberia as the latest part of Ecogas' regional infrastructure network," it said.

### Burkina Faso demand

Burkina Faso has existing gas demand of around 25 MMcf/d, which is likely to double in the next four years, according to company estimates.

The domestic market is dominated by the supply of gas to gas-powered power stations operated by the state-owned electricity company, Sonabel, and large private sector industrial users, such as mine operators and electricity generators.

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## ASIA/MIDDLE EAST (\$/MMBtu), NOV 4\*

## DES Japan/Korea Marker (JKM)

JKM (Dec)	AAOVQ00	NA
JKM (H1 Dec)	AAPSU00	NA
JKM (H2 Dec)	AAPSV00	NA
JKM (H1 Jan)	AAPSW00	NA
JKM (H2 Jan)	AAPXA00	NA
Asian Dated Brent (16:30 Singapore)	ADBAA00	NA
JKM vs Henry Hub futures	AAPRZ00	NA
JKM vs NBP futures	AAPSA00	NA
JKM vs TTF	LNTFJ00	NA
JKM vs Asian Dated Brent (16:30 Singapore)	AAPSB00	NA
JKM vs MED (16:30 London)	ALNGB00	NA
JKM vs NWE (16:30 London)	ALNGA00	NA

## DES Japan/Korea (JKM) derivatives Singapore close

Balmo-ND	LJKMB00	NA
Dec	LJKMO00	NA
Jan	LJKMO01	NA
Feb	LJKMO02	NA
Mar	LJKMO03	NA
Q1 2022	LJKQR01	NA
Q2 2022	LJKQR02	NA
Summer 2022	LJKSN01	NA
Winter 2022	LJKSN02	NA
2022	LJKYR01	NA
2023	LJKYR02	NA
2024	LJKYR03	NA

## DES Japan/Korea (JKM) derivatives London close

Dec	JKLMO00	32.186
Jan	JKLMO01	30.361
Feb	JKLMO02	28.086
Mar	JKLMO03	24.803
Q1 2022	JKLQR01	27.750
Q2 2022	JKLQR02	15.830
Summer 2022	JKLSN01	15.017
Winter 2022	JKLSN02	15.617
2022	JKLYR01	18.154
2023	JKLYR02	11.054
2024	JKLYR03	8.404

## DES West India Marker (WIM)

WIM (Dec)	AARXS00	NA
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## DES West India Marker (WIM) derivatives Singapore close

Dec	AWIMB00	NA
Jan	AWIMM01	NA
Feb	AWIMM02	NA
Mar	AWIMM03	NA
Q1 2022	AWIMQ01	NA
Q2 2022	AWIMQ02	NA
Summer 2022	AWISN01	NA
Winter 2022	AWISN02	NA
2022	AWIMY01	NA
2023	AWIMY02	NA
2024	AWIMY03	NA

## Carbon Neutral LNG

CNL WTW JKTC Differential (ex-Australia)	ACNLF00	NA
CNL WTT JKTC Differential (ex-Australia)	ACNLB00	NA
CNL DES JKTC Differential (ex-Australia)	ACNLG00	NA
CNL Combustion JKTC	ACNLJ00	NA

## FOB Middle East

FOB Middle East	AARXQ00	NA
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## FOB Australia (netback)

JKM (Dec)	AAOVQ00	NA
(-) Freight	AAUSA00	NA
FOB Australia	AARXR00	NA

## 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	24.988
Jan	GTFWM20	24.870

## Competing fuel prices

Japan Customs Cleared crude oil (Aug) (\$/b)	AAKOP00	73.78	Final
Japan Customs Cleared crude oil (Sep) (\$/b)	AAKOM00	73.81	Estimated
HSFO 3.5% sulfur 180 CST FOB Singapore	LUAXZ00	NA	
NEAT Coal Index	JKTCB00	NA	
Minas crude oil	LCABO00	NA	
Naphtha CFR Japan	LNPHJ00	NA	

## EUROPE (\$/MMBtu), NOV 4

	\$/MMBtu	Eur/MWh	Eur/MMBtu
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## DES Mediterranean Marker (MED)

MED (Dec)	AASXY00	25.220	LNMTA00	74.480	LNNXA00	21.845
MED (H1 Dec)	AASXZ00	25.120				
MED (H2 Dec)	AASYA00	25.320				
MED (H1 Jan)	AASYB00	25.367				
Dated Brent (16:30 London)	ADBAB00	14.12				
MED vs Henry Hub futures	AASYF00	19.648				
MED vs TTF	LNTFS00	0.232				
MED vs NBP futures	AASYH00	-0.432				
MED vs Dated Brent (16:30 London)	AASYJ00	11.102				
MED vs NWE	ALNSA00	0.000				
MED vs JKM	AASYM00	NA				

## DES Northwest Europe Marker (NWE)

NWE (Dec)	AASXU00	25.220	LNNTA00	74.480	LNNXA00	21.845
NWE (H1 Dec)	AASXV00	25.120				
NWE (H2 Dec)	AASXW00	25.320				
NWE (H1 Jan)	AASXX00	25.367				
Dated Brent (16:30 London)	ADBAB00	14.12				
NWE vs Henry Hub futures	AASYE00	19.648				
NWE vs TTF	LNTFN00	0.232				
NWE vs NBP futures	AASYG00	-0.432				
NWE vs Dated Brent (16:30 London)	AASYI00	11.102				
NWE vs MED	AASYK00	0.000				
NWE vs JKM	AASYL00	NA				
NWE as a % of NBP	AASYD00	98.32				

## Competing fuel prices

Northwest Europe fuel oil	LAEGR00	12.71
CIF ARA 15-60 day thermal coal	CSAAB00	7.14

## NORTH AMERICA (\$/MMBtu), NOV 4

## FOB Gulf Coast Marker (GCM)

GCM	LGCSM01	23.300
Dated Brent (16:30 London)	ADBAB00	14.12
GCM vs JKM	LGMIJ01	NA
GCM vs Henry Hub futures	LGMMH01	17.584
GCM vs TTF	LNTFG00	-1.688
GCM vs NWE	LGEUR00	-1.920
GCM vs MED	LGMET00	-1.920
GCM vs NBP futures	LGMMN01	-2.351
GCM vs Dated Brent (16:30 London)	LGMDB00	9.182
GCM vs USGC HSFO	LGMF000	12.620

## Competing fuel prices

US Gulf Coast high sulfur fuel oil	LUAXJ00	10.46
New York Harbor 1%S fuel oil	LUAXD00	12.46

\*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](http://www.platts.com).



