

# Specifications guide

## Liquefied natural gas assessments and netbacks

Latest update: November 2019

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## DEFINITIONS OF THE TRADING LOCATIONS FOR WHICH PLATTS PUBLISHES DAILY INDEXES OR ASSESSMENTS

The following contains the primary specifications and methodologies for Platts LNG assessments throughout the world. All the assessments listed here employ Platts Assessments Methodology, as published at [https://www.spglobal.com/platts/plattscontent/\\_assets/\\_files/en/our-methodology/methodology-specifications/platts-assessments-methodology-guide.pdf](https://www.spglobal.com/platts/plattscontent/_assets/_files/en/our-methodology/methodology-specifications/platts-assessments-methodology-guide.pdf).

These guides are designed to give Platts subscribers as much information as possible about a wide range of methodology and specification questions.

This guide is current at the time of publication. Platts may issue further updates and enhancements to this guide and will announce these to subscribers through its usual publications of record. Such updates will be included in the next version of this guide. Platts editorial staff and managers are available to provide guidance when assessment issues require clarification.

Unless otherwise stated, standard specifications for all Platts LNG assessments are as follows:

**Frequency:** Assessments are published each business day and reflect market values prevailing at the close of markets in the respective region (Singapore/UK/US). On certain days ahead of a public holiday, such as Christmas Eve or New Year's Eve, Platts may assess the market earlier than normal. This would typically be 12:30 pm in Singapore and 12:00 pm in London.

**Unit:** All prices are quoted in US dollars per million British Thermal Units (\$/MMBtu) to three decimal places. ICE NBP futures in pence per therm are converted to \$/MMBtu using a USD/GBP exchange rate assessed at market close. Prices at European gas hubs in Euros per megawatt hour are converted to \$/MMBtu using a USD/EUR exchange rate assessed at market close.

**Quality:** Price assessments reflect Btu/scf calorific value in a range; cargoes outside of this range are considered and may be normalized to within the range.

**Vessel size:** Standard cargoes of 135,000-175,000 cu m. Larger Qatari Q-Flex (210,000 cu m) and Q-Max (260,000 cu m) carriers are not be assessed directly, though they may be normalized to standard volume.

**Timing:** Platts assesses LNG markets in half-month cycles forward.

For instance, on June 1, Platts will assess Delivered Ex-Ship (DES) cargoes for delivery in H1 July, H2 July, H1 August and H2 August in the case of JKM.

Marker assessments represent the average of the two half-month cycles which comprise the first full month of delivery or loading. For instance, on June 4, Platts JKM™, (Jul) represents the average of price assessments for cargoes for delivery in H1 July and H2 July.

DES markers roll over on the 16th of each calendar month and FOB markers roll on the 1st unless that day is not a business day, in which case the marker rolls over on the next business day. For instance, if June 16 is a business day, Platts JKM™, (Aug) is the average of price assessments of cargoes for delivery in H1 August and H2 August.

**Netback assessments:** For all netback and netforward assessments, Platts publishes a single value reflecting the implied price of a cargo at market close using the freight cost formulae which employ standard Platts freight route costs assumptions and a relevant journey time to a base price point. More details are provided in the relevant netback sections and the Shipping Assessments section below.

**Commissioning cargoes:** S&P Global Platts LNG price assessments reflect cargoes that are widely merchantable and do not reflect the commissioning cargoes from a new LNG project site.

This applies to bids, offers and trades published during the Platts LNG Market on Close (MOC) assessment process, meaning that neither base loading port stated in offers, nor loading port nominations for trades reported via the MOC process should be against LNG liquefaction sites yet to load an LNG cargo, or whose cargo specifications are still unknown to the wider market.

**PACIFIC BASIN SPOT LNG ASSESSMENTS**

Assessment	Symbol	Mavg	Wavg	Rolling Mavg	Contract Type	Contract Basis	Location	Delivery Period	min. size	max. size	Currency	UOM
LNG Japan/Korea Spot Crg DES	AAOVQ00	AAOVQ03			Spot	DES	Japan-Korea	3rd & 4th or 4th & 5th Half-Month forward	135,000	175,000	USD	MMBtu
LNG Japan/Korea DES 1 Half-Month	AAPSU00	AAPSU03			Spot	DES	Japan-Korea	3rd Half-Month forward	135,000	175,000	USD	MMBtu
LNG Japan/Korea DES 2 Half-Month	AAPSV00	AAPSV03			Spot	DES	Japan-Korea	4th Half-Month forward	135,000	175,000	USD	MMBtu
LNG Japan/Korea DES 3 Half-Month	AAPSW00	AAPSW03			Spot	DES	Japan-Korea	5th Half-Month forward	135,000	175,000	USD	MMBtu
LNG Japan/Korea DES 4 Half-Month	AAPXA00	AAPXA03			Spot	DES	Japan-Korea	6th Half-Month forward	135,000	175,000	USD	MMBtu
LNG Japan/Korea vs Henry Hub Spore 16:30	AAPRZ00				Differential			Front month			USD	MMBtu
LNG Japan/Korea vs UK NBP Spore 16:30	AAPSA00				Differential			Front month			USD	MMBtu
LNG Japan/Korea vs ADB Spore 16:30	AAPSB00				Differential			Front month			USD	MMBtu
LNG Freight Japan/Korea Vs Taiwan/China 16:30	AAPSC00				Differential			Front month			USD	MMBtu
HHub 1-Mo Spore 16:30 Hrs \$	AAPSD00	AAPSD03			Futures		Henry Hub	M+1			USD	MMBtu
HHub 2-Mo Spore 16:30 Hrs \$	AAPSE00	AAPSE03			Futures		Henry Hub	M+2			USD	MMBtu
NBP 1-Mo Spore 16:30 Hrs \$	AAPSF00	AAPSF03			Futures		NBP	M+1			USD	MMBtu
NBP 2-Mo Spore 16:30 Hrs \$	AAPSG00	AAPSG03			Futures		NBP	M+2			USD	MMBtu
NBP 1-Mo Spore 16:30 Hrs p/th	AAPSH00	AAPSH03			Futures		NBP	M+1			GBC	therm
NBP 2-Mo Spore 16:30 Hrs p/th	AAPSI00	AAPSI03			Futures		NBP	M+2			GBC	therm
LNG DES JKM Spot vs Dutch TTF Mo01 \$/MMBtu	LNTFJ00	LNTFJ03			Differential		TTF	vs equivalent TTF			USD	MMBtu
LNG FOB Mid East 25-45 Days	AARXQ00	AARXQ03			Netback	FOB	Middle east	25-45 days	135,000	175,000	USD	MMBtu
LNG FOB Australia NetBack	AARXR00	AARXR03			Netback	FOB	Australia	JKM minus 8 days	135,000	175,000	USD	MMBtu
LNG FOB Singapore	AARXU00				Netback	FOB	Singapore	JKM minus 7 days	135,000	175,000	USD	MMBtu
LNG DES West India	AARXS00	AARXS03			Spot	DES	West India	3rd & 4th or 4th & 5th Half-Month forward	135,000	175,000	USD	MMBtu
LNG DES West India 1 Half-Month	LMEAA00				Spot	DES	West India	2nd Half-Month forward	135,000	175,000	USD	MMBtu
LNG DES West India 2 Half-Month	LMEAB00				Spot	DES	West India	3rd Half-Month forward	135,000	175,000	USD	MMBtu
LNG DES West India 3 Half-Month	LMEAC00				Spot	DES	West India	4th Half-Month forward	135,000	175,000	USD	MMBtu
LNG DES West India 4 Half-Month	LMEAD00				Spot	DES	West India	5th Half-Month forward	135,000	175,000	USD	MMBtu
LNG DES West India 5 Half-Month	LMEAE00				Spot	DES	West India	6th Half-Month forward	135,000	175,000	USD	MMBtu
LNG Japan/Korea Spot Crg DES Jpy/MMBtu	AAOVR00	AAOVR03			Spot	DES	Japan-Korea	3rd & 4th or 4th & 5th Half-Month forward	135,000	175,000	JPY	MMBtu
JKM Monthly Average USD	AAOV503				Spot	DES	Japan-Korea		135,000	175,000	USD	MMBtu
JKM Monthly Average JPY	AAOVT03				Spot	DES	Japan-Korea		135,000	175,000	JPY	MMBtu
DES West India Monthly Average	AAWIC03				Spot	DES	West India		135,000	175,000	USD	MMBtu
JKM Cumulative Moving Average USD	AAOV500				Spot	DES	Japan-Korea		135,000	175,000	USD	MMBtu
JKM Cumulative Moving Average JPY	AAOVT00				Spot	DES	Japan-Korea		135,000	175,000	JPY	MMBtu
DES West India Cumulative Moving Average USD	AALIC00				Spot	DES	West India		135,000	175,000	USD	MMBtu

## Pacific Basin Assessments

Pacific Basin assessments, derivatives and netbacks are published each business day and reflect market values prevailing at the close of Asian markets, at 4:30 pm Singapore time. Prices are published in the following Platts services: Natural Gas Alert (PGN), Platts LNG Daily, Platts Market Data and Platts LNG Navigator.

### Japan/Korea Marker (Platts JKM™)

Platts launched on February 2, 2009, daily spot Asian LNG assessments under the benchmark name Platts Japan/Korea Marker (Platts JKM™). Platts also publishes a single value daily assessment of the JKM, in JPY/MMBtu, calculated using an assessed daily currency exchange rate.

The assessment is published following editorial engagement with market participants such as producers, consumers, traders, brokers, shippers and other active spot market participants.

**Basis & Location:** Cargoes delivered ex-ship (DES) to ports in Japan and South Korea that can receive a minimum cargo size of 135,000 cu m.

Prices of LNG spot cargoes delivered into ports in Taiwan or China with the same minimum cargo size may be normalized to basis Japan/Korea, using an assessed deviation cost from Japan/Korea to Taiwan/China. Platts publishes a single value assessment for the JKM. This assessed value is based on confirmed spot transactions, firm bids / offers, indications of value, expressions of interest, or in the absence of liquidity, where a spot transaction would have been concluded.

**Timing:** Cargo delivery in the third, fourth, fifth and sixth half-month cycles forward from the date of publication.

Platts considers the following trading terms to be typical for the publication of bids, offers and other transactional data for

spot LNG cargoes reflected in its benchmark JKM LNG price assessments.

These standards apply to bids, offers and trades published by Platts in the MOC price assessment process.

**Standard Terms:** Unless stated otherwise by a counterparty at the time of providing data for publication, the bids and offers provided for publication in the MOC should reflect these following standards, which Platts understands to be broadly typical in the spot market. Platts may publish bids, offers and trades for LNG cargoes that carry different terms and conditions, but may normalize these when considered in final, published assessments. Participants in the MOC process should clearly state in submitted bids or offers terms that differ from these standards.

**Delivery Window:** The delivery period reflected by bids and offers should typically be three to five days long, with the buyer to narrow to a one- or two-day delivery window 30 days before the first day of the traded delivery window.

**Discharge Location:** Bids and offers should typically reflect delivery into Japan, South Korea, Taiwan and China, with buyer's option to nominate discharge country and port. Bids must state a specific base discharge port. The location chosen sets the conditions for any potential counterparty considering trading. For transactions concluded and reported through the MOC process, buyers should nominate delivery country, and a specific port within that country, at least 30 days before the first day of the traded delivery window. Buyers retain the option to substitute delivery port within the same country up to 20 days before the first day of the traded delivery window, subject to ship shore compatibility study (SSCS).

**Loading location:** Platts considers typical bids, offers and trades where sellers have the option to nominate the loading port and may substitute loading port up to 30 days prior to the first day of the traded delivery window subject to Gross Heating Value

(GHV) quality range reported in the trade. Offers for cargoes for delivery at or less than 45 days from the date of assessment that do not explicitly state a base loading port may be subject to normalization.

**Quality:** Market participants should clearly state quality specifications in bids and offers submitted for publication. Platts JKM™ assessments reflect cargoes with a GHV of 1030-1130 Btu/scf, maximum total sulfur content of 5mg/Nm<sup>3</sup> and maximum ethane content of 10%/mol. Unless explicitly stated, this will be the assumed specifications for bids, offers and trades reported during the MOC process. Bids, offers and trades that differ from the standard specification will continue to be published. Platts may normalize bids, offers and trades for quality specifications with different GHV ranges, as well as for different total sulfur or ethane content limits.

