



SparkNWE and SparkSWE Basis and DES LNG Methodology

Version: 2.2

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SparkNWE and SparkSWE DES LNG prices are assessments of physical LNG cargoes delivered into Northwestern European and Southwestern European terminals on a DES basis.

SparkNWE and SparkSWE Basis prices are assessments of the DES LNG differentials to the TTF. They are aligned to the TTF roll mechanism in order to reflect the price format used in the majority of physical LNG transactions into Europe, and to help market participants understand the basis to TTF as it grows in market adoption as a global trading reference price.

The Basis prices are converted to outright DES LNG prices using a transparent and reproducible mechanism combining them with the ICE TTF, the most liquid available TTF price.

Spark Basis Prices:

Eligible firms are asked to submit the following SparkNWE-B and SparkSWE-B prices:

- **SparkNWE-B-1H:** price assessment of cargo deliveries for the 1st half (1st to 15th) of the front month (M+1), ie TTF front month, as a differential to the ICE TTF front month
- **SparkNWE-B-2H:** price assessment of cargo deliveries for the 2nd half (16th to last day of the month) of the front month (M+1), ie TTF front month, as a differential to the ICE TTF front month
- **SparkSWE-B-F:** price assessment of cargo deliveries for front month (M+1), ie TTF front month, as a differential to the ICE TTF front month
- **SparkNWE-B-Fo / SparkSWE-B-Fo*:** M+2 to M+12 month forward curve covering deliveries for specific calendar months

SparkNWE/SWE Basis prices will be released shortly after the assessment window closes at 16:30 on Spark publication dates.

Spark DES LNG Prices:

- **SparkNWE-F / SparkNWE-Fo*:** SparkNWE-B + ICE TTF in \$/MMBtu for the relevant month
- **SparkSWE-F / SparkSWE-Fo*:** SparkSWE-B + ICE TTF in \$/MMBtu for the relevant month

where:

ICE TTF: the end of day settlement price of the Dutch TTF Gas Base Load Futures (PCC:TFM) as published by ICE Endex for the relevant publication date.

SparkNWE DES LNG prices will be released daily following the publication of the ICE TTF prices using the latest SparkNWE-B-F / SparkNWE-B-Fo prices.

*These prices are not relevant to the benchmark SparkNWE-B-F and SparkSWE-B-F prices



SparkSWE DES LNG F prices will be released every Tuesday and Thursday following the publication of the ICE TTF prices for that day using the latest SparkSWE-B-F.

SparkSWE DES LNG Fo prices will be released weekly every Thursday following the publication of the ICE TTF prices for that day using the latest SparkSWE-B-Fo.

Submission Assumptions:

Indications of value, bids and offers are to be submitted during the submission windows, which is from 1430-1630 London time on assessment days to align to a European end of day assessment. Spark will accept submissions in advance of the window from eligible submitters who are unable to submit during the window, and the submitter will have the ability to change their submission up until the time the window closes. The window can be extended for late submissions for a maximum of 3 periods of 30 minutes.

Contract Name	Contract Type	Assessment Frequency	Discharge Volume	Delivery Location	Delivery Period	Currency	UOM
SparkNWE-B-1H /SparkNWE-B-2H	Spot	Daily (1430-1630 London time)	3.2-3.8 Tbtu (+/-2-5%)	NWE Range	1H: 1st to 15th of M+1 2H: 16th to end of month of M+1 F: M+1	USD	\$/mmbtu
SparkSWE-B-F	Spot	Tues/Thurs (1430-1630 London time)	3.2-3.8 Tbtu (+/-2-5%)	SWE Range	1H: 1st to 15th of M+1 2H: 16th to end of month of M+1 F: M+1	USD	\$/mmbtu
SparkNWE/ SWE-B-Fo	Forwards	Thurs (1430-1630 London time)	3.2-3.8 Tbtu (+/-2-5%)	NWE/SW E Range	Specific Forward Month, M+2 to M+12	USD	\$/mmbtu

• Key Specifications:

- Unit: US dollars per MMBtu (\$/mmbtu)
- TTF Indexation: Basis to the TTF, Where "ICE TTF" is the arithmetic mean of the settlement prices as published by ICE Endex for the Dutch TTF Gas Base Load Futures (TFM) for the balance of the Trading Days during the period that the delivery month is the front month starting from the next business day, except on the final business day of the period that the delivery month is the front month when it will start on the current business day. Every settlement price is converted from EURO to United State dollar (USD) using the WM/Refinitiv Closing EURUSD Spot Rates as published by Refinitiv at 4 pm UK time on the day the settlement price was published by the ICE Endex. When there is no WM/Refinitiv Closing EURUSD Spot Rate published, the next previous WM/Refinitiv Closing EURUSD Spot Rate as published by Refinitiv will be used for settlement purposes.
- Discharge Volume: 3,200,000 to 3,800,000 MMBtu +/- 2-5%
- Delivery terms: DES at the respective LNG terminal
- Discharge Location:
 - NWE shall include the following LNG receiving terminals:

- Gate terminal
- Isle of Grain terminal
- Zeebrugge terminal
- Dragon terminal
- South Hook terminal
- Dunkerque terminal
- La Havre terminal
- Montoir terminal
- EemsEnergy terminal
- Wilhelmshaven 1 terminal
- Brunsbuttel terminal
- Stade terminal
- Deutsche Ostsee terminal
- Mugardos terminal
- Bilbao terminal
- SWE shall include the following LNG receiving terminals:
 - Barcelona terminal
 - Huelva terminal
 - Cartagena terminal
 - Sagunto terminal
 - El Musel terminal
 - Sines terminal
 - Fos Cavaou terminal
- Discharge Terminal Nomination: Single terminal if the transaction date is within 15 days of the start of the delivery window, otherwise a range of terminals and buyer nominates single terminal no later than 15 days prior to delivery window.
- Loading location: no restrictions along as delivered cargo conforms with wider methodology and quality requirements.
- LNG vessel: 135,000-185,000m³
- Quality range: In line with specifications for the relevant terminal.
- Delivery Window: 1 day if the transaction date is within 20 days of the start of the delivery window, otherwise 1-3 days narrowed to 1 day by buyer no later than 20 days prior to the delivery window.

Excluded transactions: Cargoes that would normally be considered distressed (for example where a buyer/seller needs to transact less than 5 days prior to delivery) should be considered as non-representative.

Spark may engage with submitters to ensure submissions align to Spark specifications. Following engagement with a submitter, if Spark believes a submission does not align to the specifications, Spark may remove this submission from the calculation given internal approval from at least two Spark Senior Assessors.

SparkNWE-B-1H, SparkNWE-B-2H, SparkNWE-B-F Assessment Process

The SparkNWE assessments follow a transparent methodology based on submitted data from physical LNG market participants active in the relevant region, with the process monitored and checked throughout by Spark Senior Assessors.



Submissions can be made via the Spark platform or directly to Spark Senior Assessors via instant message, email and by phone call. Spark Senior Assessors will have the ability to challenge submissions and ask for further justifications from submitters, and to remove submissions from the assessment if a valid justification is not assessed to have been provided. Senior Assessors have the ability to use their judgement to interpret submissions that are not in the exact format required, for example if a range is submitted rather than an exact number.

Eligible firms are asked to submit the following data in the following order of preference, based on availability:

- Directly Involved Transactions: To be submitted at any time. These are transactions that the submitter is directly involved in, either as the buyer, seller, or broker. Directly Involved transactions can only be included in the assessment calculation once verified and approved by a Spark senior assessor.
- Bids, offers: To be submitted during the submission window. The best bid and offer as heard in the market, or shown out to the market from the submitting firm.
- Indications of value: To be submitted during the submission window. Preference should be given for confirmed transactions and firm bids and offers when eligible submitters provide their assessments of value.

Outliers will be removed from the eligible submissions of indications of value and bids and offers as follows:

- Removal of top and bottom 10% of submissions (rounded to the nearest submission) after converting bid/offers to mids.

Following submission, transactions will be marked with the following categorisation and additional information:

- Verified: If the transaction has been verified and approved by a Spark Senior assessor.
- Index Spec: If the transaction falls within the specifications for the SparkNWE-B-F or SparkSWE-B-F assessments.
- Normalised price: For SparkNWE transactions the transaction price will be normalised for the delivery date according to the within-month price slope from the 1H and 2H price data from the submission window. The price will not be normalised for any other specification.

Following outlier removal, and transaction categorisation and normalisation, the SparkNWE assessments will be formed using the following logic:

- Bids and offers will be converted to mids and weighed at twice the weight of indications of value to represent the higher value of data.
- The final assessment will be 50% the weighted average of the remaining eligible submissions and 50% the average of the normalised prices of all within spec, verified transactions submitted on the day of the assessment. The SparkNWE-B-F assessment will be calculated as the simple average of the SparkNWE-B-1H and SparkNWE-B-2H assessments, rounded to the nearest \$0.005.



Rounding occurs at various stages in the calculation to nearest \$0.005. Full transparency is provided on the number of submissions of transactions, indications of value, bids and offers, the ranges of prices submitted for each and the number of outliers removed.