## RECENT TENDERS AND STRIPS

Tender/ strip	Issuer/location	Tender type	(Loading) or delivery period	Slots/ cargoes	Opening	Closing date	Validity	Notes	Results
<b>November 04</b>									
Tender	BOTAS - Turkey	Buy	01-Dec-21 - 28-Feb-22	9 DES		04-Nov-21		9 cargo tender, closing Nov.4	
Tender	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	
Tender	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.	
Tender	Oman LNG - Oman LNG	Sell	(01-Dec-21 - 03-Dec-21)	1 DES or FOB		21-Oct-21		Closing 1pm Oman time	heard awarded to Gunvor around \$30/MMBtu FOB
Tender	Ichthys LNG - Ichthys LNG	Sell	(13-Nov-21 - 17-Nov-21)	1 DES or FOB	25-Oct-21	27-Oct-21	27-Oct-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
Tender	Darwin LNG - Darwin	Sell	(01-Dec-21 - 03-Dec-21)	1 DES or FOB		28-Oct-21		Dec 1-3 load or Dec 14-17 DES JKTC	heard awarded at approximately \$31/MMBtu FOB
Tender	Petronet - Dahej	Buy	16-Nov-21 - 30-Nov-21	1 DES	21-Oct-21	27-Oct-21	28-Oct-21	Seller to nominate delivery window for H2 Nov, fixed price only, DES Dahej or Kochi, 3.2 Tbtu	heard not awarded
Tender	Egas - Egypt	Sell	(13-Nov-21 - 25-Nov-21)	2 DES or FOB		26-Oct-21	26-Oct-21		Heard awarded approximately \$28s/MMBtu
Tender	PTT - Map Ta Phut	Buy	27-Nov-21 - 05-Dec-21	2 DES	25-Oct-21	26-Oct-21	26-Oct-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	IEASA - Escobar	Buy	19-Nov-21 - 19-Dec-21			26-Oct-21		Two cargo buy tender for Nov. 19 & Dec. 19 delivery	
Tender	Novatek - Yamal	Sell	05-Dec-21 - 31-Mar-22	3 DES		21-Oct-21		Dec. 5-23, Jan. 3-21, and March 25-31 delivery	Heard partially awarded
Tender	Sakhalin Energy - Sakhalin	Sell	(01-Dec-21 - 01-Dec-21)	1 DES or FOB		21-Oct-21	22-Oct-21		heard awarded at approximately \$34/MMBtu
Tender	Angola LNG - Angola LNG	Sell	05-Nov-21 - 19-Nov-21	1 DES		25-Oct-21	26-Oct-21	Furthest to India, onboard Seri Balqis	
Tender	BOTAS - Turkey	Buy	01-Nov-21 - 31-Mar-22	19 DES		18-Oct-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
Tender	Darwin LNG - Darwin	Sell	20-Nov-21 - 27-Nov-21	1 DES	12-Oct-21	14-Oct-21	14-Oct-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
Tender	APLNG - Australia Pacific LNG	Sell	(25-Nov-21 - 27-Nov-21)	1 DES	11-Oct-21	12-Oct-21			Heard awarded to Gunvor
EOI	Kogas - Prelude	Sell	(06-Dec-21 - 22-Dec-21)	1 DES or FOB				Dec 6-10 loading or Des 19-22 DES JKTC	heard not awarded
Tender	Tohoku Electric - Japan	Buy	08-Jan-22 - 28-Dec-23	6 Unknown	14-Oct-21	14-Oct-21	15-Oct-21	Jan. 2022-end 2023 delivery on a Brent-linked basis	heard awarded to a portfolio player
Tender	PTT - Map Ta Phut	Buy	18-Oct-21 - 29-Oct-21	2 DES		12-Oct-21		Closes at 10 AM (Thailand time) on October 12	Heard awarded at approximately \$35/MMBtu to Shell and PTT International
Tender	EGAT - Map Ta Phut	Buy	10-Nov-21 - 16-Dec-21	2 DES		20-Oct-21		2 cargoes Nov 10-12 or 15-17, and Dec 10-12 or 14-16	

Burkina Faso's energy minister Bachir Ismael Ouedraogo said the supply of LNG would benefit industry and communities.

"LNG's introduction to our country is in line with our government's priorities to provide a platform to continue our energy transition towards a cleaner future while committing to sustainable economic growth," Ouedraogo said.

The Tema LNG terminal is expected to create a regional LNG hub with a storage capacity in excess of 180,000 cu m to serve the regional market.

Land-locked Burkina Faso could take LNG by truck given that the Ghana facility also has the ability to load LNG directly onto trucks.

It means that the need for large amounts of capital expenditure and credit costs to introduce LNG into new countries has been removed.

The West African region has a large extractive industry with an appetite for power that is currently mainly served by distillate fuels at high prices.

There is a requirement of an estimated 1 million mt/year of LNG across the region for power generation and displacement of distillates in the extractive sector.

This is expected to grow to about 1.8 million mt/year over the next decade as countries in the region invest in further generation and the transition away from heavier fuels continues. — [Stuart Elliott](#)

## Norwegian gas exports to remain at current level for 'at least' a decade: Gassco

- Deliveries to remain above 100 Bcm/year: Viksund
- 10% hydrogen blend to be possible from 2025
- No technical barriers to flowing hydrogen blend

Norwegian gas exports to Europe are set to remain at current levels for "at least" the coming decade, a senior official from state-owned grid operator Gassco said Nov. 4.

Gassco senior vice president Randi Viksund also said the company was working to allow for the repurposing of the gas grid to be able to carry a gas-hydrogen blend as early as 2025.

"Norway will continue to be a reliable supplier of gas to Europe at the current level at least for the coming decade," Viksund said at the Flame conference in Amsterdam.

"We have delivered over 100 Bcm/year for more than 10 years and we foresee the same level for the next 10 years to come," she said.

Norway's gas exports have been running at close to capacity in recent weeks, with flows reaching almost 350 million cu m/d.

October saw Norway's supplies reach their highest level since January 2019 as producers looked to make the most of record high gas prices and some diverted gas usually reinjected for oil recovery for export to Europe.

European gas prices have risen strongly in the past few months, building on a sustained rally from the start of 2021.

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 Eur78.40/MWh Nov. 3, up 470% compared with a year ago.

## SOUTH AMERICA (\$/MMBtu), NOV 4

### DES Brazil Netforward

DES Brazil (Dec)	LEBMH01	26.020
DES Brazil vs NWE Fuel Oil Derivative	LAARM01	13.310
DES Brazil vs DES MED LNG	LASWM01	0.800
DES Brazil vs Dated Brent	LADBM01	11.902
DES Brazil vs Henry Hub (16:30 London)	LAHHM01	20.448
DES Brazil vs JKM (16:30 London)	LAJKM01	NA
DES Brazil vs NBP (16:30 London)	LABPM01	0.369

## NORTH AMERICAN FEEDGAS (\$/MMBtu), NOV 3

Daily average US LNG feedgas cost	ALNFG00	5.553
30-day moving average US LNG feedgas cost	ALNUS00	5.324
Daily average USGC LNG feedgas cost	ALNFH00	5.562
30-day moving average USGC LNG feedgas cost	ALNUG00	5.367

Export facility	Estimated feedgas cost	
Sabine Pass	ALNFA00	5.579
Corpus Christi	ALNFB00	5.541
Cove Point	ALNFC00	5.447
Cameron	ALNFD00	5.609
Freeport	ALNFE00	5.482
Elba Island	ALNFF00	5.746

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 4

Dec-21	0
Nov-21	0
Oct-21	0
Sep-21	0
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 4

NYMEX HH Singapore close	(Dec)	AAPSD00	NA
NYMEX HH Singapore close	(Jan)	AAPSE00	NA
ICE NBP Singapore close	(Dec)	AAPSF00	NA
ICE NBP Singapore close	(Jan)	AAPSG00	NA
NYMEX HH London close	(Dec 21)	AASYN00	5.572
NYMEX HH London close	(Jan 22)	AASYO00	5.688
ICE NBP London close	(Dec 21)	AASYR00	25.651
ICE NBP London close	(Jan 22)	AASYO00	26.017
NYMEX HH US close	(Dec 21)	NMNG001	5.716
NYMEX HH US close	(Jan 22)	NMNG002	5.826

## MARINE FUEL LNG BUNKER, NOV 4

	\$/MMBtu		\$/mt (Oil)		\$/mt (LNG)	
Singapore	LNBSG00	NA	LNBSM00	NA	LNBSF00	NA
	Eur/MWh		\$/mt (Oil)		\$/mt (LNG)	
Rotterdam	LNBRTO0	72.850	LNBRM00	952.240	LNBRF00	1282.736

MMBtu to \$/mt (oil) factor: 38.643; MWh to \$/mt (oil) factor: 11.322; MMBtu to \$/mt (LNG) factor: 52.000.