**Quantity:** The standard cargo quantity reflected in JKM is 3.4 TBtu. Platts considers for publication bids, offers and trades for other cargo sizes, but may normalize these for assessment purposes to the standard value of 3.4 TBtu. Offers with cargo volumes submitted in a range are subject to review prior to publishing and are subject to normalization when considered in the final assessment price. For offers or bids submitted in a volume range the nomination deadline by which buyers are informed of the final cargo volume (exclusive of operational tolerance) must be stated. Platts considers the standard operational tolerance to be +/-5% at the seller's option, and only considers bids where the operational tolerance is +/-5% at the seller's option.

**LNG Vessel:** Platts reflects a vessel size range of 135,000-175,000 m<sup>3</sup> in JKM. Sellers should nominate an LNG ship either 45 days prior to the first day of the traded delivery window, or state the base vessel in the offer for more prompt delivery windows. Sellers may substitute delivery vessel up to 30 days prior to the first day of the traded delivery window subject to SSCS. For cargoes for delivery at or less than 30 days from the date of assessment, sellers should state the LNG vessel explicitly.

Platts expects parties to be reasonable when exceptional circumstances require sellers to substitute vessels or buyers to substitute terminals beyond typical standards stated in Platts MOC guidelines. Companies must promptly communicate to their counterparties when such a substitution is required. And buyers or sellers should not unreasonably withhold substitutions or hamper the established delivery process.

**Outright, floating prices:** Platts considers a variety of inputs, including outright price bids/offers and floating price bids/offers in JKM. Participants in the Platts MOC assessment process may submit for publication bids and offers that include a price basis and a differential to that basis, and should clearly state the basis period -- for example "basis JKM Jul 16-Aug 15".

Platts establishes the hedgeable, outright value of floating and spread price indications by applying them to the observable, prevailing value of underlying relevant derivatives instruments. The objective is to assess the prevailing tradeable outright price of the commodity at the close of the market assessment period.

Outright price submissions take precedence in the editorial process at all times. For example, an outright price bid or offer (i.e. \$11.50/MMBtu) may invalidate a floating price basis bid or offer (i.e. JKM plus \$1.00/MMBtu) during the assessment process if the prices demonstrably coexist in conflict at any moment in time.

### Japan/Korea Marker (Platts JKM™) Derivatives

Platts publishes daily Asian LNG derivative assessments under the name DES Japan/Korea Marker (Platts JKM™) derivatives. These are assessed at 4:30 pm Singapore time and 4:30 pm London time.

The assessments are published following editorial engagement with market participants such as producers, consumers, traders, brokers and other active spot market participants.

**Volume:** Derivatives typically trade in lot sizes of 10,000 MMBtu. Platts also considers larger clip sizes for derivatives in its assessment process.

**Timing:** Derivative prices are assessed for JKM pricing month, one month forward from the physical JKM, two months forward and three months forward, the next two active quarters and the active forward calendar year. For example, on June 1, Platts assesses the physical JKM for July delivery, and assesses JKM derivatives for July, August, September and October. The derivatives assessment rolls over on the 16th of each calendar month unless that day is not a business day, in which case the assessment rolls over on the next business day. For example, if June 16 is a business day, the JKM derivatives assessments roll over to September, October and November. The quarters are assessed beyond the three forward months. For example, in H1 November 2019, Platts assesses JKM forward curve periods: December, January, February, March, Q1 2020, Q2 2020 and Cal 2020. In H2 November, the forward curve periods are: January, February, March, April, Q2 2020, Q3 2020 and Cal 2020. The Calendar Year assessment rolls over on the first business day of the year. For example, the Cal 2019 JKM derivative assessment rolls into Cal 2020 on January 2, 2019.

**Settlement:** The Platts JKM™ derivative is financially settled based on the physical spot Platts JKM™ assessments published. For example, the August paper will be settled against the average of the daily assessments for August physical JKM, published between June 16 and July 15.

Platts will publish bids, offers and interest to trade from approved participants in the JKM derivative MOC process in line with the following editorial standards and guidelines.

**Submitting bids, offers and intentions to trade:** Buyers and sellers must submit any bids and offers with complete information to Platts editors by phone, instant message or email before 16:00:00 Singapore time or 08:00:00 GMT. Platts expects participants to clearly state all the relevant information when

submitting a bid or offer for publication, including price, contract period and volume. Platts may request further information from participants to ensure clarity. Buyers and sellers may withdraw their bids or offers at any time during the MOC by communicating the same to Platts editors, so long as interest in trading against the published bid or offer has not already been received by Platts. Counterparties must clearly communicate their interest to trade a published bid or offer to Platts editors. Bids or offers that are traded in the MOC may be repeated at the same or a less competitive price.

**Volume:** Platts requires participants to bid or offer LNG derivatives at a minimum size of 50,000 MMBtu, and multiples thereof.

**Credit and trading terms:** Transactions for LNG derivatives reported in the MOC are typically bilateral trades between counterparties, and should reflect their standard credit and trading terms. Any company submitting a bid or offer that can only be traded on a cleared basis, and which would have to be processed as a block-cleared derivative before final confirmation, should state as such in their bid or offer at the time of submitting for publication.

### FOB Middle East Netback

Platts launched on January 8, 2010 daily spot assessments of LNG under the benchmark name FOB Middle East (FOB ME). The assessment became a netback calculation in August 2012 when the DES West India assessment (which had been a netforward from FOB Middle East) emerged as the more liquid and transparent spot market.

**Timing:** Assessment of cargoes loading 25-45 days forward from the date of publication. For instance, on March 1, Platts will assess cargoes for loading between March 26 and April 15.

**Basis & Location:** Cargoes loaded free on board at ports in Das Island in Abu Dhabi and Ras Laffan in Qatar.

**Assessment:** Platts publishes a single netback value indicating the implied price of a cargo at the close of Asian markets using freight cost formulae. For FOB Middle East, a freight rate covering a three-day voyage is subtracted from DES West India.

### DES West India

Platts publishes daily DES West India assessments for a total of five half-month periods. Platts assesses cargoes for delivery in the second, third, fourth, fifth and sixth half-month cycles forward from the date of publication. The DES West India monthly assessment is based on the average of the two DES West India half-months that match the JKM delivery month period.

The assessment is published following editorial engagement with producers, consumers, traders, brokers, shippers and other active spot market participants.

**Basis & Location:** Cargoes delivered ex-ship (DES) at ports on the west coast of India that can receive a minimum cargo size of 135,000 cu m.

**Assessment:** Platts publishes a single value indicating the price at which a cargo could be traded at the close of the MOC process. This assessed value is based on confirmed spot transactions, firm bids/offers, indications of value and expressions of interest, or in the absence of liquidity, where a spot transaction would have been concluded. It also takes into account netbacks from prevailing consumer markets.

**Timing:** Cargo delivery for the DES West India monthly assessment matches the month of the Platts JKM™.

**Standard Terms:** Unless stated otherwise by a counterparty at the time of providing data for publication, the bids and offers provided for publication in the MOC should reflect these following standards, which Platts understands to be broadly typical in the spot market. Platts may publish bids, offers and trades for LNG cargoes that carry different terms and conditions,

but may normalize these when considered in final, published assessments. Participants in the MOC process should clearly state in submitted bids or offers terms that differ from these standards.

**Delivery Window:** The delivery period reflected by bids and offers will typically be three to five days long, with the buyer to narrow to a one- or two-day delivery window 30 days before the first day of the traded delivery window.

**Discharge Location:** Bids and offers typically reflect delivery into West Indian ports, with buyer's option to nominate the discharge port. Bids will need to be expressed with a specific discharge basis (or base) port. The location chosen sets the conditions for any potential counterparty considering trading. For transactions concluded and reported through the MOC process, buyers should nominate delivery port at least 30 days before the first day of the traded delivery window, or at the time of trade confirmation for more prompt delivery windows.

Buyers will retain the option to substitute delivery port within ports on the West Coast of India up to 15 days before the first day of the traded delivery window, subject to SSCS. Substitution of delivery locations to ports in East coast India, Dubai and Kuwait are subject to normalization.

**Loading Location:** Platts will reflect bids, offers and trades where sellers have the option to nominate the loading port up to 30 days prior to the first day of the traded delivery window and may be substituted up to 15 days prior to the first day of the traded delivery window subject to GHV quality range reported in the trade. For cargoes for delivery at or less than 30 days from the date of assessment, sellers will have to state the load port explicitly.

**Quality:** Market participants should clearly state GHV specifications in bids and offers submitted for publication. Platts DES West India assessments reflect cargoes with a GHV of 1000-1150 Btu/Scf. Platts may normalize for quality specifications with different ranges.

**Quantity:** DES West India assessments will reflect quantity of 3.2 TBtu. This volume will be subject to +/-5% operational tolerance, at the seller's option. For cargoes offered or bid for in a volume range (i.e. 3.1-3.4 TBtu +/-5%), the specific volume (i.e. 3.3 TBtu +/-5%) should be declared by the seller 30 days prior to delivery, and this declaration deadline should be stated in the offer or bid.

**LNG Vessel:** Platts standards will continue to reflect published DES West India LNG vessel size range of 135,000-175,000 cu m. Sellers should nominate an LNG ship either 30 days prior to the first day of the traded delivery window, or at the time of trade confirmation for more prompt delivery window. For cargoes for delivery at or less than 30 days from the date of assessment, sellers should state the LNG vessel explicitly. Sellers may substitute delivery vessel up to 15 days prior to the first day of the traded delivery window, subject to SSCS.

Platts expects parties to be reasonable when exceptional circumstances require sellers to substitute vessels or buyers to substitute terminals beyond typical standards stated in Platts MOC guidelines. Companies must promptly communicate to their counterparties when such a substitution is required. And buyers or sellers should not unreasonably withhold substitutions or hamper the established delivery process.

### FOB Australia Netback

Platts publishes a daily spot netback assessment for LNG loading in Australia which applies a freight cost subtraction from JKM.

**Timing:** Freight netbacks correspond to the outright assessment from the primary end-use market. Cargoes for loading in Australia are assessed using JKM assessments minus a freight period of eight days.

**Location:** Loading at Dampier, Australia.

**Assessment:** Platts publishes a single value indicating the implied price of a cargo at Asian market close using freight cost

formulae. For FOB Australia, a freight rate covering an eight-day voyage will be subtracted from JKM.

### **Middle East Marker (MEM)**

Platts publishes daily DES Middle East LNG assessments under the marker name Middle East Marker (MEM). The assessment is published following editorial engagement with market participants such as producers, consumers, traders, brokers, shippers and other active spot market participants.

**Basis & Location:** Cargoes delivered ex-ship at ports in the Middle East capable of receiving cargoes with a minimum cargo size of 135,000 cubic meters.

The basis ports are Mina Al Ahmadi, Kuwait; Jebel Ali and Ruwais, UAE. All other locations will be normalized using an assessed deviation cost.

**Assessment:** Platts publishes a single value indicating the price at which a cargo could be traded at the close of the MOC process. This assessed value is based on confirmed spot transactions, firm bids/offers, indications of value and

expressions of interest, or in the absence of liquidity, where a spot transaction would have been concluded. It also takes into account netbacks from prevailing consumer markets.

**Timing:** Cargo delivery in the month matching the Platts JKM™.

### **FOB Singapore Netback**

Platts publishes a daily spot netback assessment for LNG loading in Singapore which applies a freight cost subtraction from JKM.

**Timing:** Freight netbacks correspond to the outright assessment from the primary end-use market. Cargoes for loading in Singapore are assessed using JKM assessments minus a freight period of seven days.

**Location:** Loading at Singapore.

**Assessment:** Platts publishes a single value indicating the implied price of a cargo at Asian market close using freight cost formulae. For FOB Singapore, a freight rate covering a seven-day voyage will be subtracted from JKM.

