Platts JKM and LNG Spot Contracts

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Platts daily Asian spot LNG price assessment, the Japan Korea Marker, is used as the outright pricing basis for up to two-fifths of the spot LNG deals in the region. About 25% to 40% of Asian spot LNG deals are now priced off the JKM assessment and, if the marker is used in deals, they are priced directly to the JKM rather than in combination with other assessments, according to a prominent industry energy lawyer.

Platts launched the JKM on February 2, 2009. The marker assesses the delivered price of spot LNG to Japan or South Korea on a daily basis.

The two north Asian nations bought almost half the 221 million metric tons (mt) of LNG sold worldwide in 2010. Japan bought more than 30% of the total, at about 70 million mt, while South Korea purchased around 15%, or 33 million mt.

Market observers estimate that spot LNG deals account for up to 20% of LNG volumes produced each year. The trade includes bilateral deals, inter-regional diversions, tenders, chained cargoes and a variety of other transactions. As much as 45 million mt of LNG, equivalent to 750 cargoes a year, is being traded on a spot basis.

The remaining 80% in volume terms is transacted under long-term contracts that typically run from 10 to 30 years. By contrast, in many other energy commodity markets, such as crude oil and naphtha, spot trades typically make up about 10% of the total volumes transacted.

Before Platts started assessing the JKM, spot trades were reported at prices as high as $25/MMBtu at the end of 2008, representing a significant premium over oil-linked term contract prices of $15/MMBtu for shipments sent to Japan at the same time. Long-term LNG contracts in Asia have traditionally been priced against oil, with many in the last few years yielding a delivered LNG price at about 15% of the JCC crude oil price.

The JKM was thus launched to serve an unfulfilled segment of the LNG market that did not have a clearly defined pricing mechanism, while providing market participants with an index that would allow them to trade LNG shipments at prices based purely on the fundamentals of the LNG market. The new index enabled the nascent spot LNG market to break away from the industry’s long-established links to oil production and prices that arguably are no longer relevant to LNG.

The JKM began to gain traction in 2010 when Taiwan’s CPC Corporation
awarded some spot buy tenders for cargoes delivered across that summer at prices matching or close to the JKM values for the same month of delivery.

**Matching Assessments to Market Prices**

Platts assesses the JKM for physical LNG cargoes delivered to Japan and South Korea in the third, fourth and fifth half-month cycles forward from the date of trade. For example on January 3, the first working day of 2012, Platts assessed cargoes for delivery in H1 February, H2 February and H1 March, with the JKM assessment being the average of the two half-month cycles that comprise the first full month of delivery. On January 3, the JKM month assessed was thus February 2012.

In the case of Japan, the country’s customs authorities release data regarding LNG imports almost three months after Platts completes the assessment for a particular month. In the example of February 2012, Japanese customs published the data for LNG shipments delivered to Japan at the end of March. Platts assessed the February JKM from December 16, 2011 through January 15, and then rolled over to the March JKM on January 16.

An analysis of JKM spot monthly average assessments and Japan customs data for the past three years showed a high correlation of spot cargo prices matching the published JKM values for the same month of delivery.

Prices of spot cargoes from Peru, Yemen, Trinidad & Tobago, Algeria, and Norway coincided closely with JKM values for the same physical month of delivery. Peru LNG, Yemen LNG, Trinidad’s Atlantic LNG, Norway’s Snohvit LNG and Algeria’s Sonatrach do not have any term contracts with Japanese buyers, limiting their commercial opportunities to the spot market.

Nigeria LNG does have offtakers such as the UK-based BG and the Anglo-Dutch Shell who have term contracts with Japanese buyers, but the project held several spot sell tenders in 2011 for cargoes that were originally meant for delivery to Atlantic destinations.