Viksund said all seasonal maintenance had been carried out so Norway's gas infrastructure was "ready for the winter season."

"Gas deliveries from Norway have never been higher and are continuing to rise," she said.

Norway has more than 70 producing fields, with 45 field development projects currently ongoing, she said.

Around 50% of the resources on the Norwegian Continental Shelf have already been produced, with 25% in existing fields and discoveries still to be produced. The remaining 25% is yet to be discovered, she said.

## Hydrogen blend

At the same time, Gassco is working to prepare the system for the future, Viksund said.

Gassco, she said, had established a process named future gas infrastructure. "This process will ensure that the infrastructure is fit for purpose in the short, medium and long term," she said.

"We see an increased interest in the utilization of the gas transport system, especially for the repurposing of gas pipelines for hydrogen and CO2," she said, adding that the company had yet to identify any technical "show-stoppers" for hydrogen.

"A hydrogen blend below 10% — this could be possible without major modifications to the pipeline system and could be done as early as 2025," she said.

Viksund added that the "large-scale" export of blue hydrogen from the NCS could be possible by 2030.

She also said work would be done in parallel with the development of a European hydrogen market.

## PLATTS WIM RLNG DAILY PRICES, NOV 4

	\$/MMBtu		Rupee/MMBtu	
Ex-Terminal				
Dahej	RLEDA00	NA	RLEIA00	NA
Hazira	RLEDB00	NA	RLEIB00	NA
Dabhol	RLEDC00	NA	RLEIC00	NA
Mundra	RLEDE00	NA	RLEEI00	NA
Kochi	RLEDD00	NA	RLEDI00	NA
Average	RLEDF00	NA	RLEIF00	NA
Location				
Ahmedabad	RLDDJ00	NA	RLDIJ00	NA
Morbi	RLDDK00	NA	RLDIK00	NA
Parvel	RLDDL00	NA	RLDIL00	NA
Dabhol	RLDDC00	NA	RLDIC00	NA
Vijaipur	RLDDM00	NA	RLDIM00	NA
Kota	RLDDN00	NA	RLDIN00	NA
Chhainsa	RLDDO00	NA	RLDIO00	NA
Jagdishpur	RLDDP00	NA	RLDIP00	NA
New Delhi	RLDDQ00	NA	RLDIQ00	NA
Koottanad	RLDDR00	NA	RLDIR00	NA
Kakinada	RLDDS00	NA	RLDIS00	NA
Average	RLDDT00	NA	RLDIT00	NA

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.

"We foresee a step-wise approach," she said. "When there is a market for hydrogen, we can blend the system up to 10%. So what we are working on now is to prepare for increasing the amount of hydrogen into the system and that should be done in parallel with how the market develops."

"Gassco's role will be to prepare and adjust the pipeline network so that we can meet the market [demand] when the market is there."

— *Stuart Elliott*

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LNG Daily is published daily by Platts, a division of S&P Global, registered office: 55 Water Street, 37th Floor, New York, N.Y. 10038.

Officers of the Corporation: Richard E. Thornburgh, Non-Executive Chairman; Doug Peterson, President and Chief Executive Officer; Ewout Steenbergen, Executive Vice President, Chief Financial Officer; Steve Kemps, Executive Vice President, General Counsel

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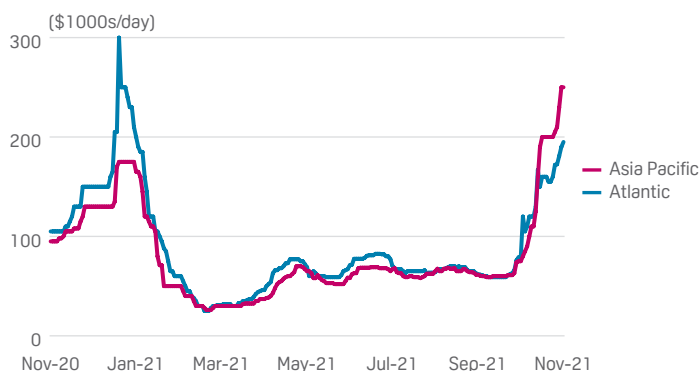
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## SHIPPING PRICES

## SHIPPING RATES, NOV 4

		\$/day
Asia Pacific day rate	AAAXT00	NA
Atlantic day rate	AASYC00	195,000
TCR Australia-Japan	ATCRA00	NA
TCR USG-NWE	ATCRB00	NA
TCR USG-Japan	ATCRC00	NA
		\$/MMBtu
PLF1 Middle East-Japan/Korea	AAUUA00	NA
PLF2 Middle East-NWE	AAUTE00	NA
PLF3 Trinidad-NWE	AAUC00	1.85

## SHIPPING RATES



Source: S&amp;P Global Platts

## SHIPPING CALCULATOR, NOV 4

	Australia-Japan/Korea	Middle East-India
Ship size (mt)	72980.77	72980.77
Trip length (days)	9	3
Carrier day rate (\$/day)	NA	NA
Day rate cost (\$/MMBtu)	NA	NA
Boil-off cost	NA	NA
Supplementary boil-off cost (\$/MMBtu)	NA	NA
Cost of voyage* (\$/MMBtu)	NA	NA

\*Includes port cost.

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## FREIGHT ROUTE COSTS, NOV 4 (\$/MMBtu)

## Asian discharge ports

	Japan/Korea	South China/Taiwan	West India
Middle East	AAUUA00	NA	AAUSH00
Australia (Dampier)	AAUSA00	NA	AAUSI00
Australia (Gladstone)	ACABA00	NA	ACABB00
Bontang	AOJKA00	NA	AOCTA00
Binulu	ABJKA00	NA	ABCTA00
Singapore	ASJKA00	NA	ASCTA00
Tanggah	ATJKA00	NA	ATCTA00
Trinidad via Suez	AAUSB00	NA	AAUSJ00
Trinidad via Panama	AAUXB00	NA	AAUZB00
Trinidad*	AAUC00	NA	AAUD00
Nigeria	AAUSC00	NA	AAUSK00
Algeria	AAUSD00	NA	AAUSL00
Belgium	AAUSE00	NA	AAUSM00
Peru	AAUSF00	NA	AAUSN00
Russia	AAUSG00	NA	AAUSO00
Spain	ACAAA00	NA	ACAAB00
Norway	ACAAH00	NA	ACAAI00
USGC*	LAUVA00	NA	LAUVB00
USGC via Panama	LAUVI00	NA	LAUVL00
USGC via Suez	LAUVJ00	NA	LAUVM00
USGC via Cape	LAUVK00	NA	LAUVN00