**LNG DERIVATIVES ASSESSMENTS**

Assessment	Symbol	Mavg	Wavg	Rolling Mavg	Contract Type	Contract Basis	Location	Delivery Period	min. size	max. size	Currency	UOM
<b>Singapore Close</b>												
LNG Japan/Korea swap Pricing Month	LJKM000				Derivative		Japan/Korea	JKM physical +0 Months	10,000	10,000	USD	MMBtu
LNG Japan/Korea swap Mo01	LJKM001	LJKM031			Derivative		Japan/Korea	JKM physical +1 Month	10,000	10,000	USD	MMBtu
LNG Japan/Korea swap Mo02	LJKM002	LJKM032			Derivative		Japan/Korea	JKM physical +2 Months	10,000	10,000	USD	MMBtu
LNG Japan/Korea swap Mo03	LJKM003	LJKM033			Derivative		Japan/Korea	JKM physical +3 Months	10,000	10,000	USD	MMBtu
LNG Japan/Korea swap Q1	LJKQR01				Derivative		Japan/Korea	JKM physical active forward quarter	10,000	10,000	USD	MMBtu
LNG Japan/Korea swap Q2	LJKQR02				Derivative		Japan/Korea	JKM physical active forward quarter+1	10,000	10,000	USD	MMBtu
LNG Japan/Korea swap Calendar Year	LJKYR01				Derivative		Japan/Korea	JKM physical active forward calendar year	10,000	10,000	USD	MMBtu
<b>London Close</b>												
LNG Japan/Korea swap Pricing Month	JKLM000				Derivative		Japan/Korea	JKM physical +0 Months	10,000	10,000	USD	MMBtu
LNG Japan/Korea swap Mo01	JKLM001				Derivative		Japan/Korea	JKM physical +1 Month	10,000	10,000	USD	MMBtu
LNG Japan/Korea swap Mo02	JKLM002				Derivative		Japan/Korea	JKM physical +2 Months	10,000	10,000	USD	MMBtu
LNG Japan/Korea swap Mo03	JKLM003				Derivative		Japan/Korea	JKM physical +3 Months	10,000	10,000	USD	MMBtu
LNG Japan/Korea swap Q1	JKLQR01				Derivative		Japan/Korea	JKM physical active forward quarter	10,000	10,000	USD	MMBtu
LNG Japan/Korea swap Q2	JKLQR02				Derivative		Japan/Korea	JKM physical active forward quarter+1	10,000	10,000	USD	MMBtu
LNG Japan/Korea swap Calendar Year	JKLYR01				Derivative		Japan/Korea	JKM physical active forward calendar year	10,000	10,000	USD	MMBtu

**ATLANTIC BASIN LNG ASSESSMENTS**

Assessment	Symbol	Mavg	Wavg	Rolling Mavg	Contract Type	Contract Basis	Location	Delivery Period	Min size	Max size	Currency	UOM
LNG DES Middle East Marker MEM Spot Cargo Mo01	LMEMA00				Spot	DES	Middle East	3rd & 4th or 4th & 5th Half-Month forward	135,000	175,000	USD	MMBtu
LNG DES Middle East Marker MEM 1 Half-Month	LMEMB00				Spot	DES	Middle East	3rd Half-Month forward	135,000	175,000	USD	MMBtu
LNG DES Middle East Marker MEM 2 Half-Month	LMEMC00				Spot	DES	Middle East	4th Half-Month forward	135,000	175,000	USD	MMBtu
LNG DES Middle East Marker MEM 3 Half-Month	LMEMD00				Spot	DES	Middle East	5th Half-Month forward	135,000	175,000	USD	MMBtu
LNG DES Middle East Marker MEM 4 Half-Month	LMEME00				Spot	DES	Middle East	6th Half-Month forward	135,000	175,000	USD	MMBtu
LNG DES Middle East Marker MEM vs Middle East Fuel Oil	LMEMF00				Spot	DES	Middle East	Front month			USD	MMBtu
LNG DES Middle East Marker MEM vs Henry Hub 16:30 London Mo01	LMEMG00				Spot	DES	Middle East	Front month			USD	MMBtu
LNG DES Middle East Marker MEM vs JKM 16:30 Singapore Mo01	LMEMH00				Spot	DES	Middle East	Front month			USD	MMBtu
LNG DES Middle East Marker MEM vs NBP 16:30 London Mo01	LMEMJ00				Spot	DES	Middle East	Front month			USD	MMBtu
LNG DES Middle East Marker MEM vs DES Northwest Europe	LMEMK00				Spot	DES	Middle East	Front month			USD	MMBtu
LNG DES Middle East Marker MEM vs DES Mediterranean	LMEML00				Spot	DES	Middle East	Front month			USD	MMBtu
LNG FOB East Atlantic spot cargo Mo01	LEAMM01	LEAMM31			Spot	FOB	East Atlantic	2nd & 3rd or 4th & 5th Half-Month forward	135,000	175,000	USD	MMBtu
LNG FOB East Atlantic 1 Half-Month	LEAMH01	LEAMH31			Spot	FOB	East Atlantic	2nd Half-month forward	135,000	175,000	USD	MMBtu
LNG FOB East Atlantic 2 Half-Month	LEAMH02	LEAMH32			Spot	FOB	East Atlantic	3rd Half-Month forward	135,000	175,000	USD	MMBtu
LNG FOB East Atlantic 3 Half-Month	LEAMH03	LEAMH33			Spot	FOB	East Atlantic	4th Half-Month forward	135,000	175,000	USD	MMBtu
LNG FOB East Atlantic spot cargo Monthly Average	LEAMS31				Spot	FOB	East Atlantic		135,000	175,000	USD	MMBtu
LNG FOB East Atlantic spot cargo Cumulative Moving Average	LEAMT00				Spot	FOB	East Atlantic		135,000	175,000	USD	MMBtu
LNG FOB East Atlantic vs Dated Brent	LEADB00	LEADB03			Differential			Front Month			USD	MMBtu
LNG FOB East Atlantic vs ARA Fuel Oil	LEARA00	LEARA03			Differential			Front Month			USD	MMBtu



## ATLANTIC BASIN LNG ASSESSMENTS

Assessment	Symbol	Mavg	Wavg	Rolling Mavg	Contract Type	Contract Basis	Location	Delivery Period	Min size	Max size	Currency	UOM
LNG FOB East Atlantic vs Henry Hub London 16:30 Mo01	LEHMH01	LEHMH31			Differential			Front Month			USD	MMBtu
LNG FOB East Atlantic vs JKM Singapore 16:30 Mo01	LEJMH01	LEJMH31			Differential			Front Month			USD	MMBtu
LNG FOB East Atlantic vs NBP London 16:30 Mo01	LENPM01	LENPM31			Differential			Front Month			USD	MMBtu
LNG FOB East Atlantic vs DES Mediterranean	LESWE00	LESWE03			Differential			Front Month			USD	MMBtu
LNG NWE Spot DES	AASXU00	AASXU03			Spot	DES	Northwest Europe	3rd & 4th or 4th & 5th Half-Month forward	135,000	175,000	USD	MMBtu
LNG NWE Spot DES 1 Half-Month	AASXV00	AASXV03			Spot	DES	Northwest Europe	3rd Half-Month forward	135,000	175,000	USD	MMBtu
LNG NWE Spot DES 2 Half-Month	AASXW00	AASXW03			Spot	DES	Northwest Europe	4th Half-Month forward	135,000	175,000	USD	MMBtu
LNG NWE Spot DES 3 Half-Month	AASXX00	AASXX03			Spot	DES	Northwest Europe	5th Half-Month forward	135,000	175,000	USD	MMBtu
LNG NWE Spot DES Monthly average	AASDE03				Spot	DES	Northwest Europe		135,000	175,000	USD	MMBtu
LNG NWE Spot DES Cumulative Moving Average	AASDF00				Spot	DES	Northwest Europe		135,000	175,000	USD	MMBtu
LNG MED Spot DES	AASXY00	AASXY03			Spot	DES	Mediterranean	3rd & 4th or 4th & 5th Half-Month forward	135,000	175,000	USD	MMBtu
LNG MED Spot DES 1 Half-Month	AASXZ00	AASXZ03			Spot	DES	Mediterranean	3rd Half-Month forward	135,000	175,000	USD	MMBtu
LNG MED Spot DES 2 Half-Month	AASYA00	AASYA03			Spot	DES	Mediterranean	4th Half-Month forward	135,000	175,000	USD	MMBtu
LNG MED Spot DES 3 Half-Month	AASYB00	AASYB03			Spot	DES	Mediterranean	5th Half-Month forward	135,000	175,000	USD	MMBtu
LNG MED Spot DES Monthly Average	AASDE03				Spot	DES	Northwest Europe		135,000	175,000	USD	MMBtu
LNG MED Spot DES Cumulative Moving Average	AADCU00				Spot	DES	Northwest Europe		135,000	175,000	USD	MMBtu
LNG DES NWE Percent NBP	AASYD00	AASYD03			Percentage			Front Month			UNS	percent
LNG DES NWE Spot vs Dutch TTF Mo01 \$/MMBtu	LNTFN00	LNTFN03			Differential		TTF	vs equivalent TTF			USD	MMBtu
LNG DES MED Spot vs Dutch TTF Mo01 \$/MMBtu	LNTFS00	LNTFS03			Differential		TTF	vs equivalent TTF			USD	MMBtu
LNG NWE vs HH London 16:30	AASYE00	AASYE03			Differential			Front Month			USD	MMBtu
LNG MED vs HH London 16:30	AASYF00	AASYF03			Differential			Front Month			USD	MMBtu
LNG NWE vs UK NBP London 16:30	AASYG00	AASYG03			Differential			Front Month			USD	MMBtu
LNG MED vs UK NBP London 16:30	AASYH00	AASYH03			Differential			Front Month			USD	MMBtu
LNG NWE vs DB London 16:30	AASYI00	AASYI03			Differential			Front Month			USD	MMBtu
LNG MED vs DB London 16:30	AASYJ00	AASYJ03			Differential			Front Month			USD	MMBtu
LNG NWE vs MED London 16:30	AASYK00	AASYK03			Differential			Front Month			USD	MMBtu
LNG NWE Ldn 16:30 vs JKM Spore 16:30	AASYL00	AASYL03			Differential			Front Month			USD	MMBtu
LNG MED Ldn 16:30 vs JKM Spore 16:30	AASYM00	AASYM03			Differential			Front Month			USD	MMBtu
HHub 1-Mo London 16:30 Hrs	AASYN00	AASYN03			Futures		Henry Hub	M+1			USD	MMBtu
HHub 2-Mo London 16:30 Hrs	AASYO00	AASYO03			Futures		Henry Hub	M+2			USD	MMBtu
NBP 1-Mo London 16:30 Hrs p/th	AASYP00	AASYP03			Futures		NBP	M+1			GBP	therm
NBP 2-Mo London 16:30 Hrs p/th	AASYQ00	AASYQ03			Futures		NBP	M+2			GBP	therm
NBP 1-Mo London 16:30Hrs \$/MMBtu	AASYR00	AASYR03			Futures		NBP	M+1			USD	MMBtu
NBP 2-Mo London 16:30Hrs \$/MMBtu	AASYS00	AASYS03			Futures		NBP	M+2			USD	MMBtu
DES Brazil Netforward Mo01	LEBMH01	LEBMH31			Netforward	DES	Brazil	3rd & 4th or 4th & 5th Half-Month forward	135,000	175,000	USD	MMBtu
DES Brazil Netforward vs ARA Fuel Oil	LAARM01	LAAR03			Differential			Front Month			USD	MMBtu
DES Brazil Netforward vs DES MED LNG	LASWM01	LASW03			Differential			Front Month			USD	MMBtu
DES Brazil Netforward vs Dated Brent	LADBM01	LADB03			Differential			Front Month			USD	MMBtu
DES Brazil Netforward vs Henry Hub	LAHMH01	LAHH03			Differential			Front Month			USD	MMBtu
DES Brazil Netforward vs JKM	LAJMH01	LAJK03			Differential			Front Month			USD	MMBtu
DES Brazil Netforward vs NBP	LABPM01	LABP03			Differential			Front Month			USD	MMBtu

