

January 2024

LNG Special Report: JKM Forwards

Platts JKM liquefied natural gas (LNG) benchmark reflects the spot market value of cargoes delivered ex-ship (DES) into Northeast Asia, which encompass the majority of global LNG demand.

Since its inception in February 2009, the benchmark has undergone various evolutions in its methodology and specifications as the LNG market has developed.

Over the last few years, there have been several market factors that have led to an evolution of market infrastructure and trading norms, leading to greater commoditization of the LNG sector.

These shifts include the increasing number and sophistication of trading entities, growing flexibility in spot and long-term contracts, a larger fleet of LNG carriers globally, global production capacity ramping up, as well as improved compatibility between vessels, liquefaction plants and receiving terminals.

With the commoditization of the LNG trade, comes a standardization of contractual terms, innovation of trading instruments and an extension of the cargo trading horizon.

Platts, part of S&P Global Commodity Insights, received a significant amount of industry feedback regarding demand for pricing transparency for the physical forward value of LNG cargoes delivered in Northeast Asia.

The feedback culminated in a market-wide consultation and industry proposal, leading to the announcement of the launch of the JKM LNG Forwards price assessment – effective Jan. 16, 2024.

Through JKM Forwards, a full physical cargo of LNG will be delivered if a company trades a defined number of physical forwards with another company in one direction (either buy or sell) for the same delivery period.

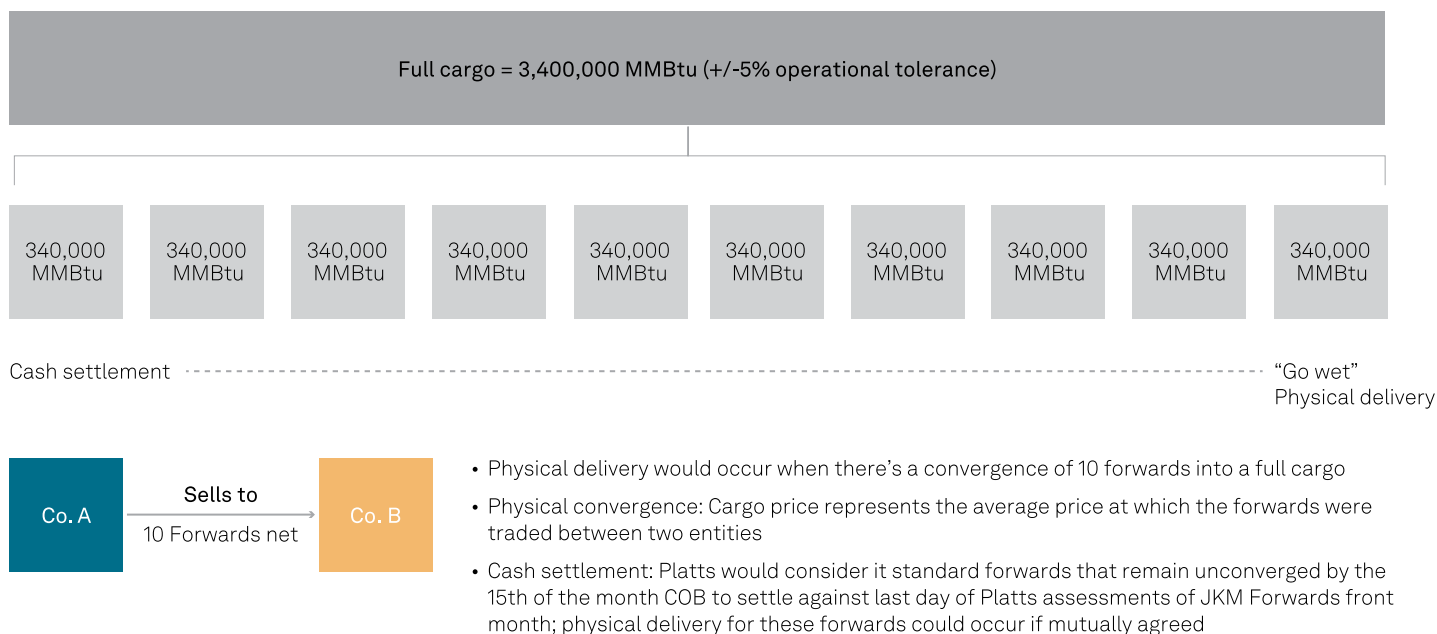
This paper discusses the rationale behind the launch of these price assessments, its effect on LNG benchmarks, and what it says about the evolution of the LNG market.