## EMEA discharge ports

	South West Europe	North West Europe	Kuwait/UAE
Middle East	AAUSX00	NA	AAUTE00
Australia (Dampier)	AAUSY00	NA	AAUTF00
Australia (Gladstone)	ACABD00	NA	ACABE00
Trinidad	AAUSZ00	1.88	AAUUC00
Nigeria	AAUTA00	2.11	AAUTG00
Algeria	AAUTB00	0.47	AAUTH00
Belgium	AAUTC00	0.81	AAUTM00
Peru	AAUTD00	NA	AAUTI00
Russia	AAUUB00	NA	AAUTJ00
Spain	ACAAK00	1.37	ACAAL00
Norway	ACAAK00	1.37	ACAAL00
Murmansk	AAUTX00	0.96	AAUTY00
USGC*	LAUVD00	2.48	LAUVE00
USGC via Suez			LAUVF00
USGC via Cape			LAUVG00

## Americas discharge ports

	US Atlantic Coast	Argentina	Brazil
Middle East	AAUTK00	NA	AAUTS00
Australia (Dampier)	AAUTL00	NA	AAUTT00
Australia (Gladstone)	ACABF00	NA	ACABH00
Trinidad	AAUTM00	0.99	AAUTU00
Nigeria	AAUTN00	2.43	AAUTV00
Algeria	AAUTO00	1.61	AAUTW00
Belgium	AAUTP00	1.46	AAUTX00
Peru	AAUTQ00	NA	AAUTY00
Russia	AAUTR00	NA	AAUTZ00
Spain	ACAAE00	1.34	ACAAG00
Norway	ACAAM00	1.62	ACAAN00
USGC*		LAUVG00	3.36

\*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](https://www.platts.com).



## Chinese buyers increase offtake commitments to Venture Global LNG in US

- At least 7.5 million mt/year to be supplied by two facilities
- Blitz of activity follows surge in prices in end-user markets

Offtake commitments that China's Sinopec and its trading arm, Unipetec, have made to buy LNG from Venture Global LNG have been increased to at least 7.5 million mt/year, according to statements the two companies issued Nov. 4.

When the purchases take effect, Venture Global would overtake Cheniere Energy as the biggest US supplier of LNG to Chinese counterparties on a term basis.

In letters that Venture Global sent to the US Department of Energy that were disclosed in October, the company said that Unipetec had agreed to buy 1 million mt/year of LNG for three years from the Calcasieu Pass liquefaction terminal in southwest Louisiana that Venture Global is currently building. The letters also said that Sinopec had agreed to buy 4 million mt/year of supply for 20 years from Venture Global's Plaquemines LNG facility that it has proposed to build south of New Orleans.

The statements both companies issued — their first public comments on the agreements — repeated the figures for Plaquemines LNG. For Calcasieu Pass, Sinopec said that Unipetec has agreed to buy 3.8 million mt/year of LNG, or 2.8 million mt/year more than previously disclosed. Venture Global's separate statement put the Unipetec-Calcasieu Pass figure at 3.5 million mt/year and said that the deal was for a shorter period than the Plaquemines LNG deal.

A Venture Global spokesperson did not respond to multiple messages seeking comment on the differing figures and on the reason for the staggered disclosures.

The transactions are part of a recent blitz of commercial activity between US exporters and Chinese buyers amid volatile Asian and European prices that remain high, though down from record levels seen in early October.

Cheniere said Oct. 11 that a subsidiary of China's ENN Natural Gas had signed a 13-year deal to buy 900,000 mt/year of LNG, starting in July 2022, from the US exporter. Cheniere previously signed two long-term contracts with PetroChina for a combined 1.2 million mt/year of LNG. Only a small portion is in effect, with shipments on the balance starting in 2023.

Venture Global's 10 million mt/year Calcasieu Pass facility is being built using modular trains that are smaller than the traditional liquefaction units used at other US facilities. The modular trains are being constructed in Italy and delivered to the site and plugged in one at a time.

Earlier in 2021, Venture Global said it plans a phased operational startup and that it could begin production and exports by the end of 2021. That would be a year earlier than originally anticipated. More recently, however, the operator has not provided an update on construction progress at Calcasieu Pass. Venture Global has previously said full operations at the export terminal were expected in mid-2022.

Venture Global also has long-term contracts to support Calcasieu Pass with Shell, Italy's Edison, Portugal's Galp, Britain's BP, Spain's Repsol and Poland's PGNiG. — [Harry Weber](#)

## Derivative losses weigh on Cheniere's financial results as LNG prices soar in Q3

- Company uses instruments to hedge commodity exposure
- Supply contracts with upstream gas producers in focus

About \$3.5 billion in pretax derivatives losses — mostly non-cash — were booked by Cheniere Energy during the third quarter as forward LNG prices in end-user markets soared, the biggest US exporter of the super-chilled power plant fuel said Nov. 4.

The company uses derivatives to hedge its exposure to commodity markets in which it has contracts to purchase or sell physical LNG. If prices rise or fall, Cheniere must account for the mark-to-market gain or loss between the derivative and physical positions.

The majority of Cheniere's derivatives loss in the July-September period was attributable to supply contracts it has with three upstream gas producers. Under the deals, the upstream producers will sell gas to Cheniere. The LNG produced from the gas will be marketed by Cheniere. In turn, Cheniere will pay the upstream producers an LNG-linked price for their gas, based on the S&P Global Platts JKM — the benchmark for spot LNG delivered to Northeast Asia — after deductions for fixed LNG shipping costs and a fixed liquefaction fee.

"This accounting treatment coupled with the significant volumes, long-term duration, and volatility and price basis for certain contracts, and most notably our IPM agreements will result in fluctuations in fair market value from period to period," Chief Financial Officer Zach Davis said during an investor conference call after the July-September financial results were released.

According to Cheniere, the significant appreciation in forward international LNG commodity curves caused it to incur the derivatives losses. In the most recent quarter, about \$400 million of the derivatives loss was realized. The rest of the booked derivatives loss was non-cash, according to Cheniere.

Davis said that operationally Cheniere tries to eliminate commodity risk by matching its natural gas purchases and LNG sales on the same pricing index. Because its long-term LNG sale and purchase agreements do not currently qualify for mark-to-market accounting, the fair market value impact of only one side of the transaction is recognized on Cheniere's financial statements until the sale of LNG occurs.

Company officials did not disclose Cheniere's exact positions in the derivatives market. In general, according to people familiar with Cheniere's activity, if end-user prices drop sharply in the future, Cheniere would expect to book a substantial mark-to-market gain on its derivatives; on the flip side, however, it would earn less for the underlying physical LNG when it is sold.

The JKM spot Asian LNG price rose to a record high of \$56.33/MMBtu Oct. 6, while the Dutch TTF day-ahead contract in Europe reached a high of \$39.50/MMBtu Oct. 5. Prices have moderated since then, though they remain high.

"I want to highlight that the impact is substantially all noncash and tied to the significant volatility we have experienced in the global LNG market, which has otherwise served as a significant tailwind for our businesses from both the financial and commercial perspective," Davis said. "The tailwinds are reflected in our increased guidance for 2021 and the 2022 guidance we are rolling out this morning above our normalized run rate ranges."