## ATLANTIC BASIN LNG ASSESSMENTS

Assessment	Symbol	Mavg	Wavg	Rolling Mavg	Contract Type	Contract Basis	Location	Delivery Period	Min size	Max size	Currency	UOM
LNG FOB GCM spot cargo Mo01	LGCSM01	LGCSM31			Spot	FOB	Gulf Coast	2nd & 3rd or 3rd & 4th half month forward	135,000	175,000	USD	MMBtu
LNG FOB GCM spot cargo Monthly Average	LGCGM31				Spot	FOB	Gulf Coast		135,000	175,000	USD	MMBtu
LNG FOB GCM spot cargo Cumulative Moving Average	LGCGN00				Spot	FOB	Gulf Coast		135,000	175,000	USD	MMBtu
LNG FOB GCM 1 Half-Month	LUGCA01	LUGCA31			Spot	FOB	Gulf Coast	2nd Half-month forward	135,000	175,000	USD	MMBtu
LNG FOB GCM 2 Half-Month	LUGCB02	LUGCB32			Spot	FOB	Gulf Coast	3rd Half-Month forward	135,000	175,000	USD	MMBtu
LNG FOB GCM 3 Half-Month	LUGCC03	LUGCC33			Spot	FOB	Gulf Coast	4th Half-Month forward	135,000	175,000	USD	MMBtu
LNG FOB GCM vs. Dated Brent	LGMDB00	LGMDB03			Differential			Front Month			USD	MMBtu
LNG FOB GCM vs. EAM	LGMEA00	LGMEA03			Differential			Front Month			USD	MMBtu
LNG FOB US Gulf Coast Cargo Mo01 vs Dutch TTF Mo01 \$/MMBtu	LNTFG00	LNTFG03			Differential		TTF	vs equivalent TTF			USD	MMBtu
LNG FOB GCM vs Henry Hub Houston 13:30 Mo01	LGMHM01	LGMHM31			Differential			Front Month			USD	MMBtu
LNG FOB GCM vs JKM Houston 13:30 Mo01	LGMJM01	LGMJM31			Differential			Front Month			USD	MMBtu
LNG FOB GCM vs NBP Houston 13:30 Mo01	LGMNM01	LGMNM31			Differential			Front Month			USD	MMBtu
LNG FOB GCM vs USGC 3%S fuel oil	LGMFO00	LGMFO03			Differential			Front Month			USD	MMBtu
LNG FOB GCM vs WTI	LGMT00	LGMT03			Differential			Front Month			USD	MMBtu
LNG FOB Murmansk NetBack	AARXV00	AARXV03			Netback	FOB		3rd & 4th or 4th & 5th Half-Month forward			USD	MMBtu

### Atlantic Basin Assessments

Atlantic Basin assessments and netforwards are published each business day and reflect market values prevailing at the close of European markets, at 4:30 pm London time, with the exception of daily FOB Gulf Coast assessments. Unless otherwise stated, prices are published in the following Platts services: Natural Gas Alert (PGN), European Power Alert (EPA), Platts LNG Daily, Platts Market Data and Platts LNG Navigator.

#### East Atlantic Marker (EAM)

Platts publishes daily FOB East Atlantic LNG assessments under the marker name East Atlantic Marker (EAM). The assessment is published following editorial engagement with market participants such as producers, consumers, traders, brokers, shippers and other active spot market participants.

**Basis & Location:** Cargoes loaded on a FOB basis from production/reload ports across the East Atlantic that can load a minimum cargo size of 135,000 cu m.

Basis port is Gibraltar/Huelva. All other locations will be normalized to the basis port using an assessed deviation cost. Ship-to-ship (STS) transactions and prices of volumes in-tank at terminals are also considered in the assessment where relevant.

This assessed value is based on confirmed spot transactions, firm bids / offers, indications of value and expressions of interest, or in the absence of liquidity, where a spot transaction would have been concluded.

**Timing:** Cargo loading in the second, third and fourth half-month cycles forward from the date of publication.

#### Mediterranean Marker (MED)

Platts publishes daily spot Mediterranean Marker (MED) LNG assessments. The assessment is published following direct contact with market participants such as producers, consumers, traders, brokers, shippers and other active spot market participants.

**Basis & Location:** Cargoes delivered ex-ship (DES) at ports in the

Mediterranean, including Spain and Portugal, which can receive a minimum cargo size of 135,000 cu m.

Platts publishes a single value assessment for the MED. This assessed value is based on confirmed spot transactions, firm bids / offers, indications of value and expressions of interest, or in the absence of liquidity, where a spot transaction would have been concluded.

**Timing:** Cargo delivery in the third, fourth and fifth half-month cycles forward from the date of publication.

#### Northwest Europe (NWE)

Platts publishes daily spot Northwest Europe (NWE) LNG assessments. The assessment is published following direct contact with market participants such as producers, consumers, traders, brokers, shippers and other active spot market participants.

**Basis & Location:** Cargoes delivered ex-ship (DES) at ports in northwest Europe that can receive a minimum cargo size of 135,000 cu m.

Platts publishes a single value assessment for NWE. This assessed value is based on confirmed spot transactions, firm bids / offers, or in the absence of liquidity, where a spot transaction would have been concluded.

Timing: Cargo delivery in the third, fourth and fifth half-month cycles forward from the date of publication.

Platts considers the following trading terms to be typical for the publication of bids, offers and other transactional data for spot LNG cargoes reflected in its NWE & MED LNG price assessments.

These standards apply to bids, offers and trades to be published by Platts in the MOC price assessment process.

**Standard Terms:** Unless stated otherwise by a counterparty at the time of providing data for publication, the bids and offers in the MOC should reflect these following standards, which Platts understands to be broadly typical in the spot market. Platts may publish bids, offers and trades for LNG cargoes that carry different terms and conditions, but may normalize these when considered in final, published assessments. Participants in the MOC process should clearly state in submitted bids or offers terms that differ from these standards.

**Delivery Window:** The delivery period reflected by bids and offers should typically be three to five days long, with the buyer to narrow to a one- or two-day delivery window 30 days prior to delivery.

**Discharge Location:** Bids and offers into Northwest Europe should typically reflect delivery into Isle of Grain, Zeebrugge, Gate LNG, Dragon LNG, Montoir, South Hook and Dunkirk, with the buyer to nominate base delivery port at least 30 days prior to delivery. The buyer should retain the option to substitute discharge port up to 20 days prior, subject to SSCS.

Bids and offers into Southwest Europe should typically reflect delivery into all ports in the Iberian peninsula, and Fos Cavaou,

with the buyer to nominate base delivery port at least 30 days prior to delivery. The buyer should retain the option to substitute discharge port up to 20 days prior, subject to SSCS. Bids and offers into other Mediterranean destinations may be considered for publication.

**Loading Location:** Platts considers typical bids, offers and trades where sellers have the option to state the loading port up to 20 days prior to the first day of the traded delivery window subject to the initially-reported (GHV) quality range.

**Quality:** Market participants should clearly state GHV specifications in bids and offers submitted for publication.

**Quantity:** Platts notes that a wide range of cargo volumes are traded in the European LNG market. Platts considers for publication bids and offers for typical cargo sizes. Platts reflects cargoes whose operational tolerance is +/- 5% at the seller's option. For cargoes offered or bid for in a volume range (i.e. 3.1-3.4 TBtu +/-5%), the specific volume (i.e. 3.3 TBtu +/-5%) should be declared by the seller a reasonable number of days prior to delivery, and this declaration deadline must be stated in the offer or bid.

**LNG Vessel:** Platts reflects bids and offers where the seller should nominate the LNG carrier up to 20 days prior to delivery. Platts expects parties to be reasonable when exceptional circumstances require sellers to substitute vessels or buyers to substitute terminals beyond typical standards stated in Platts MOC guidelines. Companies must promptly communicate to their counterparties when such a substitution is required. Buyers or sellers should not unreasonably withhold substitutions or hamper the established delivery process.

### FOB Murmansk Netback

Platts publishes a daily FOB Murmansk netback using the assessed freight route cost from Murmansk to Zeebrugge and Platts existing delivered ex-ship (DES) Northwest Europe (NWE)

LNG assessment.

The voyage length for the Murmansk-Zeebrugge route is four days one-way. The bunker fuel basis for this route is Antwerp.

The vessel specifications and assumptions are as per existing methodology (see ATDR for details).

### DES Brazil

Platts publishes a daily spot netforward assessment for LNG delivered to Brazil, which applies a freight cost addition to the Gulf Coast Marker (GCM) to arrive at a DES Brazil value, taking into consideration the 13 day voyage from the US Gulf Coast to Salvador, Brazil.

**Timing:** Cargo delivery either in the third & fourth or fourth & fifth half-month cycles forward from the date of publication.

The assessment rolls on the 16th of the month, or nearest business day after the 16th, to the following whole month. For example, on June 16, the DES Brazil netforward month assessed is August; on July 16, the month rolls to September.

**Location:** Delivery at Bay of All Saints, Salvador de Bahia, Brazil

### Gulf Coast Marker (GCM)

Platts publishes daily FOB Gulf Coast LNG assessments under the marker name Gulf Coast Marker (GCM) reflecting the value of spot LNG exported from the US Gulf Coast on a FOB basis.

**Frequency:** The GCM assessment is published each business day and reflects market values prevailing at the close of US markets, at 1:30 pm Houston.

The assessment is published following editorial engagement with market participants such as producers, consumers, traders, brokers, shippers and other active spot market participants.

**Basis & Location:** Cargoes loaded on an FOB basis from ports across the US Gulf Coast. Basis port is Sabine Pass. All other locations will be normalized to the basis port using an assessed deviation cost.

Platts publishes a single value assessment for the GCM. This assessed value is based on confirmed spot transactions, firm bids / offers, indications of value and expressions of interest, or in the absence of liquidity, where a spot transaction would have been concluded. Valuation methods in the absence of trade could include use of “netback” valuations, to consider the cost of competing in the global market. In such a situation the LNG marker reflects the price that might be paid by an LNG buyer to attract a one-off cargo against global competition.

**Timing:** Cargo loading in the second, third and fourth half-month cycles forward from the date of publication.

**Delivery Window:** The loading period reflected in bids, offers and trades should typically be three to five days long, with the seller to narrow to a one-day loading window 30 days before the first

day of the traded delivery window.

**Loading Location:** Bids, offers and trades should typically reflect loading in US Gulf Coast ports. Offers must be expressed with a specific base load port. The base load port chosen sets the conditions for any potential counterparty considering trading.

Sellers retain the option to substitute loading port in the US Gulf Coast up to a reasonable period before the first day of the traded loading window, subject to ship shore compatibility study (SSCS). Substitution of delivery locations to ports outside of the US Gulf Coast may be subject to normalization, and the option would need to be stated in the bid or offer.

**Quality:** Market participants should clearly state GHV specifications in bids and offers submitted for publication. GCM reflects cargoes with a GHV of 1,010-1,050 Btu/Scf. Platts may normalize for quality specifications with different ranges.

**Quantity:** GCM reflects a cargo quantity of 3.5 TBtu. This volume is subject to +/-2% operational tolerance, at the seller's option.

Platts continues to consider different cargo volumes, but may normalize where appropriate back to 3.5TBtu +/-2% operational tolerance.

**LNG Vessel:** Buyers should nominate an LNG ship 30 days prior to the first day of the traded delivery window, or at the time of trade confirmation for more prompt delivery windows. For cargoes for delivery at or less than 30 days from the date of assessment, buyers should state the LNG vessel explicitly in the bid. Buyers may substitute delivery vessel up to 15 days prior to the first day of the traded delivery window, subject to SSCS.

Platts expects parties to be reasonable when exceptional circumstances require buyers to substitute vessels or sellers to substitute terminals beyond typical standards stated in Platts guidelines. Companies must promptly communicate to their counterparties when such a substitution is required. And buyers or sellers should not unreasonably withhold substitutions or hamper the established delivery process.