Forwards by another name

Similar mechanisms to JKM Forwards have existed in crude oil cargo markets in Asia and Europe for decades.

These markets were adopted by the industry as the associated crude oil benchmarks went on a similar

Physical convergence: 10 JKM Forwards



Source: S&P Global Commodity Insights

journey to that of LNG – involving contractual and trade standardization, followed by market-based indexation, and increasing derivatives-based risk management.

For both Platts Cash BFOE (Brent) and Platts Dubai, the mechanisms were developed when market participants started to agree more forward deals, which lead to a ramp-up of trading in longer-dated contracts in the forwards markets.

These forward markets lifted entry-barriers by allowing participants to express market value for smaller virtual parcels that were homogenous in nature.

These forwards, known as partials or cash markets, are intrinsically linked to physical markets due to the desire to converge into a physical cargo (or to “go wet” as industry parlance would have it).

For the Platts Dubai partials mechanism launched in 2004, Platts considers bids, offers and trades for partial cargoes of crude oil, reported in lot sizes of 25,000 barrels, with physical convergence at 500,000 barrels, or 20 partials, to a full cargo. An all-time high of 6,234 partials traded in the Middle East crude MOC in 2023, surpassing the previous high of 5,429 partials traded in 2015.

Cash BFOE assessments were first launched in 1986, with Platts considering bids, offers, and trades for partial cargoes of crude oil, which are today reported in lot sizes of 100,000 barrels, with physical convergence at 700,000 barrels, or seven partials, to a full cargo.

Standardisation of DES Northeast Asia LNG terms

Without the standardization in trade terms witnessed over the last half-decade in LNG, trade in forwards would be difficult, because the physical convergence would be followed by significant negotiation between parties to agree on terms.

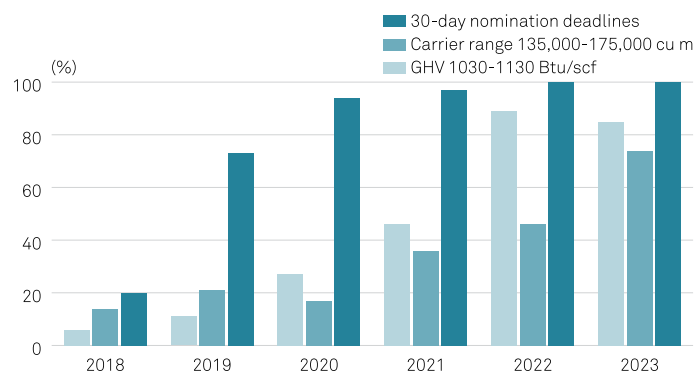
An LNG cargo trade standard is a pre-requisite for the formation of a Forwards mechanism, given the convergence requirement of a deliverable physical standard.

The standardization of trading terms for Asia-Pacific LNG cargoes have helped to boost efficiency and trading activity-- in a market expected to expand rapidly in trade volume, with liquefaction capacity to rise from 459 million mt/year in 2023, to 701 million mt/year in 2030.

While standard Master Sales and Purchase Agreements (MSPA) govern the bulk of the deal terms including compliance provisions and liabilities, the key trading variables of a spot trade like price, quantity, calorific value, are typically agreed in the Confirmation Notice—a contract containing commercial terms and any deviations from the MSPA.

These trading terms can vary from deal to deal. But increasing transparency and cargo churn has engendered greater consistency and visibility of a trading standard for delivered Northeast Asia LNG cargoes.

Standardization of APAC LNG MOC bid, offer and trade terms



Source: S&P Global Commodity Insights

In recent years, the terms of spot trade have converged as a result of growing liquidity and flexibility. For example, the nomination deadlines for alternate LNG vessel, discharge port and loading port have coalesced around the 30-day mark prior to the first day of the initial delivery window. The standard cargo quantity, Gross Heating Value (GHV) specifications, and delivery hub have standardized to 3.4 TBtu (+/-5% operational tolerance), 1030-1130 Btu/Scf, and DES JKTC (Japan-South Korea-Taiwan-China) respectively.

One of the first significant steps towards greater standardization in this market was Platts publication of standardized nomination terms in 2018. From that point onwards, the Northeast Asia market has coalesced around these terms in ever greater frequency.

Since then, standardization has gathered pace, with only bids and offers with standard nomination deadlines for ports and vessel reflected in the Platts Market-on-Close process, from December 2021.