## By the numbers

For the quarter ended Sept. 30, Cheniere reported a net loss of \$1.1 billion on revenue of \$3.2 billion, versus a year-ago loss of \$463 million on revenue of \$1.5 billion.

The company is currently commissioning a sixth liquefaction train at its Sabine Pass terminal in Louisiana.

Next year, Cheniere expects to sanction an up to 10 million mt/year midscale expansion at the site of its three-train Corpus Christi Liquefaction facility in Texas. — [Harry Weber](#)

## Freeport LNG utilization falls sharply as pre-treatment train undergoes maintenance

- Unspecified incident occurred at Texas facility Oct. 31
- Power trip involving liquefaction unit reported same day

One of Freeport LNG's pre-treatment trains will remain down for about a week as it undergoes maintenance following an unspecified incident that occurred Oct. 31, the operator said in an email to S&P Global Platts on Nov. 4.

That incident occurred the same day as a separate power trip involving a compressor that temporarily knocked liquefaction Train 2 offline.

Feedgas demand at the Texas export terminal was down by almost 1 Bcf/d on Nov. 4 compared with levels seen before the disruptions.

"The cause of the incident is under investigation," Freeport LNG said, referring to what happened at the pre-treatment facility, which is on the mainland and separated from the liquefaction units that are on a small island nearby. "The duration of the train's outage is anticipated to be approximately seven days, pending further evaluation."

After the separate power trip on Oct. 31, the operator was able to restart liquefaction Train 2 after a cooldown period, according to an air emissions notice to state regulators. Freeport LNG is the only US liquefaction facility that uses electric motors exclusively instead of natural gas turbines to drive the liquefaction compressors on its trains.

Feedgas deliveries to Freeport LNG fell in the days after the two disruptions. On Nov. 4, based on nominations for the morning cycle, gas deliveries to the terminal stood at about 1.1 Bcf/d, compared with about 2 Bcf/d on Oct. 30, the day before the disruptions, Platts Analytics data showed.

At the 15 million mt/year capacity Freeport LNG terminal, the operator 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. — [Harry Weber](#)

## Endesa expects amendments to Spanish CO2 law similar to gas exemptions

- Exemptions expected for fixed price contracts
- Price floor regulation would need to be Eur60/MWh
- Power, gas margins narrow during first nine months

A proposed Spanish law to charge a "clawback" on the bullish impact of CO2 prices on the wholesale market is likely to be amended and

result in a series of exemptions, similar to those approved for the gas clawback, Spanish utility Endesa said Nov. 3.

Endesa expects the CO2 legislation to undergo "similar treatment" to a recently-amended gas clawback law, which obliges non-emitting generators to pay back around 90% of wholesale market "windfall income" when gas prices are over Eur20/MWh.

The gas clawback law was amended by decree Oct. 27 to remove its application to any forward contracts agreed before its Sept. 16 approval, and to make it inapplicable to fixed price bilateral contracts.

According to Endesa calculations, roughly half of Spain's 243 TWh mainland production is hedged at forward prices.

So far, five political parties have tabled amendments to the proposed CO2 clawback law with similar exemptions, Endesa CEO Luca Passa said.

One of the modifications might see a floor price applied to the wholesale market, he said.

The CO2 clawback decree, submitted to parliament in August, charges non-emitting plants built before 2005 a sliding-scale levy based on the CO2 price, potentially affecting around 15 GW of hydro plants, all 7.4 GW of nuclear and 1.6 GW of older wind farms.

Endesa estimates it needs a price floor of around Eur57/MWh to Eur58/MWh to make its 3.3 GW nuclear fleet viable, accounting for future investment, taxes and a reasonable rate of return, whereas its 4.7 GW hydro fleet would need a price of Eur60/MWh.

## Pool changes

The levels align with a rate that could be applied to regulated market customers under new legislation that could be approved as soon as Nov. 9, according to a Nov. 3 report in Spanish financial daily *el Economista*.

According to the report the government is looking at removing renewables, cogeneration and energy from waste from Spain's daily wholesale power pool market as a temporary measure, directly linking the regulated tariff to their price while offering tier output directly to industrial users.

The Ecological Transition Ministry confirmed Nov. 4 it had been in meetings with the renewable energy, industrial and other sectors to work out additional solutions to current high energy prices, without adding detail.

According to the *Economista* report, renewables, cogeneration and energy from waste could be removed from the pool for the whole of 2022, equivalent to around 90 TWh per year.

This could bring the reference price for regulated consumers to between Eur57/MWh to Eur60/MWh, or around half of Cal 2022's current level, it said.

A planned auction of baseload nuclear and hydro capacity, which the government proposed in September, would be pushed back to 2023 under the plan, it said.

## Forward hedges

One reason for the postponement is because Spain's two largest producers, Endesa and Iberdrola have both sold forward nearly their entire 2022 production.

Iberdrola said Oct. 27 it had sold 96% of its forecast generation for Spain and the UK for 2022, with hedged prices unchanged from the

end of Q2 at between Eur75/MWh and Eur78/MWh.

Endesa said Nov. 3 it had sold 100% of its 2021 output at Eur71/MWh, 88% of its 2022 output at Eur76/MWh (with 4.4 TWh left to place) and around 30% of its 2023 production at a slightly higher rate than that.

In the gas market, Endesa boosted volume sold by 20% year on year to 58.3 TWh in the first nine months but saw its unitary margin sink 72% year on year to Eur1.10/MWh, scoring a negative margin of Eur0.80/MWh when excluding the mark to market effect.

In the renewable business, the company upped its long-term pipeline by 22 GW more to 61 GW worldwide, expecting to install 700 MW in 2021.

In Spain, it faced potentially having to compete in a first-of-kind competitive tender to retain the 1.2 GW grid connection from its closed Teruel power plant.

Spain's Ecological Transition ministry announced the start of the two-month process Nov. 3, with promoters required to offer Eur120,000 guarantee per MW bid. — [Gianluca Baratti](#)

## Platts LNG Bunker Weekly Commentary

### Asia Pacific

- The Singapore LNG bunker fuel price was assessed \$5.171/MMBtu lower week on week at \$27.652/MMBtu on Nov. 3 for the December delivery month, with a 50-cent/MMBtu discount to the JKM. The JKM for January delivery was assessed at \$28.152/MMBtu on Nov. 3, on tepid end-user demand in the Asia-Pacific region despite production uncertainties.
- GEFO's newbuilt product tanker, MT Tosca, conducted its first LNG ship-to-ship operation at the anchorage area of Pengerang in Malaysia on Oct. 22, according to an Avenir LNG company statement on Oct. 26. Avenir Advantage, operated by Petronas, preformed the 7500 cu m bunkering operation. MT Tosca is on its maiden voyage from Shanghai to Europe and currently travelling through the Gulf of Aden, on approach to the Suez Canal, according to data from Platts cFlow trade-flow analytics software.