## LNG SHIPPING ASSESSMENTS

Assessment	Symbol	Mavg	Wavg	Rolling Mavg	Contract Type	Contract Basis	Location	Delivery Period	Minimum size	Max.size	Currency	UOM
LNG Carrier Day Rate Asia-Pac	AARXT00	AARXT03			Day Rate	Asia-Pacific	25-45 Days Ahead		155,000	180,000	USD	
LNG Atlantic Carrier Day Rate	AASYC00	AASYC03			Day Rate	Atlantic	25-45 Days Ahead		155,000	180,000	USD	
LNG Atlantic Ballast Rate	AAXTM00	AAXTM03				Atlantic						
LNG Pacific Ballast Rate	AAXTN00	AAXTN03				Asia-Pacific						
LNG Time Charter Rate Australia-Japan	ATCRA00	ATCRA03				Asia-Pacific			155,000	180,000	USD	
LNG Time Charter Rate USG-Japan	ATCRC00	ATCRC03				Asia-Pacific			155,000	180,000	USD	
LNG Time Charter Rate USG-Northwest Europe	ATCRB00	ATCRB03				Atlantic			155,000	180,000	USD	
LNG Australia-Japan/Korea Freight cost \$/MMBtu	AAUSA00	AAUSA03							155,000	180,000	USD	MMBtu
LNG Trinidad-Japan/Korea Freight cost \$/MMBtu	AAUSB00	AAUSB03							155,000	180,000	USD	MMBtu
LNG Nigeria-Japan/Korea Freight cost \$/MMBtu	AAUSC00	AAUSC03							155,000	180,000	USD	MMBtu
LNG Algeria-Japan/Korea Freight cost \$/MMBtu	AAUSD00	AAUSD03							155,000	180,000	USD	MMBtu
LNG Zeebrugge-Japan/Korea Freight cost \$/MMBtu	AAUSE00	AAUSE03							155,000	180,000	USD	MMBtu
LNG Peru-Japan/Korea Freight cost \$/MMBtu	AAUSF00	AAUSF03							155,000	180,000	USD	MMBtu
LNG Sakhalin-Japan/Korea Freight cost \$/MMBtu	AAUSG00	AAUSG03							155,000	180,000	USD	MMBtu
LNG Middle East-S China/Taiwan Freight cost \$/MMBtu	AAUSH00	AAUSH03							155,000	180,000	USD	MMBtu
LNG Australia-S China/Taiwan Freight cost \$/MMBtu	AAUSI00	AAUSI03							155,000	180,000	USD	MMBtu
LNG Trinidad-S China/Taiwan Freight cost \$/MMBtu	AAUSJ00	AAUSJ03							155,000	180,000	USD	MMBtu
LNG Nigeria-S China/Taiwan Freight cost \$/MMBtu	AAUSK00	AAUSK03							155,000	180,000	USD	MMBtu
LNG Algeria-S China/Taiwan Freight cost \$/MMBtu	AAUSL00	AAUSL03							155,000	180,000	USD	MMBtu
LNG Zeebrugge-S China/Taiwan Freight cost \$/MMBtu	AAUSM00	AAUSM03							155,000	180,000	USD	MMBtu
LNG Peru-S China/Taiwan Freight cost \$/MMBtu	AAUSN00	AAUSN03							155,000	180,000	USD	MMBtu
LNG Sakhalin-S China/Taiwan Freight cost \$/MMBtu	AAUSO00	AAUSO03							155,000	180,000	USD	MMBtu
LNG Middle East-W India Freight cost \$/MMBtu	AAUSP00	AAUSP03							155,000	180,000	USD	MMBtu
LNG Middle East-W India Fgt MAvg	AAUSP03								155,000	180,000	USD	MMBtu
LNG Australia-W India Freight cost \$/MMBtu	AAUSQ00	AAUSQ03							155,000	180,000	USD	MMBtu
LNG Trinidad-W India Freight cost \$/MMBtu	AAUSR00	AAUSR03							155,000	180,000	USD	MMBtu
LNG Nigeria-W India Freight cost \$/MMBtu	AAUSS00	AAUSS03							155,000	180,000	USD	MMBtu
LNG Algeria-W India Freight cost \$/MMBtu	AAUST00	AAUST03							155,000	180,000	USD	MMBtu
LNG Zeebrugge-W India Freight cost \$/MMBtu	AAUSU00	AAUSU03							155,000	180,000	USD	MMBtu
LNG Peru-W India Freight cost \$/MMBtu	AAUSV00	AAUSV03							155,000	180,000	USD	MMBtu
LNG Sakhalin-W India Freight cost \$/MMBtu	AAUSW00	AAUSW03							155,000	180,000	USD	MMBtu
LNG Middle East-Mediterranean Freight cost \$/MMBtu	AAUSX00	AAUSX03							155,000	180,000	USD	MMBtu
LNG Trinidad-Mediterranean cost \$/MMBtu	AAUSZ00	AAUSZ03							155,000	180,000	USD	MMBtu
LNG Nigeria-Mediterranean cost \$/MMBtu	AAUTA00	AAUTA03							155,000	180,000	USD	MMBtu
LNG Algeria-Mediterranean cost \$/MMBtu	AAUTB00	AAUTB03							155,000	180,000	USD	MMBtu
LNG Zeebrugge-Mediterranean Freight cost \$/MMBtu	AAUTC00	AAUTC03							155,000	180,000	USD	MMBtu
LNG Peru-Mediterranean Freight cost \$/MMBtu	AAUTD00	AAUTD03							155,000	180,000	USD	MMBtu

**LNG SHIPPING ASSESSMENTS**

Assessment	Symbol	Mavg	Wavg	Rolling Mavg	Contract Type	Contract Basis	Location	Delivery Period	Minimum size	Max.size	Currency	UOM
LNG Platts LNG Freight 2-Middle East-NWE Freight cost \$/MMBtu	AAUTE00	AAUTE03							155,000	180,000	USD	MMBtu
LNG Australia-NWE Freight cost \$/MMBtu	AAUTF00	AAUTF03							155,000	180,000	USD	MMBtu
LNG Nigeria-NWE Freight cost \$/MMBtu	AAUTG00	AAUTG03							155,000	180,000	USD	MMBtu
LNG Algeria-NWE Freight cost \$/MMBtu	AAUTH00	AAUTH03							155,000	180,000	USD	MMBtu
LNG Peru-NWE Freight cost \$/MMBtu	AAUTI00	AAUTI03							155,000	180,000	USD	MMBtu
LNG Sakhalin-NWE Freight cost \$/MMBtu	AAUTJ00	AAUTJ03							155,000	180,000	USD	MMBtu
LNG Middle East-North East US Freight cost \$/MMBtu	AAUTK00	AAUTK03							155,000	180,000	USD	MMBtu
LNG Australia-North East US Freight cost \$/MMBtu	AAUTL00	AAUTL03							155,000	180,000	USD	MMBtu
LNG Trinidad-North East US Freight cost \$/MMBtu	AAUTM00	AAUTM03							155,000	180,000	USD	MMBtu
LNG Nigeria-North East US Freight cost \$/MMBtu	AAUTN00	AAUTN03							155,000	180,000	USD	MMBtu
LNG Algeria-North East US Freight cost \$/MMBtu	AAUTO00	AAUTO03							155,000	180,000	USD	MMBtu
LNG Zeebrugge-North East US Freight cost \$/MMBtu	AAUTP00	AAUTP03							155,000	180,000	USD	MMBtu
LNG Peru-North East US Freight cost \$/MMBtu	AAUTQ00	AAUTQ03							155,000	180,000	USD	MMBtu
LNG Sakhalin-North East US Freight cost \$/MMBtu	AAUTR00	AAUTR03							155,000	180,000	USD	MMBtu
LNG Middle East-Argentina Freight cost \$/MMBtu	AAUTS00	AAUTS03							155,000	180,000	USD	MMBtu
LNG Australia-Argentina Freight cost \$/MMBtu	AAUTT00	AAUTT03							155,000	180,000	USD	MMBtu
LNG Trinidad-Argentina Freight cost \$/MMBtu	AAUTU00	AAUTU03							155,000	180,000	USD	MMBtu
LNG Nigeria-Argentina Freight cost \$/MMBtu	AAUTV00	AAUTV03							155,000	180,000	USD	MMBtu
LNG Algeria-Argentina Freight cost \$/MMBtu	AAUTW00	AAUTW03							155,000	180,000	USD	MMBtu
LNG Zeebrugge-Argentina Freight cost \$/MMBtu	AAUTX00	AAUTX03							155,000	180,000	USD	MMBtu
LNG Peru-Argentina Freight cost \$/MMBtu	AAUTY00	AAUTY03							155,000	180,000	USD	MMBtu
LNG Sakhalin-Argentina Freight cost \$/MMBtu	AAUTZ00	AAUTZ03							155,000	180,000	USD	MMBtu
LNG Platts LNG Freight Middle East-Japan/Korea Freight cost \$/MMBtu	AAUUA00	AAUUA03							155,000	180,000	USD	MMBtu
LNG Sakhalin-Mediterranean Freight cost \$/MMBtu	AAUUB00	AAUUB03							155,000	180,000	USD	MMBtu
LNG Platts LNG Freight 3-Trinidad-NWE Freight cost \$/MMBtu	AAUUC00	AAUUC03							155,000	180,000	USD	MMBtu
LNG Spain- Japan/Korea Freight cost \$/MMBtu	ACAAA00	ACAAA03							155,000	180,000	USD	MMBtu
LNG Spain/South China/Taiwan Freight cost \$/MMBtu	ACAAB00	ACAAB03							155,000	180,000	USD	MMBtu
LNG Spain/West India Freight cost \$/MMBtu	ACAAC00	ACAAC03							155,000	180,000	USD	MMBtu
LNG Spain/North West Europe Freight cost \$/MMBtu	ACAAD00	ACAAD03							155,000	180,000	USD	MMBtu
LNG Spain/NorthEast US Freight cost \$/MMBtu	ACA AE00	ACA AE03							155,000	180,000	USD	MMBtu
LNG Spain/Argentina Freight cost \$/MMBtu	ACA AF00	ACA AF03							155,000	180,000	USD	MMBtu
LNG Spain/Brazil Freight cost \$/MMBtu	ACA AG00	ACA AG03							155,000	180,000	USD	MMBtu
LNG Norway-Japan/Korea Freight cost \$/MMBtu	ACA AH00	ACA AH03							155,000	180,000	USD	MMBtu
LNG Norway/South China/Taiwan Freight cost \$/MMBtu	ACA AI00	ACA AI03							155,000	180,000	USD	MMBtu
LNG Norway/West India Freight cost \$/MMBtu	ACA AJ00	ACA AJ03							155,000	180,000	USD	MMBtu
LNG Norway/Mediterranean Freight cost \$/MMBtu	ACA AK00	ACA AK03							155,000	180,000	USD	MMBtu
LNG Norway/North West Europe Freight cost \$/MMBtu	ACA AL00	ACA AL03							155,000	180,000	USD	MMBtu
LNG Norway/NorthEast US Freight cost \$/MMBtu	ACA AM00	ACA AM03							155,000	180,000	USD	MMBtu
LNG Norway/Argentina Freight cost \$/MMBtu	ACA AN00	ACA AN03							155,000	180,000	USD	MMBtu