Japan lost 12 gigawatts of nuclear plant in the immediate aftermath of the March 11, 2011 earthquake and

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**1. JKM vs Japan.**

Source: Platts
tsunami and replaced much of the reactor output with gas-fired capacity, resulting in additional spot demand of 15 cargoes every month. Some nuclear plants located close to earthquake fault lines were shut down from June 2011, while facilities that were shut for maintenance before the disaster and subsequently were not allowed to restart due to safety concerns.

By the end of 2011 this left Japan with 7.98 GW, or 16.3% of the pre-crisis nuclear capacity of 48.96 GW at 54 reactors. By May 2012 this capacity had been shuttered too, with only two reactors allowed to restart by September 2012, leaving a very large gap to be filled with oil and LNG.

As Japanese power generation demand for LNG increased, the JKM commanded a premium of more than $8/MMBtu over UK National Balancing Point gas hub prices on several occasions. Japanese buyers purchased spot cargoes from Nigeria at or close to the JKM values for the same month of delivery.

Japan also bought spot cargoes from its term LNG suppliers in Russia, Qatar, Indonesia and Australia. However, these are not considered in this analysis as the spot prices and shipments were mingled within the larger contract volumes and values.

In South Korea an analysis of JKM spot monthly average assessments and South Korean customs data from late 2009 through end 2011 similarly revealed a high incidence of spot cargo prices matching the published JKM values for the same month of delivery. The South Korean customs authorities publish the data for imported LNG cargoes two months after Platts completes the assessment for a particular month of delivery.

Prices of 28 spot cargoes from Nigeria, Peru, Norway, Algeria and the US mostly matched JKM values for the same physical month of delivery. Nigeria LNG, Peru LNG, Snohvit LNG and Sonatrach do not have term contracts with the South Korean buyers—Korea Gas Corporation, POSCO, SK E&S and GS Caltex—limiting their commercial opportunities to the spot market.

Five reloaded LNG cargoes from Louisiana’s Sabine Pass terminal in the US were delivered to South Korea at or close to the JKM values for the same month of delivery.

Spot LNG buying activity in South

2. JKM vs Korea.
Korea was especially intensive during the winter months of late 2009 and early 2010. Thirteen cargoes from Nigeria, the US, Peru and Norway were delivered to the country as freezing temperatures swept across north Asia.

This was repeated during the winter of late 2010 and early 2011. South Korean buyers purchased several spot cargoes from Nigeria, the US, Peru and Norway matching the JKM values for the same month of delivery.

Thus Nigerian cargoes sent to South Korea in November 2010 and February 2011 at $9.25/MMBtu and $9.84/MMBtu, respectively were virtually an exact match to the assessed JKM of $9.25/MMBtu and $9.85/MMBtu for the same periods.

In December 2010, South Korea received a Norwegian cargo at $9.49/MMBtu, priced only slightly below the December average JKM assessment of $9.55/MMBtu.

In Taiwan and China Platts includes a $0.1/MMBtu freight discount from the JKM for cargoes delivered to the two jurisdictions, as both Taiwan and China are slightly closer to LNG producers in southeast Asia, the Middle East and Australia. Despite the discount, Taiwanese and Chinese buyers have paid prices close to or matching the JKM over the past three years to secure shipments.

Taiwan with a 5% share and China with 4% of the market together accounted for purchases of almost 20 million mt of global LNG supplies in 2010. Taiwan’s Directorate General of Customs publishes its LNG import data two months after Platts completes the assessment for a particular month of delivery, while China releases the same information three months later.

Taiwan’s CPC issued several buy tenders for more than a dozen cargoes delivered across the summer months of April through August 2010. Customs data from the country revealed that cargoes from Trinidad & Tobago, Russia, the United Arab Emirates and Norway were transacted at or close to JKM values for the same physical month of delivery.

Prior to the country’s peak summer demand of 2010, CPC bought two Russian cargoes delivered in October and November 2009 at prices of $5.14/MMBtu
liquefied natural gas

and $5.43/MMBtu, respectively. These lined up with JKM monthly average values of $5.13/MMBtu and $5.39/MMBtu for the same periods.