### Atlantic

- The Rotterdam LNG bunker fuel price was assessed at Eur 78.975/MWh on Nov. 3, creating a Eur 1.266/MWh discount to Eur 80.241/MWh for delivered cargoes into Northwest Europe. S&P Global Platts assessed the LNG price at \$27.260/MMBtu for cargoes delivered into Northwest Europe on Nov. 3. Atlantic LNG prices have been supported by gains in downstream Eurogas hubs. This comes as Russia failed to book additional gas flow capacity for second-quarter 2022 in recent auctions. Additionally, zero gas flows have been nominated West bound through the Mallnow gas compressor since Oct. 30. However, additional gas flowed East from Germany to Poland, exacerbating supply concerns in Western Europe.
- High LNG prices continue to incentivize dual-powered vessel owners to switch fuels. Platts assessed the Northwest Europe LSFO price at \$505.250/mt on Nov. 3. This is a \$530.45/mt discount to the LNG bunker oil-equivalent price, assessed at \$1,035.70/mt on Nov. 3.
- Finnish state-owned energy company Gasum has expanded its Northwest European LNG bunkers supply with a new vessel located

in the region, according to a company statement on Nov. 1. The vessel, named Kairos, previously operated within the Northern and Baltic seas providing LNG bunkers to marine vessels traveling in Emission Controlled Areas. The vessel has a transfer rate of 1,250 cu m/hour, and is one of three LNG bunkering vessels operated by the energy company.

- Gasum supplied liquefied biogas, or LBG, to Lundin Energy's supply vessel Island Crusader, according to a company statement Oct. 29. The vessel will predominantly operate in the North and Baltic seas, both of which are established Emission Controlled Areas. LBG is produced from agriculture organic waste. The organic waste is treated in LBG plants where excess methane can be liquefied and used for fuel. Across the product lifecycle, from farm-to-tank, LBG has the potential of reducing CO2 emissions by up to 200%, according to a European Parliament study. — [Zack Smith](#)

## HYDROGEN

### COP26: UAE targets 25% of global low-carbon hydrogen market by 2030

- Targets exports with hydrogen roadmap launch
- Eyes key markets in Japan, S Korea, Germany
- Aims for over 500,000 mt/year hydrogen production

The UAE is targeting a 25% global market share of low-carbon hydrogen by 2030 with the launch of its "hydrogen leadership roadmap" at the UN Climate Change Conference.

The roadmap sets out support for domestic, low-carbon industries and aims to establish the country as a leading hydrogen exporter, the UAE state news agency said Nov. 4.

The UAE already has seven hydrogen projects underway, and is targeting a large share of key export markets, including Japan, South Korea, Germany and India, as well as other markets it identifies as "high potential" in Europe and East Asia.

The Abu Dhabi National Oil Co., ADNOC, produces over 300,000 mt/year of hydrogen, and plans to increase this to 500,000 mt/year.

S&P Global Platts hydrogen price assessments show northwest European and Japanese markets significantly higher than potential export markets such as Australia, which along with the UAE, is one of several lower-cost renewable hydrogen production sources well placed to develop future exports.

The spread between proton exchange membrane electrolysis assessments (including capex) Nov. 3 showed European prices (Netherlands, \$14.94/kg) almost three times those in Australia (New South Wales, \$4.71/kg). The comparable assessment for Japan was \$9.30/kg.

"The UAE is well positioned to be a leader in low-carbon hydrogen with natural competitive advantages for both blue and green hydrogen," Minister of Energy and Infrastructure, Suhail bin Mohammed al Mazrouei, said in a statement.

Blue hydrogen is produced from fossil fuel sources in conjunction with carbon capture and storage, while green hydrogen uses renewables to power electrolysis of water.

The UAE has abundant hydrocarbons, as well as existing large-scale hydrogen and ammonia production facilities and access to competitive solar PV energy and large-scale CCS, the statement said.

ADNOC has already sold four test cargoes of blue ammonia, the Emirates News Agency said.

“Green hydrogen production remains in its infancy, requiring an international collaboration to accelerate its development,” al Mazrouei added. “Green hydrogen is envisaged to play a significant role in UAE’s domestic strategy to meet the UAE 2050 Net-Zero goals and which will also assist globally by exporting hydrogen.”

The UAE was the first Middle Eastern country to commit to a net-zero emissions target, when it made the announcement Oct. 7, with AED 600 billion (\$163 billion) in planned investment for renewables.

The country has one of the highest per capita energy consumption rates in the world.

The UAE’s roadmap also aims to develop opportunities for hydrogen in low-carbon steel production and sustainable kerosene, as well as in other domestic industries, the ENA said.

The country will support the development of its hydrogen business with a “clear” regulatory framework, technology developments and green financing, it said. — [James Burgess](#)

## South Korea cuts price of domestic natural gas for hydrogen production by 25%

- Price cut effective until October 2024
- Will lead to an earlier opening of a ‘hydrogen society’: ministry

South Korea has cut the domestic price of natural gas used to make hydrogen by 25% to help lower hydrogen production costs in a bid to boost hydrogen consumption and LNG demand, the energy ministry said Nov. 4.

“The government has lowered natural gas prices used to make hydrogen for vehicles by 25% since this month,” a Ministry of Trade, Industry and Energy official said.

“The price cut would be effective for three years until October 2024 when the government will consider whether to extend it, given the country’s production of green hydrogen and blue hydrogen,” he added.

Hydrogen derived from natural gas through steam methane reforming is called “grey hydrogen” because it is based on fossil fuel, while green hydrogen is made by using renewable energy to split water through electrolysis that produces an emissions-free product. Blue hydrogen refers to hydrogen produced from fossil fuel in a process that captures carbon dioxide emissions.

“The three-year price cut of natural gas would lower the country’s hydrogen production costs, which would lead to an earlier opening of a ‘hydrogen society’ based on green hydrogen production and consumption,” the ministry official said.

South Korea has been pushing for a “hydrogen society” that uses hydrogen as a major energy source for transportation and power generation in the country so as to achieve carbon neutrality by 2050.

Under its hydrogen energy vision unveiled in October, the country aims to produce 1 million mt/year of hydrogen by 2030, comprising 250,000 mt/year of green hydrogen and 750,000 mt of blue hydrogen,

before ramping up to 5 million mt/year by 2050, comprising 3 million mt/year of green hydrogen and 2 million mt/year of blue hydrogen.

The country is also pushing to raise hydrogen demand to 3.9 million mt/year in 2030 from 220,000 mt currently, then to 27 million mt/year in 2050.

South Korea also targets having 850,000 hydrogen-powered vehicles by 2030, up from 12,000 currently, and to install 660 hydrogen charging stations by 2030, up from the current 70.

Under the vision, the country’s businesses such as Hyundai Motor Group, SK Group, GS Group POSCO Group and Hyosung Group will make a combined Won 43 trillion (W36.4 billion) available by 2030 for their hydrogen projects, according to the ministry.

President Moon Jae-in has promised to turn his country into “a global leader in transitioning from a fossil fuel-based economy to a hydrogen-based one.” — [Charles Lee](#)

## Air Liquide, Eni partner on hydrogen for road transport in Italy

- To invest in hydrogen infrastructure for transport
- Aim for hydrogen refueling station network
- Eni’s first Italian hydrogen fueling station in 2022

Industrial gases company Air Liquide and energy group Eni will jointly develop hydrogen infrastructure for transport in Italy, the companies said in a statement Nov. 4.

The companies have signed a letter of intent to invest in the infrastructure required to expand hydrogen-powered mobility in the country, they said.

The partners will conduct a feasibility study to develop the low-carbon and renewable hydrogen supply chain for fuel cell electric vehicles, and seek to identify potential locations for hydrogen refueling stations.