**LNG SHIPPING ASSESSMENTS**

Assessment	Symbol	Mavg	Wavg	Rolling Mavg	Contract Type	Contract Basis	Location	Delivery Period	Minimum size	Max.size	Currency	UOM
LNG Norway/Brazil Freight cost \$/MMBtu	ACAA000	ACAA003							155,000	180,000	USD	MMBtu
LNG Middle East/Brazil Freight cost \$/MMBtu	ACAAP00	ACAAP03							155,000	180,000	USD	MMBtu
LNG Australia/Brazil Freight cost \$/MMBtu	ACAAQ00	ACAAQ03							155,000	180,000	USD	MMBtu
LNG Trinidad/Brazil Freight cost \$/MMBtu	ACAAR00	ACAAR03							155,000	180,000	USD	MMBtu
LNG Nigeria/Brazil Freight cost \$/MMBtu	ACAAS00	ACAAS03							155,000	180,000	USD	MMBtu
LNG Algeria/Brazil Freight cost \$/MMBtu	ACAAT00	ACAAT03							155,000	180,000	USD	MMBtu
LNG Belgium/Brazil Freight cost \$/MMBtu	ACAAU00	ACAAU03							155,000	180,000	USD	MMBtu
LNG Peru/Brazil Freight cost \$/MMBtu	ACAAV00	ACAAV03							155,000	180,000	USD	MMBtu
LNG Russia/Brazil Freight cost \$/MMBtu	ACAAW00	ACAAW03							155,000	180,000	USD	MMBtu
LNG US Gulf - Japan/Korea Freight cost \$/MMBtu	LAUVA00	LAUVA03							155,000	180,000	USD	MMBtu
LNG US Gulf - Japan/Korea Freight cost via Cape \$/MMBtu	LAUVK00	LAUVK03							155,000	180,000	USD	MMBtu
LNG US Gulf - Japan/Korea Freight cost via Panama \$/MMBtu	LAUVI00	LAUVI03							155,000	180,000	USD	MMBtu
LNG US Gulf - Japan/Korea Freight cost via Suez \$/MMBtu	LAUVJ00	LAUVJ03							155,000	180,000	USD	MMBtu
LNG US Gulf - S China/Taiwan Freight cost \$/MMBtu	LAUVB00	LAUVB03							155,000	180,000	USD	MMBtu
LNG US Gulf - S China/Taiwan Freight cost via Cape \$/MMBtu	LAUVN00	LAUVN03							155,000	180,000	USD	MMBtu
LNG US Gulf - S China/Taiwan Freight cost via Panama \$/MMBtu	LAUVL00	LAUVL03							155,000	180,000	USD	MMBtu
LNG US Gulf - S China/Taiwan Freight cost via Suez \$/MMBtu	LAUVM00	LAUVM03							155,000	180,000	USD	MMBtu
LNG US Gulf - Argentina Freight cost \$/MMBtu	LAUVG00	LAUVG03							155,000	180,000	USD	MMBtu
LNG US Gulf - Brazil Freight cost \$/MMBtu	LAUVH00	LAUVH03							155,000	180,000	USD	MMBtu
LNG US Gulf - NW Europe Freight cost \$/MMBtu	LAUVE00	LAUVE03							155,000	180,000	USD	MMBtu
LNG US Gulf - Mediterranean Freight cost \$/MMBtu	LAUVD00	LAUVD03							155,000	180,000	USD	MMBtu
LNG US Gulf - W India Freight cost \$/MMBtu	LAUVC00	LAUVC03							155,000	180,000	USD	MMBtu
LNG US Gulf - W India Freight cost via Cape \$/MMBtu	LAUVP00	LAUVP03							155,000	180,000	USD	MMBtu
LNG US Gulf - W India Freight cost via Suez \$/MMBtu	LAUV000	LAUV003							155,000	180,000	USD	MMBtu
LNG Australia-Mediterranean Freight cost \$/MMBtu	AAUSY00	AAUSY03							155,000	180,000	USD	MMBtu
LNG Middle East/Kuwait/UAE Freight cost \$/MMBtu	LMEMM00	LMEMM03							155,000	180,000	USD	MMBtu
LNG Australia - Kuwait/UAE Freight cost \$/MMBtu	LMEMN00	LMEMN03							155,000	180,000	USD	MMBtu
LNG Trinidad - Kuwait/UAE Freight cost \$/MMBtu	LMEMP00	LMEMP03							155,000	180,000	USD	MMBtu
LNG Nigeria - Kuwait/UAE Freight cost \$/MMBtu	LMEMQ00	LMEMQ03							155,000	180,000	USD	MMBtu
LNG Algeria - Kuwait/UAE Freight cost \$/MMBtu	LMEMR00	LMEMR03							155,000	180,000	USD	MMBtu
LNG Belgium - Kuwait/UAE Freight cost \$/MMBtu	LMEMS00	LMEMS03							155,000	180,000	USD	MMBtu
LNG Peru - Kuwait/UAE Freight cost \$/MMBtu	LMEMT00	LMEMT03							155,000	180,000	USD	MMBtu
LNG Russia - Kuwait/UAE Freight cost \$/MMBtu	LMEMU00	LMEMU03							155,000	180,000	USD	MMBtu
LNG Spain - Kuwait/UAE Freight cost \$/MMBtu	LMEMV00	LMEMV03							155,000	180,000	USD	MMBtu
LNG Norway - Kuwait/UAE Freight cost \$/MMBtu	LMEMW00	LMEMW03							155,000	180,000	USD	MMBtu
LNG US Gulf Coast/Kuwait/UAE Freight cost \$/MMBtu	LMEMX00	LMEMX03							155,000	180,000	USD	MMBtu
LNG US Gulf Coast/Kuwait/UAE Freight cost via Suez \$/MMBtu	LMEY000	LMEY003							155,000	180,000	USD	MMBtu

## LNG SHIPPING ASSESSMENTS

Assessment	Symbol	Mavg	Wavg	Rolling Mavg	Contract Type	Contract Basis	Location	Delivery Period	Minimum size	Max.size	Currency	UOM
LNG US Gulf Coast/Kuwait/UAE Freight cost via Cape \$/MMBtu	LMEMZ00	LMEMZ03							155,000	180,000	USD	MMBtu
LNG Trinidad-Japan/Korea (most economic) Freight Cost \$/MMBtu	AAUZC00	AAUZC03							155,000	180,000	USD	MMBtu
LNG Trinidad-Japan/Korea via Panama Canal Freight Cost \$/MMBtu	AAUXB00	AAUXB03							155,000	180,000	USD	MMBtu
LNG Trinidad-S China/Taiwan (most economic) Freight Cost \$/MMBtu	AAUZD00	AAUZD03							155,000	180,000	USD	MMBtu
LNG Trinidad-S China/Taiwan via Panama Canal Freight Cost \$/MMBtu	AAUZB00	AAUZB03							155,000	180,000	USD	MMBtu
LNG Gladstone-Argentina Freight Cost \$/MMBtu	ACABH00	ACABH03							155,000	180,000	USD	MMBtu
LNG Gladstone-Brazil Freight Cost \$/MMBtu	ACABG00	ACABG03							155,000	180,000	USD	MMBtu
LNG Gladstone- Kuwait/UAE Freight Cost \$/MMBtu	ACABI00	ACABI03							155,000	180,000	USD	MMBtu
LNG Gladstone-Japan/Korea Freight Cost \$/MMBtu	ACABA00	ACABA03							155,000	180,000	USD	MMBtu
LNG Gladstone-Northeast US via Panama Canal Freight Cost \$/MMBtu	ACABF00	ACABF03							155,000	180,000	USD	MMBtu
LNG Gladstone-Northwest Europe via Suez Freight Cost \$/MMBtu	ACABE00	ACABE03							155,000	180,000	USD	MMBtu
LNG Gladstone-S China/Taiwan Freight Cost \$/MMBtu	ACABB00	ACABB03							155,000	180,000	USD	MMBtu
LNG Gladstone-Mediterranean via Suez Freight Cost \$/MMBtu	ACABD00	ACABD03							155,000	180,000	USD	MMBtu
LNG Gladstone-West India Freight Cost \$/MMBtu	ACABC00	ACABC03							155,000	180,000	USD	MMBtu
LNG Bintulu-Japan/Korea Freight Cost \$/MMBtu	ABJKA00	ABJKA03							155,000	180,000	USD	MMBtu
LNG Bintulu-S China/Taiwan Freight Cost \$/MMBtu	ABCTA00	ABCTA03							155,000	180,000	USD	MMBtu
LNG Bintulu-West India Freight Cost \$/MMBtu	ABWIA00	ABWIA03							155,000	180,000	USD	MMBtu
LNG Bontang-Japan/Korea Freight Cost \$/MMBtu	A0JKA00	A0JKA03							155,000	180,000	USD	MMBtu
LNG Bontang-S China/Taiwan Freight Cost \$/MMBtu	AOCTA00	AOCTA03							155,000	180,000	USD	MMBtu
LNG Bontang-West India Freight Cost \$/MMBtu	AOWIA00	AOWIA03							155,000	180,000	USD	MMBtu
LNG Singapore-Japan/Korea Freight Cost \$/MMBtu	ASJKA00	ASJKA03							155,000	180,000	USD	MMBtu
LNG Singapore-S China/Taiwan Freight Cost \$/MMBtu	ASCTA00	ASCTA03							155,000	180,000	USD	MMBtu
LNG Singapore-West India Freight Cost \$/MMBtu	ASWIA00	ASWIA03							155,000	180,000	USD	MMBtu
LNG Tangguh-Japan/Korea Freight Cost \$/MMBtu	ATJKA00	ATJKA03							155,000	180,000	USD	MMBtu
LNG Tangguh-S China/Taiwan Freight Cost \$/MMBtu	ATJKA00	ATJKA03							155,000	180,000	USD	MMBtu
LNG Tangguh-West India Freight Cost \$/MMBtu	ATWIA00	ATWIA03							155,000	180,000	USD	MMBtu
LNG Murmansk-Zeebrugge Freight cost \$/MMBtu	AARXW00	AARXW03							155,000	180,000	USD	MMBtu

### Shipping assessments

Platts shipping assessments and freight costs are published each business day and reflect market values prevailing at the close of markets, in the respective region (Singapore/UK/US). On certain days ahead of a public holiday, such as Christmas Eve and New Year's Eve, Platts may assess the market earlier than normal. This would typically be 12:30pm in Singapore and 12:00pm in London.

Prices are published in the following Platts services: Natural Gas Alert (PGN), Platts LNG Daily, Platts Market Data and Platts LNG Navigator.

#### Asia Pacific LNG Carrier Day Rates (APDR)

Platts publishes daily spot charter rate LNG carrier assessments under the benchmark name Asia Pacific LNG Day Rates (APDR).

**Frequency:** The APDR assessment is published each business day and reflects market values prevailing at the close of Asian markets, typically at 4:30 pm Singapore time.

The assessment is published following editorial engagement with ship owners, brokers, producers, consumers, traders and other active spot market participants.



**Basis & Location:** The day rate covers the daily cost of chartering a modern Tri-Fuel Diesel Engine (TFDE) LNG vessel for a short period. The rate covers carriers delivered in the Asia-Pacific region, without regional transfer costs. Fuel is assumed to be paid for by the charterer separately, and acquired on the open market. Carriers are assumed to be delivered cooled down. Ice class vessels are not considered for assessment.

**Unit:** All prices are quoted in US dollars per day (\$/day), to the nearest dollar.

**Assessment:** Platts publishes a single value indicating the price at which a ship can be chartered at the close of Asian markets, typically at 4:30 pm Singapore time. This assessed value is based on confirmed spot transactions, firm bids/offers, or in the absence of liquidity, where a spot transaction would have been concluded.

**Volume:** Standard carriers of 155,000–180,000 cu m. Larger Qatari Q-Flex (from 210,000 cu m) and Q-Max (from 260,000 cu m) carriers are not considered directly in the APDR, though they may be normalized to standard volume of 165,000 cu m.

**Timing:** Carriers for loading 25–45 days out from the date of assessment. For instance, on March 1, Platts would assess carriers loading between March 26 and April 15.

### Asia Pacific LNG Ballast Rate

Platts publishes Asia Pacific Ballast Rate LNG carrier assessment.

**Frequency:** The assessment is published each business day and reflects market values prevailing at the close of Asian markets, typically at 4:30 pm Singapore time.

The assessment is published following editorial engagement with ship owners, brokers, charterers, and other active spot market participants.

**Basis & Location:** in line with APDR

**Unit:** % of APDR

**Assessment:** Platts publishes a single value indicating the ballast rate at which a spot ship can be chartered at the close of Asian markets, typically at 4:30 pm Singapore time.

### Atlantic LNG Carrier Day Rates (ATDR)

Platts publishes daily spot charter LNG carrier assessments under the benchmark name Atlantic LNG Day Rates (ATDR).

**Frequency:** The ATDR assessment is published each business day and reflects market values prevailing at the close of European markets, typically at 4:30 pm London time.

The assessment is published following direct contact with ship owners, brokers, producers, consumers, traders and other active spot market participants.

**Basis & Location:** The day rate covers the daily cost of chartering a modern Tri-Fuel Diesel Engine (TFDE) LNG vessel for a short period. The rate covers carriers delivered in the Atlantic region, without regional transfer costs. Fuel is assumed to be paid for by the charterer separately, and acquired on the open market. Carriers are assumed to be delivered cooled down. Ice class vessels will not be included for assessment.

**Timing:** Carriers for loading 25–45 days out from the date of assessment. For instance, on July 1, Platts would assess carriers loading between July 26 and August 15.

**Unit:** All prices are quoted in US dollars per day (\$/day), to the nearest dollar.

**Assessment:** Platts publishes a single value indicating the price at which a ship can be chartered at the close of European markets, typically at 4:30 pm London time. This assessed value is based on confirmed spot transactions, firm bids/offers, or in the absence of liquidity, where a spot transaction would have been concluded.