The number of MOC bids, offers and trades reflecting standard cargo specifications of 1030-1130 Btu/Scf, DES JKTC and vessel size of 135,000-175,000 m³ have also risen to above 70% of all data published in 2023.

Evolving LNG market conditions

Industry participants have also identified the impact of fast-changing LNG market conditions could have on spot market activity as a key reason for Forwards assessments.

In 2022, physical and financial trading activity in Asia Pacific LNG markets dropped to the lowest levels since 2020 on the back of higher cargo price levels, increased financial exchange margins, and swing in trade flows from Asia to Europe.

While activity levels have since recovered, particularly in the second half of 2023, there remains ongoing market concerns around how temporal changes in LNG cargo prices and trade flows could affect observable trade and pricing data.

JKM Forwards could aid in providing consistent levels of market activity, which would be dependent on the

underlying physical market conditions due to the smaller lot sizes, and therefore monetary values involved in each trade, and the option for financial settlement in the absence of a physical convergence.

A physical convergence occurs as soon as a net long or short position of 10 JKM Forwards of 340,000 MMBtu each with a single counterpart for the same delivery month is reached.

Furthermore, the rising trend of indexation has strengthened the need for increased transparency over the price differentials between physical cargoes and the underlying LNG monthly index averages, also known as cash differentials.

End-users, producers, off-takers from LNG projects have issued tenders and concluded bilateral trades, buy or sell, much more actively in 2023 for delivery periods further out than the most traded 30-45 days forward spot cargo delivery horizon.

Most of these forward trades are linked to monthly averages of LNG benchmarks like JKM, rather than on a flat price basis.

As the use of market-based LNG pricing rises, and more short-term volume is traded more than 45 days out, there is a need for the additional pricing transparency for Forwards, which would therefore complement the existing data published via the MOC process for full physical cargoes and cash-settled derivatives.

LNG trading innovation

The LNG trade has been a market that is constantly innovating and exploring new instruments to bolster the efficiency of pricing and hedging physical volumes.

Over the past year, contracts like JKM Balance Month (BalMo)-next day, Exchange of Futures for Physical (EFP) contracts, Trade at Settlement (TAS) Contracts, have taken off due to market demand to manage risks and provide further alternatives to conventional trading or hedging options.

Indexation for spot and term cargoes linked to the JKM has traditionally been done on monthly average prices. But physical deals have been increasingly agreed on a BalMo-next day basis as physical assessments for the current month start to be published.

Furthermore, the first-ever JKM EFP derivative traded on Oct. 2, with trades for about 25 LNG cargoes equivalent, extending 3 years forward.

Trading activity has risen in the futures market as well in 2023, with the Intercontinental Exchange recording an uptrend in both open interest, as well as traded volumes.

JKM futures volume cleared over exchanges in 2023 totaled 122.4 million mt, up by 12.5% from a year ago.

On the derivatives MOC process, 2023 was also the most active year in terms of JKM traded volume, with about 5.3 million mt equivalent changing hands, almost seven times the volume recorded in 2022.

The growth in trade of a variety of different products, from BalMo to EFP to TAS, highlights the industry's appetite to explore and innovate new instruments.

JKM Forwards launch

The launch on January 16, 2024, comes after over a year of industry consultation and discussion.

Platts has launched instruments for the Platts Editorial Window, or eWindow, communication tool for JKM Forwards for the two JKM Forwards months after the JKM full physical cargo front-month.

More details can be found in this subscriber note:

<https://www.spglobal.com/commodityinsights/en/our-methodology/subscriber-notes/011624-platts-launches-jkm-forwards-price-assessments-on-jan-16>

The high level of standardization of contractual terms in Asian LNG spot markets has enabled this launch as terms of physical cargo deliveries upon convergence will be aligned with existing JKM standard terms.

From January 16, 2024 to February 15, 2024, Platts will publish bids and offers for April 2024, for the promptest Forwards month, from companies that have completed the MOC participation review for JKM Forwards.

The existing MOC assessment processes for Platts JKM full physical cargo and cash-settled derivatives in APAC remain unchanged with the launch of JKM Forwards. Full cargo indications in adherence with Platts JKM standard terms with dated delivery windows will continue to take priority in the assessment process.