Air Liquide will provide expertise across the hydrogen value chain, while Eni will contribute its commercial and retail fueling experience, and also has a network of service stations which could be used for the project.

“Decarbonizing the transport sector is a major challenge of the energy transition,” Air Liquide Senior Vice President Pascal Vinet said in the statement. “Implementing a hydrogen refueling station network is a critical milestone along this journey.”

Eni’s general manager for Energy Evolution, Giuseppe Ricci, said the company would open a first hydrogen refueling station in Italy at Mestre at the start of 2022, followed by a second in Milan.

S&P Global Platts assessed European hydrogen pump prices at Eur9.50/kg (\$11.01/kg) Nov. 1 (Germany). — [James Burgess](#)

## Japan’s MOL aims to commission ‘large’ ammonia-fueled ammonia tanker in 2026

- Japan sees great potential in ammonia as power generation fuel
- Japan’s fuel ammonia demand estimated at 3 million mt/year in 2030
- MOL aims for 110 net-zero emission ocean-going vessels by 2035

Japan’s Mitsui O.S.K. Lines, or MOL, said Nov. 4 it aims to commission a “large” ammonia-fueled ammonia tanker in 2026 as part of its efforts



to deploy net-zero emission ocean liners in the 2020s.

MOL will jointly develop the large ammonia-fueled ammonia tanker with Japan's Namura Shipbuilding and Mitsubishi Shipbuilding on a scale that would be accepted by the power generation sector, an MOL spokesperson said, declining to specify the size of the prospective tanker.

The move comes at a time when Japan sees great potential in fuel ammonia as a CO<sub>2</sub> zero-emission fuel as the country aims to cut its greenhouse gas emissions by 46% by fiscal year 2030-31 (April-March) from the FY 2013-14 level and achieve carbon neutrality by 2050.

Japan currently estimates the fuel ammonia demand for power generation will be 3 million mt/year in 2030 and expects it to grow to 30 million mt/year in 2050, equivalent to 1.5 times the current international trade of ammonia as a fertilizer, according to the Ministry of Economy, Trade and Industry.

### Going net-zero

MOL, which plans to deliver the first pure battery coastal ship in 2022, now plans to deploy net-zero emission ocean-going vessels in the late 2020s and boost the number of ocean liners fueled by

synthetic methane, ammonia, hydrogen and biodiesel to about 110 by 2035, the company said.

By 2030, MOL plans to introduce around 90 LNG-fueled ships, excluding LNG carriers.

MOL's 2035 target reduction by 45% in GHG emission intensity compares against the 2019 level. In fiscal 2019-20, MOL's Scope 1, 2 and 3 CO<sub>2</sub> emissions totaled 14.889 million mt with a GHG emission intensity of 10.86 g CO<sub>2</sub>e/ton-mile.

MOL has earmarked about Yen 200 billion (\$1.8 billion) in the three years from fiscal 2021-22 (April-March) to spend on decarbonization and low carbon businesses, including on LNG carriers, under its first budget focused on environmental strategies as it accelerates efforts toward carbon neutrality.

MOL, which has the world's largest LNG carrier fleet with 98 tankers — as at March 31 — sees growth in LNG as a low-carbon fuel for transport, and has been involved in LNG value chains through its power ship and floating storage regasification unit, or FSRU, businesses. MOL's LNG carrier fleet is due to expand further to 100 tankers by the end of March 2022. — [Takeo Kumagai](#)

## 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 \$/mtCO<sub>2</sub>e 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
- Australia Carbon Neutral Hydrogen \$/kg MAvg
- Australia Carbon Neutral Hydrogen \$/MMBtu
- Australia Carbon Neutral Hydrogen \$/MMBtu MAvg
- California Carbon Neutral Hydrogen \$/kg
- California Carbon Neutral Hydrogen \$/kg MAvg
- California Carbon Neutral Hydrogen \$/MMBtu
- California Carbon Neutral Hydrogen \$/MMBtu MAvg
- Far East Asia Carbon Neutral Hydrogen Yen/kg
- Far East Asia Carbon Neutral Hydrogen Yen/kg MAvg

- Far East Asia Carbon Neutral Hydrogen Yen/MMBtu
- Far East Asia Carbon Neutral Hydrogen Yen/MMBtu MAvg
- Far East Asia Carbon Neutral Hydrogen \$/kg
- Far East Asia Carbon Neutral Hydrogen \$/kg MAvg
- Far East Asia Carbon Neutral Hydrogen \$/MMBtu
- Far East Asia Carbon Neutral Hydrogen \$/MMBtu MAvg
- Middle East Carbon Neutral Hydrogen \$/kg
- Middle East Carbon Neutral Hydrogen \$/kg MAvg
- Middle East Carbon Neutral Hydrogen \$/MMBtu
- Middle East Carbon Neutral Hydrogen \$/MMBtu MAvg
- NW Europe Carbon Neutral Hydrogen Eur/kg
- NW Europe Carbon Neutral Hydrogen Eur/kg MAvg
- NW Europe Carbon Neutral Hydrogen Eur/MMBtu
- NW Europe Carbon Neutral Hydrogen Eur/MMBtu MAvg
- NW Europe Carbon Neutral Hydrogen \$/kg
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- NW Europe Carbon Neutral Hydrogen \$/MMBtu
- NW Europe Carbon Neutral Hydrogen \$/MMBtu MAvg
- USGC Carbon Neutral Hydrogen \$/kg
- USGC Carbon Neutral Hydrogen \$/kg MAvg
- USGC Carbon Neutral Hydrogen \$/MMBtu
- USGC Carbon Neutral Hydrogen \$/MMBtu MAvg

Please send all questions and comments to

[hydrogenassessments@spglobal.com](mailto:hydrogenassessments@spglobal.com) and [pricegroup@spglobal.com](mailto: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 Limited

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 Vercor 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](mailto:oilgroup@spglobal.com) and [PriceGroups@spglobal.com](mailto:PriceGroups@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 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 [lngeditorialteam@spglobal.com](mailto:lngeditorialteam@spglobal.com) and [pricegroup@spglobal.com](mailto:pricegroup@spglobal.com).

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.

### Deepavali publishing schedule for S&P Global Platts Asia LNG

The S&P Global Platts Singapore office will be closed on Thursday, Nov. 4 for the Deepavali holiday, and there will be no daily LNG assessments published from Singapore on that day.

Additionally, Platts in Asia will close its Market on Close assessment process early on Wednesday, Nov. 3, and all assessments will be on basis 12:30 pm Singapore time (0430 GMT).

Normal Singapore publishing schedule will resume on Friday, Nov. 5.

For full details of Platts' publishing schedule and services affected, refer to <http://www.platts.com/HolidayHome>. For queries, please contact [support@spglobal.com](mailto:support@spglobal.com).