**Volume:** Standard carriers of 155,000–180,000 cu m. Larger Qatari Q-Flex (from 210,000 cu m) and Q-Max (from 260,000 cu m) carriers are not considered directly in the ATDR, though they may be normalized to a standard volume of 165,000 cu m.

### Atlantic LNG Ballast Rate

Platts publishes Atlantic ballast rate LNG carrier assessment.

**Frequency:** The assessment is published each business day and reflects market values prevailing at the close of European markets, typically at 4:30 pm London time.

The assessment is published following editorial engagement with ship owners, brokers, charterers, and other active spot market participants.

**Basis & Location:** in line with ATDR

**Unit:** % of ATDR

**Assessment:** Platts publishes a single value indicating the ballast rate at which a spot ship can be chartered at the close of European markets, typically at 4:30 pm London time.

### Time Charter Rates (TCRs)

Platts publishes daily TCR price assessments for Australia (Dampier) – Japan (Futtsu), US Gulf Coast (Sabine Pass) – Japan (Futtsu) and US Gulf Coast (Sabine Pass) – Northwest Europe (Zeebrugge). These reflect round-trip economics.

## VOYAGE TIMES IN DAYS

	Japan/Korea	SChina/ Taiwan	West India	Southwest Europe	Northwest Europe	Northeast US	Argentina	Brazil	Kuwait/UAE
Middle East	15	13	3		13*	16*	22*	24	1
Australia	9	7	9		21*	24*	29	25	11
Gladstone	9	10	15		27*	30*	26**	18	20*
Bontang	6	4	9						
Tangguh	6	5	11						
Bintulu	6	3	8						
Singapore	7	4	6						
Trinidad	33*	31*	22*	9	9	5	11	7	17
Trinidad (via Panama Canal)	22**	27**							
Trinidad (most economic)	lower of above 2								
Nigeria	26	23	17	9	10	13	11	9	17*
Algeria	24*	22*	13*	1	4	9	14	12	11*
Belgium	28*	25*	16*	3	N/A	8	16	14	15*
Peru	21	24	27	23	24	24	9	14	29
Russia	3	5	15	27*	29*	35*	27	37	21
Spain	25*	22*	14*	N/A	3	7	14	11	12*
Norway	32*	28*	20*	6	3	9	19	18	18*
Sabine Pass (most economic)	lower of below 2, until Panama Canal starts	lower of below 2, until Panama Canal starts	lower of below 2, until Panama Canal starts	12	12	N/A	17	13	
Sabine Pass (via Suez Canal)	36*	32*	24*	N/A	N/A	N/A	N/A	N/A	23*
Sabine Pass (via Cape)	38	35	31	N/A	N/A	N/A	N/A	N/A	30
Sabine Pass (via Panama Canal)	23**	28**	N/A	N/A	N/A	N/A	N/A	N/A	

\* Route uses Suez canal, adds one day extra for shipping and 24 cents/MMBtu for canal fees \*\* Route uses Panama canal, adds 21 cents/MMBtu for canal fees

## BUNKER FUEL BASES

	Japan/Korea	SChina/ Taiwan	West India	Southwest Europe	Northwest Europe	Northeast US	Argentina	Brazil	Kuwait/UAE
Middle East	Fujairah	Fujairah	Fujairah		Fujairah	Fujairah	Fujairah	Fujairah	Fujairah
Australia	Singapore	Singapore	Singapore		Singapore	Singapore	Singapore	Singapore	Singapore
Gladstone	Singapore	Singapore	Singapore		Singapore	Singapore	Singapore	Singapore	Singapore
Bontang	Singapore	Singapore	Singapore						
Tangguh	Singapore	Singapore	Singapore						
Bintulu	Singapore	Singapore	Singapore						
Singapore	Singapore	Singapore	Singapore						
Trinidad	Cartagena	Cartagena	Cartagena	Cartagena	Cartagena	Cartagena	Cartagena	Cartagena	Cartagena
Trinidad (via Panama Canal)	Cartagena	Cartagena	Cartagena	Cartagena	Cartagena	Cartagena	Cartagena	Cartagena	Cartagena
Trinidad (most economic)	Cartagena	Cartagena	Cartagena	Cartagena	Cartagena	Cartagena	Cartagena	Cartagena	Cartagena
Nigeria	Las Palmas/Tenerife	Las Palmas/Tenerife	Las Palmas/Tenerife	Las Palmas/Tenerife	Las Palmas/Tenerife	Las Palmas/Tenerife	Las Palmas/Tenerife	Las Palmas/Tenerife	Las Palmas
Algeria	Malta	Malta	Malta	Gibraltar	Gibraltar	Gibraltar	Gibraltar	Gibraltar	Malta
Belgium	Antwerp	Antwerp	Antwerp	Antwerp	N/A	Antwerp	Antwerp	Antwerp	Antwerp
Peru	El Callao	El Callao	El Callao	El Callao	El Callao	El Callao	El Callao	El Callao	El Callao
Russia (Sakhalin)	Japan	Japan	Japan	Japan	Japan	Japan	Japan	Japan	Japan
Russia (Murmansk)					Antwerp				
Spain	Gibraltar	Gibraltar	Gibraltar		Gibraltar	Gibraltar	Gibraltar	Gibraltar	Gibraltar
Norway	Rotterdam	Rotterdam	Rotterdam	Rotterdam	Rotterdam	Rotterdam	Rotterdam	Rotterdam	Rotterdam
Sabine Pass (most economic)	Houston	Houston	Houston	Houston	Houston	N/A	Houston	Houston	Houston
Sabine Pass (via Suez Canal)	Houston	Houston	Houston						Houston
Sabine Pass (via Cape)	Houston	Houston	Houston						Houston
Sabine Pass (via Panama Canal)	Houston	Houston							Houston

The LNG TCR price assessments are published under the following names and symbols:

LNG Time Charter Rate Australia-Japan \$/day (ATCRA00)

LNG Time Charter Rate USG-Japan \$/day (ATCRC00)

LNG Time Charter Rate USG-Northwest Europe \$/day (ATCRB00)

## LOAD PORTS

	USD
Ras Laffan	120,000
Dampier	200,000
Gladstone	240,000
Bontang	90,000
Tangguh	30,000
Bintulu	Convert from 800,000 MYR
Singapore	75,000
Point Fortin	60,000
Bonny	900,000
Arzew	160,000
Zeebrugge	130,000
Pampa Melchorita	200,000
Sakhalin	70,000
Huelva	240,000
Hammerfest	200,000
Sabine Pass	190,000
Murmansk	130,000

## DISCHARGE PORTS

	USD
Futtsu	120,000
Guangdong Dapeng	125,000
Dahej	40,000
Huelva	240,000
Zeebrugge	130,000
Everett	300,000
Bahia Blanca	0
Salvador Bahia	140,000
Mina Al Ahmadi/Jebel Ali/Ruwais	225,000

**The basis of the calculation is as follows for the Australia – Japan TCR:**

Platts Asia Pacific Day Rate (AARXT00) \* (laden leg number of days + ballast leg number of days \* Platts Asia Pacific Ballast Rate (AAXTN00) + loading and discharge days) / number of round-trip days

**The basis of the calculation is as follows for the USGC – Japan TCR:**

Platts Atlantic Day Rate (AASYC00) \* (laden leg number of days + ballast leg number of days \* Platts Atlantic Ballast Rate (AAXTM00) + loading days and discharge days + Canal-transit days) / number of round-trip days

**The basis of the calculation is as follows for the USGC – NWE TCR:**

Platts Atlantic Day Rate (AASYC00) \* (laden leg number of days + ballast leg number of days \* Platts Atlantic Ballast Rate (AAXTM00) + loading days and discharge days) / number of round-trip days.

The number of round-trip days is for the Australia-Japan route (nine days each way, three days for loading and discharge); 51 days (23 days each way, three days for loading and discharge, two days for Panama Canal transit) for the USGC-Japan route and 27 days for the USGC-NWE route.

## LNG global freight costs

**Frequency:** The LNG freight costs are published each business day and reflect market values prevailing at the regional close. On Singapore public holidays, no routes east of the Suez Canal will be published. On UK public holidays, no routes west of the Suez Canal will be published. On US public holidays, no routes to or from the Americas will be published.

**Unit:** All prices are quoted in US dollars per million British Thermal Units (\$/MMBtu) to two decimal places.

**Quality:** Any quality of LNG.

**Volume:** Standard cargoes of 155,000-180,000 cu m normalized to a standard volume of 165,000 cu m.

**Timing:** Freight costs are calculated as per the APDR and ATDR, including respective ballast rate, listed above.

**Location:** Loading in: Middle East (Ras Laffan); Australia (Dampier); Australia (Gladstone); Indonesia (Bontang, Tangguh), Malaysia (Bintulu), Singapore, Trinidad and Tobago (Point Fortin); Nigeria (Bonny Island); Algeria (Arzew); Belgium (Zeebrugge); Peru (Pampa Melchorita); Spain (Huelva); Norway (Hammerfest), Russia (Sakhalin) and USA (Sabine Pass).

**Delivery Points:** Japan/Korea (Futtsu); South China/Taiwan (Guangdong Dapeng); West India (Dahej); Southwest Europe (Huelva); Northwest Europe (Zeebrugge); Northeast US (Everett); Brazil (Salvador Bahia); Argentina (Bahia Blanca) and Kuwait/UAE (Mina Al Ahmadi, Jebel Ali, Ruwais).

**Assessment:** Platts publishes a single value indicating the implied cost of a voyage. This value is based on applying the relevant freight and ballast rate to a base price point (eg, JKM), a boil-off rate of 0.12%/day while laden, a boil-off rate of 0.09% while on ballast and a boil-off rate of 25% of the laden rate while in port. Boil-off is based off a 98.5% fillable volume. In addition the value will be based on bunker oil consumption rate of 100 mt/day fuel oil-equivalent (100 mt/day requirement minus fuel oil-equivalent volume from natural gas boil-off, using the nearest applicable Platts bunker oil assessment), relevant voyage times, with heel calculated as 0.09% natural boil-off while on ballast, multiplied by the number of days of the return leg plus 36 hours. The voyage timing assumes an average speed of 17 knots.

**Calculation:** Cost of charter for the entire voyage, accounting for a round-trip structure, ballast rate assessments, port costs, and a three-day loading/discharging time, and dividing that cost by the total delivered cargo in MMBtu; the cost of boil-off by

multiplying the volume lost by the delivered price, divided by the delivered cargo size in MMBtu; the consumption rate of bunker oil required is 100 mt/day minus the bunker fuel-equivalent volume of the boil-off gas; the cost of bunker oil by multiplying the Platts bunker fuel assessment in \$/mt by the consumption rate. The delivered cargo size is calculated by multiplying the vessel cargo size of 165,000 cu m by a fillable volume of 98.5%, minus the volume of boil-off from the combined laden and ballast legs of the journey, including the three-day loading/discharging time.

Platts uses a factor of 23.0 in its conversion of cubic meters to MMBtu for loaded LNG in its freight assessments and calculations.

### LNG port costs

Platts uses prevailing costs in the following ports to calculate its netbacks and has incorporated these port costs into the corresponding freight cost calculations.

### Conversion rates

Platts publishes a list of competing fuel prices daily in \$/MMBtu. The prices of competing oil and thermal coal assessments are converted from \$/bbl and \$/mt to \$/MMBtu using the conversions listed below. The conversion factors reflect those typically applied throughout the industry.

- Dated Brent and Asian Dated Brent price assessments are converted by using 5.8 MMBtu per barrel.
- Minas crude oil assessments are converted by using 5.9 MMBtu per barrel.
- LSWR Mixed/Cracked FOB Indonesia assessments are converted by using 5.5 MMBtu per barrel.
- The factor applied to the fuel oil 2% sulfur 180 CST FOB Singapore assessment to convert from dollars per metric ton to dollars per MMBtu is 39.7.
- The factor applied to the naphtha CFR Japan assessment to convert from dollars per metric ton to dollars per MMBtu is 46.8.
- The factor applied to the Northwest Europe fuel oil assessment to convert from dollars per metric ton to dollars per MMBtu is 39.7.
- The factor applied to the US West Coast 1% and 0.5% fuel oil, US Gulf Coast 3% fuel oil and New York Harbor 1% Sulfur fuel oil assessments to convert from dollars per barrel to dollars per MMBtu is 6.25.
- The factor applied to the Northeast Asia Thermal Coal price index (NEAT Coal Index) (5,750 kcal/kg NAR) is 23.705053 and CIF ARA coal (6,000 kcal/kg NAR) assessments to convert from dollar per metric ton to MMBtu is 24.294692.