SparkSWE-B-F, SparkNWE-B-Fo, SparkSWE-B-Fo Assessment Process

Due to lower levels of liquidity for LNG cargoes into SWE and for forward dated LNG cargoes into NWE, Spark follows the below assessment process for SparkSWE-B-F, SparkNWE-B-Fo and SparkSWE-B-Fo assessments.

Eligible firms are asked to submit the following data during the submission window:

- Indications of value: preference should be given for confirmed transactions and firm bids and offers when eligible submitters provide their assessments of value.

Following the submission window, the assessments will be formed using the following logic:

- The final assessment will be the average of received submissions. The final value will be rounded to the nearest \$0.005.

Who can submit data to the Spark Basis assessment?

Only recognised, eligible LNG players form part of Spark Basis to ensure robust and accurate data is forming the price assessments. Inputs are received from a variety of market participants who are actively involved in LNG cargo transactions within the assessed region.

Assessment Dates and Roll Dates:

- The Spark DES LNG and Basis assessments are aligned to the ICE TTF contracts schedule and therefore the final assessment for a delivery month will be no later than two Business Days prior to the first calendar day of the delivery month.

Raising challenges of Spark assessments:

Spark assessments can be challenged from within the platform via the challenge button.

Holiday Days:

Spark follows the UK Public Holiday calendar. There will be no submissions on a UK Public Holiday unless clearly communicated by Spark.

Governance and Compliance

Spark believes that commodity pricing should be based on direct and independent submissions from approved, active market players. Spark delivers this via an intuitive, easily accessible platform, with Spark price assessments (the “**Spark Prices**”) based on a clear and fit-for-purpose methodology.



Spark advocates for data-driven assessments that are not susceptible to individual judgement or bias. The Spark approach, which sets us apart from traditional PRAs, is designed to produce high quality, robust price assessments in both liquid and illiquid markets. Spark endeavours to standardise our approach to data collection and price formation wherever possible, whilst allowing for market-specific methodologies when required. This allows Spark to:

- Produce reliable, fair, data-driven and representative price assessments;
- Provide mechanisms aimed at preventing market manipulation;
- Provide greater levels of transparency in illiquid markets by providing a growing amount of anonymised, relevant data; and
- Avoid selective reporting where possible whilst recognising industry dynamics and lack of liquidity.

Spark Prices are automatically calculated based on the methodology outlined in this document. Market participants can directly enter price information on the platform, removing the need for journalists and assessors to gather data. This allows Spark's senior assessors to focus on identifying anomalous data, and ensuring the platform operates as expected. By following a data-centric method that relies predominantly on technology, Spark removes human error and judgement as much as possible from the Spark Prices.

In order to ensure Spark provides reliable, fair and representative price assessments, at least 3 submissions from the approved and permissioned eligible submitters are required in order to calculate a Spark Basis Price. In the event that threshold is not met, Spark will use the prior day Spark Basis price and the Spark DES LNG price will be released with the updated ICE TTF price.

Revision History

Version	Date published	Changes
1.0	May 2021	- Spark Basis launched
1.1	August 2021	- Incorporation of M+1 contract and alignment of F contract to TTF front month
1.2	January 2022	- Addition of outright DES LNG prices incorporating the ICE TTF contract prices
1.3	March 2022	- Minor wording changes
1.4	November 2022	- Updated SparkNWE and SparkSWE DES LNG conversion to specify the TTF price used as the ICE TFM - SparkNWE Assessment Process to include removal of outliers and submissions of bids and offers. - Updated SparkNWE assessment to reflect change from front month assessment to front month 1H and 2H assessments

		- Updated for twice per week publication for SparkNWE-F and SparkSWE-B-F - Updated for inclusion of reported, verified transactions - Updated Holiday calendar
1.5	January 2023	- Added Eems Energy LNG terminal, Wilhelmshaven LNG FSRU and Deutsche Ostsee LNG terminal to the terminals included in the NWE assessment - Updated Spark senior assessor transaction approval and verification process
1.6	June 2023	- Formatting and minor wording changes throughout
1.7	September 2023	- Updated for daily publication for SparkNWE front month - Updated Cargo specifications in line with the market consultation
1.8	October 2023	- Clarification on Senior Assessor challenge process and submission format options - Updated holiday schedule
1.9	July 2024	- Clarification of ability for Spark to receive submissions in advance of window opening - Update of active NWE and SWE LNG terminals
2.0	May 2025	- Annual review, no material changes, only format
2.1	November 2025	- Annual review, no changes
2.2	May 2026	- Clarified publication schedule for SparkNWE DES LNG prices