## HYDROGEN &amp; CARBON

## NORTH AMERICA HYDROGEN ASSESSMENTS, NOVEMBER 3\*

Production Pathway	Excluding Capex		Including Capex	
	\$/kg	Change	\$/kg	Change
<b>Alberta (C\$/kg)</b>				
SMR w/o CCS	0.8589	-0.0311	1.5787	-0.0303
Alkaline Electrolysis	3.8400	-0.0565	5.0287	-0.0552
PEM Electrolysis	4.4358	-0.0653	6.5655	-0.0630
<b>Appalachia</b>				
SMR w/o CCS	0.8451	+0.0401	1.4405	+0.0401
Alkaline Electrolysis	3.8761	+0.3652	4.7554	+0.3651
PEM Electrolysis	4.4775	+0.4218	6.0530	+0.4217
<b>Gulf Coast</b>				
SMR w/o CCS	0.8512	+0.0268	1.3552	+0.0268
Alkaline Electrolysis	2.8039	+0.1860	3.6363	+0.1860
PEM Electrolysis	3.2390	+0.2149	4.7304	+0.2150
<b>Midcontinent</b>				
SMR w/o CCS	0.8396	+0.0289	1.3709	+0.0289
Alkaline Electrolysis	3.6834	+0.4947	4.5373	+0.4947
PEM Electrolysis	4.2549	+0.5714	5.7847	+0.5714
<b>Northeast</b>				
SMR w/o CCS	0.8920	+0.0421	1.5267	+0.0422
Alkaline Electrolysis	2.9084	+0.0249	3.8130	+0.0249
PEM Electrolysis	3.3597	+0.0288	4.9805	+0.0288
<b>Northern California</b>				
SMR w/o CCS	0.9742	-0.0814	1.7045	-0.0814
Alkaline Electrolysis	3.2891	-0.0512	4.2753	-0.0513
PEM Electrolysis	3.7994	-0.0592	5.5665	-0.0591
<b>Northwest</b>				
SMR w/o CCS	0.8226	+0.0116	1.4052	+0.0116
Alkaline Electrolysis	2.1026	-0.6233	2.9987	-0.6234
PEM Electrolysis	2.4288	-0.7201	4.0344	-0.7201
<b>Rockies</b>				
SMR w/o CCS	0.8264	+0.0047	1.3846	+0.0048
Alkaline Electrolysis	2.3062	-0.8613	3.1728	-0.8613
PEM Electrolysis	2.6640	-0.9950	4.2167	-0.9949
<b>Southeast</b>				
SMR w/o CCS	0.9173	+0.0531	1.4369	+0.0530
Alkaline Electrolysis	2.8898	+0.1866	3.7444	+0.1865
PEM Electrolysis	3.3381	+0.2155	4.8694	+0.2155
<b>Southern California</b>				
SMR w/o CCS	0.9035	-0.0222	1.6043	-0.0222
Alkaline Electrolysis	3.1922	-0.0460	4.1581	-0.0460
PEM Electrolysis	3.6875	-0.0531	5.4181	-0.0531
<b>Upper Midwest</b>				
SMR w/o CCS	0.8709	+0.0290	1.4394	+0.0291
Alkaline Electrolysis	3.6141	+0.0549	4.5204	+0.0549
PEM Electrolysis	4.1748	+0.0634	5.7987	+0.0634

\*Assessed previous day

## JAPAN HYDROGEN ASSESSMENTS, NOVEMBER 3

Production Pathway	Excluding Capex		Including Capex	
	Yen/kg	Change	Yen/kg	Change
SMR w/o CCS	500.2211	+30.3966	586.2695	+30.5327
Alkaline Electrolysis	695.4864	-274.5994	837.5869	-274.3747
PEM Electrolysis	803.4015	-317.2096	1058.0035	-316.8069

## 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 4

	\$/mtCO <sub>2</sub> e	Change	Eur/mtCO <sub>2</sub> e	Change
Platts CEC	7.650	+0.200	4.920	-1.510

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.

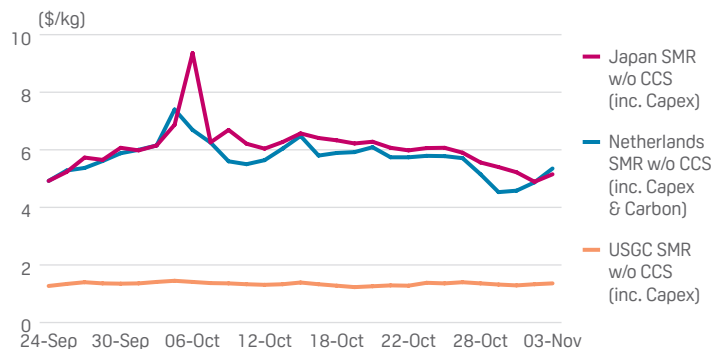
## UK HYDROGEN ASSESSMENTS, NOVEMBER 4

Production Pathway	GBP/kg	Change	GBP/KWh	Change
ATR w CCS	3.9036	-0.2594	0.1171	-0.0078
ATR w CCS (inc. Capex & Carbon)	4.2228	-0.2594	0.1267	-0.0078
Alkaline Electrolysis	10.1345	-0.5037	0.3041	-0.0151
Alkaline Electrolysis (inc. Capex)	10.7511	-0.4962	0.3226	-0.0149
PEM Electrolysis	11.7044	-0.5819	0.3512	-0.0174
PEM Electrolysis (inc. Capex)	12.8091	-0.5684	0.3843	-0.0171

## NETHERLANDS HYDROGEN ASSESSMENTS, NOVEMBER 4

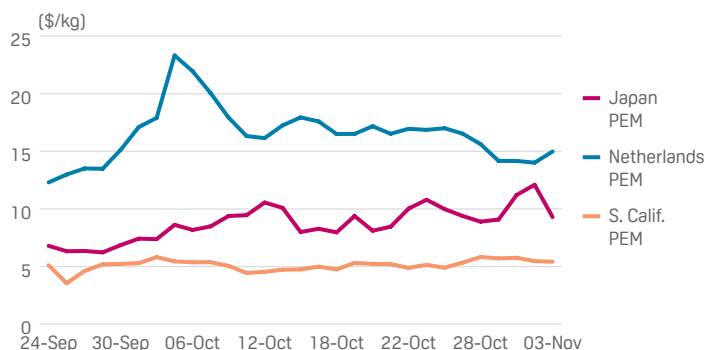
Production Pathway	Eur/kg	Change	Eur/KWh	Change
SMR w/o CCS	3.3806	-0.2722	0.1014	-0.0082
SMR w/o CCS (inc. Capex)	3.8172	-0.2708	0.1145	-0.0082
SMR w/o CCS (inc. Carbon)	3.9153	-0.2712	0.1175	-0.0081
SMR w/o CCS (inc. Capex & Carbon)	4.3519	-0.2697	0.1306	-0.0081
SMR w CCS	4.2448	-0.3166	0.1274	-0.0095
SMR w CCS (inc. Capex)	4.9518	-0.3143	0.1486	-0.0094
SMR w CCS (inc. Carbon)	4.2983	-0.3165	0.1290	-0.0095
SMR w CCS (inc. Capex & Carbon)	5.0052	-0.3142	0.1502	-0.0094
Alkaline Electrolysis	9.7808	-0.3096	0.2935	-0.0092
Alkaline Electrolysis (inc. Capex)	10.5018	-0.3072	0.3151	-0.0092
PEM Electrolysis	11.2957	-0.3576	0.3389	-0.0107
PEM Electrolysis (inc. Capex)	12.5875	-0.3534	0.3777	-0.0106

## SMR w/o CCS COST COMPARISONS



Source: S&amp;P Global Platts

## PEM ELECTROLYSIS COST COMPARISONS



Source: S&amp;P Global Platts