China imported cargoes across a three-year period from the UAE, Peru, Belgium, Russia, the US and Oman at values matching or close to JKM values for the same physical month of delivery. Neither of the country’s state-owned buyers, the China National Offshore Oil Corporation and PetroChina, have long-term supply contracts with the UAE’s Adgas, Peru LNG, Oman’s Oman LNG and Qalhat LNG projects or Russia’s Sakhalin 2 facility.

Two reloaded spot LNG cargoes from Louisiana’s Sabine Pass terminal in the US and one reloaded spot shipment from Belgium’s Zeebrugge terminal were also sold to China.

Use of JKM in Spot and Term Contracts

An upcoming liquefaction project, which would serve Asia, would price all its commissioning cargoes directly to the JKM, according to the earlier-cited industry energy lawyer. Two liquefaction projects are coming online in 2012—Angola LNG’s 5.3 million mt/year facility in Angola and Woodside Petroleum’s 4.8 million mt/year Pluto project in western Australia.

Moreover, Woodside Petroleum’s existing North West Shelf (NWS) LNG project introduced the JKM as one of its pricing bases in June 2012 for the first time. It tendered three LNG cargoes for delivery in August, September and late October to early November.

Previous NWS sell tenders have not listed JKM before, according to a Japanese trader, although buyers still had the final decision on which pricing basis they wanted to use.

Bidders into the NWS tender had the option of bidding on the basis of Platts Asian Dated Brent, the JKM or a fixed price, a Singapore-based trader said. The use of JKM in sell tenders could be not only the first for NWS, but also a first for the LNG industry. “This is the first time I have seen JKM in an LNG tender document. It has never happened before,” the Singapore-based trader said.

“Besides crude oil, [the UK’s] National Balancing Point and [NYMEX] Henry Hub, this is probably the first time I’m
hearing JKM being quoted in a tender,” Tony Regan, principal consultant at Singapore-based Tri-Zen International, said.

In another indication of its increasing usage, Japan’s Chubu Electric Power Company signed a sales and purchase agreement with BP Singapore in February 2012 for the supply of around eight million mt of LNG over a 16-year period on an ex-ship delivery basis. The contract uses JKM spot prices for up to 10% of supply volumes.

Deliveries will start from the Japanese fiscal year ending March 2013 with the LNG being sourced from BP’s global LNG portfolio. A Chubu Electric spokesman declined to comment on any details of the term contract as part of its confidentiality agreement with BP, while a BP spokesman in London declined to comment on “commercially confidential information” when contacted by Platts.

Sources said the deal could be the first time Chubu Electric and BP have used spot LNG prices in their mid-term contracts. Market sources also said the deal includes a price linkage to the JKM for 5-10% of the Nagoya-based power utility’s lifting volumes.

A further indication was provided by Thailand’s PTT, which concluded a one-year, 500,000-mt LNG supply agreement in 2011 with Spain’s Repsol. The contract, which started delivery in July 2011, was concluded using a formula of the JKM plus 50 US cents per MMBtu, various sources said.

The JKM in Financial Transactions

The first financial LNG swap settled against the JKM was done by CitiBank with an international oil major in January 2011. Several more such JKM swaps have since been concluded by Citi with various other counterparties.

The LNG swaps have been transacted using small parcels in the range of 100,000 to 500,000 MMBtu. A full-sized LNG cargo has 3.5 million MMBtu.

Platts started assessing JKM swaps assessments for three forward months from June 1, 2012. And the CME Group and ICE started to clear JKM swaps from August 13 and August 28, respectively.

Besides north Asia, the JKM has had an impact on spot prices in India, which bought around 5% [11 million mt] of the world’s LNG in 2010. Before Platts launched the DES West India assessment on August 1, 2011, buyers and sellers in India would typically apply a discount of around $2/MMBtu to the JKM for their spot LNG transactions.

5. JKM monthly average.

Source: Platts