JKM LNG standard terms

Specifications	JKM standard terms
Delivery Window	3 days long; buyer to narrow to a 1-DDW 30 days prior to initial delivery window
Discharge Location	Delivery into Japan, South Korea, Taiwan and China, Delivery port nomination latest by 30 days prior to initial delivery window. Substitution within the same country latest by 15 days prior to final one-day delivery window
Loading Location	Nominate and substitute loading port latest by 30 days prior to initial delivery window
Quality	JKM reflects cargoes with GHV of 1030-1130 Btu/Scf, Ethane no more than 10%/mol, Sulphur no more than 5mg/NM3
Quantity	Specific volume of 3.4 TBtu; +/-5% Optol
LNG Vessel	Vessel size range of 135,000-175,000m3; may substitute delivery vessel latest by 30 days prior to initial delivery window

Source: S&P Global Commodity Insights

Platts will consider JKM Forwards bids, offers and trades in the absence of competitive full physical cargo indications in the JKM full physical cargo MOC process.

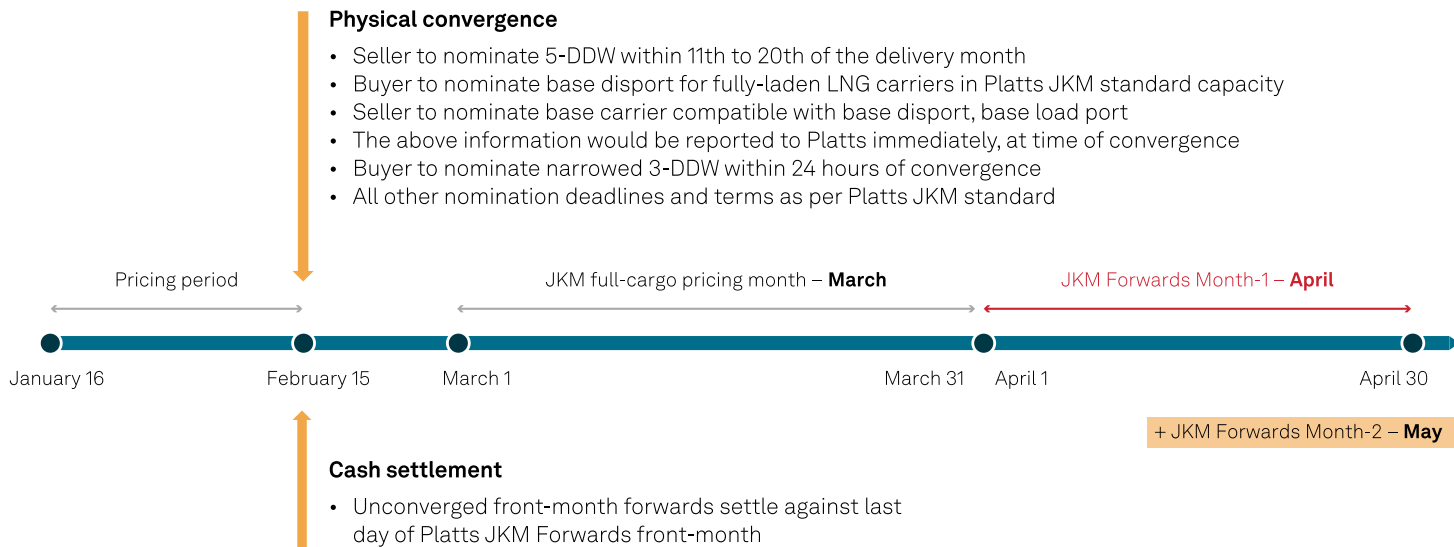
LNG markets started to commoditize at pace around a decade ago due in part to sudden changes in demand for the fuel in Japan, followed shortly afterwards by the flow of US LNG supply to the world on a flexible basis and the policy

shift in China to increase gas consumption in the economy.

To have a fully standardized forwards market developing in LNG on the heels of this process of commoditization is not only testament to technological changes that have enabled swifter market evolution in recent years, but also of the industry’s desire to have a more efficient and transparent LNG cargo trade in the world’s largest demand basin.

JKM Forwards Assessment Timeline

(January 16, 2024)



Source: S&P Global Commodity Insights

(continued on next page)

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Amidst all these changes, the JKM benchmark continues to show resilience in the face of shifting trade patterns and market disruptions. The launch of a forwards market will include more transparent, forward data into the JKM physical ecosystem, and

marks an important step in the benchmark's growth journey.

For questions on the LNG Special Report: JKM Forwards please contact: LNGeditorialteam@spglobal.com.