## LNG COMPETING FUELS ASSESSMENTS

Assessment	Symbol	Mavg	Wavg	Rolling Mavg	Contract Type	Contract Basis	Location	Delivery Period	Minimum size	Max. size	Currency	UOM
UK NBP Gas \$/MMBtu	LNCVM01				Futures		NBP	Front month			USD	MMBtu
Naphtha CFR Japan \$/MMBtu	LNPJ00				Conversion		Japan	Front month			USD	MMBtu
LSWR Mxd/Ckd FOB Spore \$/MMBtu	LPAPU00				Conversion		Singapore	Front month			USD	MMBtu
CIF ARA 15-60 day thermal coal \$/MMBtu	CSAAB00				Conversion		ARA	15-60 day forward			USD	MMBtu
NEAT Coal Index \$/MMBtu	JKTCB00				Conversion		Japan, South Korea and Taiwan	15-60 day forward			USD	MMBtu
FO 180 FOB Spore \$/MMBtu	LUADW00				Conversion		Singapore	Front month			USD	MMBtu
New York Harbor 1.0 FO \$/MMBtu	LUAXD00				Conversion		New York Harbor	Front month			USD	MMBtu
US Gulf Coast 3% Fuel Oil \$/MMBtu	LUAXJ00				Conversion		US Gulf Coast	Front month			USD	MMBtu
Singapore Fuel Oil \$/MMBtu	LUAXZ00				Conversion		Singapore	Front month			USD	MMBtu
NorthWest Europe FO \$/MMBtu	LAEGR00				Conversion		Northwest Europe	Front month			USD	MMBtu
Jpn JCC LNG Imp Est CIF \$/MMBtu	LAKPM00				Conversion		Japan				USD	MMBtu
Jpn JCC LNG Imp Fin CIF \$/MMBtu	LAKPN00				Conversion		Japan				USD	MMBtu
Minas FOB Indonesia Crude oil \$/MMBtu	LCAB000				Conversion		Indonesia	Front month			USD	MMBtu

## LNG BUNKER FUEL ASSESSMENTS

Assessment	Symbol	Mavg	Wavg	Rolling Mavg	Contract Type	Contract Basis	Location	Delivery Period	Minimum size	Max. size	Currency	UOM
Singapore LNG Bunker Fuel \$/MMBtu	LNBSG00						Singapore				USD	MMBtu
Singapore LNG Bunker Fuel \$/mt	LNBSM00						Singapore				USD	mt
Rotterdam LNG Bunker Fuel Eur/MWh	LNBR000						Rotterdam				Eur	MWh
Rotterdam LNG Bunker Fuel \$/mt	LNBRM00						Rotterdam				Eur	mt

### Marine Fuel LNG Bunker price assessments

Platts publishes daily LNG Bunker Fuel assessments, reflecting the value of LNG used as a marine fuel, in the ports of Singapore and Rotterdam, effective September 2, 2019.

#### Singapore LNG Bunker Fuel

**Frequency:** The Singapore LNG Bunker Fuel assessment is published each business day and reflects market values prevailing at the close of Asian markets, typically at 4:30 pm Singapore time.

**Basis & Location:** Platts considers the prevailing tradeable value of LNG bunker fuel in the locations on a truck-to-ship (ex-wharf) or barge-to-ship (delivered) basis in Singapore.

Platts assesses the differential from the FOB Singapore netback from JKM (AAOVQ00), publishing the final assessment on a flat price basis.

**Unit:** The LNG bunker fuel assessment flat price in \$/MMBtu includes the logistics costs from the terminal to the barge or truck, and charges for delivery direct to the receiving vessel. Platts also publishes \$/mt conversions for LNG Bunker Fuel assessments. These \$/mt price series is converted from the MMBtu assessment to a metric tonne of fuel oil equivalent, using a factor of 38.643.

#### Rotterdam LNG Bunker Fuel

**Frequency:** The Rotterdam LNG Bunker Fuel assessment is published each business day and reflects market values prevailing at the close of European markets, typically at 4:30 pm London time.

**Basis & Location:** Platts considers the prevailing tradeable value of LNG bunker fuel in the locations on a truck-to-ship (ex-wharf) or barge-to-ship (delivered) basis in Rotterdam.

Platts assesses the differential from the spot LNG Northwest Europe (AASXU00) assessment, publishing the final assessment on a flat price basis. Other local gas hubs may also be considered as the basis for the Rotterdam assessment.

**Unit:** The LNG bunker fuel assessment flat price in Eur/MWh includes the logistics costs from the terminal to the barge or truck, and charges for delivery direct to the receiving vessel. Platts also publishes \$/mt conversions for LNG Bunker Fuel assessments. These \$/mt price series are converted from the MWh assessment to a metric tonne of fuel oil equivalent, using a factor of 11.322.

## REVISION HISTORY

**November 2019:** Platts adds FOB Murmansk netback and Time Charter Rates (TCR) for routes in the Pacific and Atlantic Basin. Platts adds definition to standard terms reflected in GCM. Platts adds sulfur and ethane limits to JKM specification. Platts adds FOB Singapore netback assessment.

**September 2019:** Platts renames the Southwest European Marker (SWE) to Mediterranean Marker (MED). Platts launched LNG Bunker Fuel assessments, in the ports of Singapore and Rotterdam. Platts defined the DES West India standard terms for LNG MOC process.

**Aug 2019:** Platts completed an annual update to the LNG Methodology and Specifications guide in August 2019. In this update, Platts reviewed all content. In this edition, Platts made minor edits throughout. Methodologies for market coverage were not changed through this revamp, unless specifically noted in the methodology guide itself. Platts clarified other locations considered in DES West India assessment process.

**July 2019:** Platts adds TTF Dutch gas hub differentials against JKM, NWE, SWE and GCM.

**June 2019:** Platts changed the DES Brazil LNG assessment to be a netforward from the GCM rather than the EAM. Platts updated the MOC guidelines for its JKM and European assessment processes. Platts completed an annual update to sections 1 to 6 of Platts Methodology and Specifications Guides in April 2019, and moved these sections into a standalone Methodology Guide.

**May 2019:** Platts adds 12 new freight routes; from Bontang, Tangguh, Singapore and Bintulu to Futtsu, Dapeng and Dahej.

**April 2019:** Platts adds JKM derivatives assessments for Pricing Month on Singapore and London time

**February 2019:** Platts amends LNG freight cost to align with

rebased Middle East Marker

**December 2018:** Platts adds London 16:30 assessments for JKM derivatives and updates basis for the Middle East Marker.

**October 2018:** Platts updates guidelines for LNG MOC process.

**August 2018:** Platts completed an annual update to the LNG Methodology and Specifications guide in August 2018. In this update, Platts reviewed all content. In this edition, Platts made minor edits throughout. Methodologies for market coverage were not changed through this revamp, unless specifically noted in the methodology guide itself.

**August 2018:** Platts launched LNG freight costs from Gladstone, Australia, on August 20 2018.

**July 2018:** Platts launched Ballast rate assessments, added port costs and updated various components in shipping calculations on July 2. Platts also revamped sections I-VI on July 13, Platts also made changes to the CIF ARA coal price listed under LNG Competing Fuels Assessments on July 23 to replace the existing CIF ARA 90-day coal assessment in \$/MMBtu with the CIF ARA 15-60-day coal assessment in \$/MMBtu.

**November 2017:** Platts updates JKM™ quality specifics as LNG spot pricing becomes more precise.

**October 2017:** Platts expanded the JKM™ derivatives curve assessment to include a new calendar year period.

**September 2017:** Platts amended Panama Canal transit cost from \$0.18/MMBtu to \$0.21/MMBtu on September 18.

**August 2017:** Platts completed an annual update to the LNG Methodology and Specifications guide in August 2017. In this update, Platts reviewed all content. In this edition, Platts made minor edits throughout.

**June 2017:** Platts launched five half-month assessments for the DES West India assessment. Platts launched new freight route costs from Trinidad to North Asia using Panama Canal.

**February 2017:** Platts launched new freight route costs to the Egyptian port of Ain Sukhna from loading ports in the existing freight route cost table.

**January 2017:** Platts launched the DES Middle East Marker and corresponding comparisons on January 16, 2017. Platts also replaced the Qinhuangdao coal price with the Northeast Asia Thermal Coal price index, or NEAT Coal Index (\$/MMBtu conversion).

**November 2016:** Platts launched monthly averages and cumulative monthly averages for JKM™, JKM™JPY conversions, NWE, SWE, EAM, West India and GCM markers. JKM™ derivatives curve assessment expanded to include two new quarter periods.

**October 2016:** Platts introduces new assessment of currency conversion for JKM™, assessment to Jpy/MMBtu.

**September 2016:** Platts completed an annual update to the LNG Methodology and Specifications guide in September 2016. In this update, Platts reviewed all content. In this edition, Platts made minor edits throughout.

**August 2016:** Platts corrects printing errors in the LNG Methodology and Specifications Guide relating to the freight routes going to Japan/Korea. These were wrongly printed S China/Taiwan; Platts added symbol AAUSY00 for the route Australia>Southwest Europe that was previously missing; clarified Sabine Pass>West India freight

**July 2016:** Platts clarifies LNG freight route costs following a printing error in the LNG Methodology and Specifications Guide relating to the voyage times for two freight routes. The routes are Sabine Pass to Argentina and Sabine Pass to Brazil.

**July 2016:** Platts added new freight routes via the Panama Canal.

**June 2016:** Platts introduced the Gulf Coast marker and corresponding fuel comparisons on June 16, 2016, and added new freight routes loading from US Gulf.

**January 2016:** Platts revised its shipping assumptions and netback calculations methodology to reflect newer spot tonnage and provide more specificity regarding routes.

**October 2015:** Platts introduced the DES Brazil netforward on October 1 2015 and changed its basis port for Brazil from Pecem to Bahia de Salvador. A number of price comparisons against the DES Brazil netforward were also launched.

**February 2015:** This methodology guide was updated to include further description of Platts processes and practices in survey assessment environments.

**January 2015:** Platts introduced the East Atlantic Marker (EAM) assessment for FOB cargoes lifted from ports along the East Atlantic on January 2, 2015. Additions to the global freight costs table were made in light of the launch of the EAM. Rotterdam

was added as a bunker port to accommodate the addition of Norway as an export destination. Brazil as an import destination was also included within the global freight cost matrix.

**November 2014:** Platts revamped all LNG Methodology And Specifications Guides, including this guide in November 2014. This revamp was completed to enhance the clarity and usefulness of all guides, and to introduce greater consistency of layout and structure across all published methodology guides. Methodologies for market coverage were not changed through this revamp, unless specifically noted in the methodology guide itself.

**August 2012:** Platts changed the FOB Middle East (FOB ME) quote to a netback calculation. This was clarified in the methodology guide in October 2015.

**June 2012:** Platts launched daily Asian LNG derivatives assessments. Platts also launched the sixth half-month cycle for JKM™ on June 1, 2012.

**August 2011:** Platts modified the methodology for the daily spot DES West India assessment from a net-forward calculation which applied the freight cost addition to the FOB Middle

East (FOB ME) assessments, to a stand-alone DES West India assessment on August 1 2012.

**January 2011:** Platts launched on January 17, 2011, daily LNG freight cost assessments for 55 routes.

**June 2010:** Platts launched daily spot Southwest European (SWE) LNG assessments and daily spot Northwest Europe (NWE) LNG assessments on June 28, 2010.

**January 2010:** Platts launched on June 28, 2010, daily spot charter LNG carrier assessments under the benchmark names Asia Pacific LNG Day Rates (APDR) and Atlantic LNG Day Rates (ATDR). In addition, Platts launched a netforward calculation for West India on January 8 2010. Platts also launched daily spot assessments for FOB Middle East (FOB ME) on January 8.

**January 2010:** Platts began publishing a single value assessment for the JKM™ from January 4 2010. Prior to January 4, 2010, Platts published a low-high range of price, indicating a narrow tradable range either side of the mean spot market value, assessed at the close of Asian markets on a typical trading day.