EXPANSION AND EVOLUTION OF THE ASIA PACIFIC LNG MARKETS

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ABSTRACT

The 2011 great earthquake and ensuing nuclear crisis in Japan continue to have profound impacts on the nation's global LNG business.

Portfolio players in the LNG market are enjoying advantageous positions by having flexibility in supply volumes and outlets. Many of them procure less expensive LNG originally destined to the Atlantic basin and sell it into the Asia Pacific markets at much higher prices.

In turn, electric power and gas companies have been criticized in Japan for buying allegedly the most expensive LNG in the world, especially after increases of imports in 2011 and wider public awareness of less expensive gas in other regions of the world. The Japanese LNG buyers are often frustrated by the huge gaps between oil-linked long-term contract prices and hub-based spot gas prices in the Atlantic basin.

At the same time, market opportunities vacated by the lost nuclear power present better chances to LNG project sponsors in the Asia Pacific basin to proceed earlier than otherwise. Buyers may be able to place themselves in a better position by having larger demand from the end-use market. They may also try to consolidate their bargaining positions with alliances between buyers of different sizes and regions.

Japanese LNG buyers are increasingly required to devise ways to procure LNG at more competitive prices - for example through active participation in the whole value chain of the LNG business. Cooperation and alliances with players in the region and around the world to optimise business will be more crucial in the future.

Contents of this paper

Introduction
1. Changing market environments - expansion of flexible supply
2. LNG prices on the rise along with volumes
3. The nature of the Asian and Japanese premiums
4. Focal points in the international LNG and natural gas markets
5. LNG markets to be balanced
6. Expansion of LNG markets in different regions, especially in the Asia Pacific region
7. Increasing LNG supply
8. Measures to procure more competitive LNG supply
9. Changing behaviour of LNG players

Conclusion
INTRODUCTION

LNG has attracted a lot of attention in Japan since the nuclear crisis in 2011, as its role has become more important and the burden on the nation's economy to pay the bill has been sharply heavier. General public have been so interested in LNG and energy in general, revolutionary changes of natural gas and LNG businesses, and prospects of future LNG imports. The word "LNG" which used to be a typical industrial jargon two years ago is now a dairy word that appears in conversations between ordinary people.

Developments in the Japan's nuclear power sector - when and how many of the nation's additional reactors will be allowed to restart - also draw attention from the natural gas and LNG industry around the world, as they have profound impacts on the global balance of demand and supply of the fuel.

The longer-term nuclear policy and nuclear project developments (if any) are expected to have huge impacts on future gas demand and newly proposed LNG projects in the Asia Pacific region and the world. Countries and regions around the world are also expected to be affected in terms of their nuclear power development and gas and LNG demand.

As LNG-fired power generation has never been as important as it is today in Japan, demand for LNG has surged. The share of LNG in the power generation sector in the country has grown to 40% from 30% before 2011. The share of natural gas in the nation's primary energy supply surpassed 20% for the first time in the history in fiscal 2011-2012, to be comparable to the energy mix of the world average.

Given the expected more important roles of LNG in years to come, it would be increasingly more important for consuming countries to procure LNG with more competitive pricing terms and in a stable manner.

Assuming risks and limitations of those measures, LNG buyers should develop proactive purchasing strategies to avoid excessive and unnecessary price rise under the current market conditions that appear to be more favourable to LNG sellers. This principle is also the case for LNG buyers in the Asia Pacific region as a whole, as the region's gas demand is expected to grow faster than other regions in the world.

Current major focal points in the natural gas industry include increasing unconventional gas production, especially shale gas production in North America, and accompanying numerous LNG export projects, as well as how much of the resulting potential product can be exported to Japan and other Asian countries.

While the frontrunner among those export ventures - Sabine Pass Liquefaction - has secured long-term lifting commitments from Korean and Indian buyers, following projects at Freeport in Texas, Cameron in Louisiana, and Cove Point in Maryland have tolling arrangements with Japanese companies. Japanese players are also involved in gas development and LNG projects in Western Canada.

While new LNG supply sources in the next decade are expected to come online from Australia, North America, Russia, and East Africa later in the decade, it will be more important for the industry to carefully manage increasing project development costs. Japanese and other Asian players should procure more competitive LNG supply by proactively participating in the total value chain of LNG business in the future.

While Japanese electric power and gas companies buy majority of their LNG under long-term contracts, the companies have increased short-term contract and spot purchases to meet incremental gas demand since 2011, as well as additional cargo deliveries from the existing long-term deals. In particular, there have been noticeable increases of short-term contracts backed by the recent surge in global LNG production capacity.

Profound changes in the market environment since 2011 have affected ways to conduct LNG business significantly and made Japanese players aware of the need to improve the terms and conditions of their purchases. It has become more obvious that portfolio players with flexibility in supply volumes and marketing outlets have the upper hand in negotiations. As Japanese buyers introduce more cargoes from the Atlantic basin - where gas prices have plummeted especially in North America - into the Asia Pacific basin where majority of supply is priced with linkage to oil, price gaps between the global regions have become more apparent since 2011.

Transactions have sometimes fallen through due to lack of available ships even if there is spare LNG production capacity. A value-chain flow from LNG production to electricity supply cannot stand if there is any missing piece in capacity of thermal power plants, LNG storage tanks, or marine facilities.

(Nota) Figures are for calendar years. Short-term LNG trade is defined as LNG traded under contracts with duration of 4 years or less.

(Data source) GIIGNL

**Figure 1: Japan’s Total LNG Imports vs Short-Term Volumes**

Japan’s LNG imports grew by 18% in fiscal 2011-2012\(^1\) to 83.18 million tonnes from 70.56 million tonnes in the previous year. As well as the increased volumes, higher prices inflated amounts paid for the imports.

\(^1\) Japan’s fiscal year ends in March.
Japan paid JPY 5.4 trillion (USD 60 billion) for its LNG imports in the fiscal year, an eye-popping 53% jump from JPY 3.5 trillion in the previous fiscal year. Japan is now the largest importer of LNG, as well as total gas (including both pipeline gas and LNG).

LNG prices were also on the rise in the fiscal year, resulting in a multiplied effect on the total amounts paid that is mentioned in previous paragraph. Asian LNG prices at this moment carry a significant premium over gas prices in the United States and Europe and the gap has been widening since March 2011 - the Asian premium.

If energy security is defined as the ability to secure adequate volumes of energy supply to support people’s daily life, economic and social activities, and national defence and so on, at acceptable prices, the current situation is calling for stronger energy security especially in terms of LNG pricing.

Global LNG trades continued remarkable growth in the calendar year 2011, reaching 240 million tonnes, an 8% increase from the previous year. The growth was driven by Qatar in exports and Japan in imports. In the calendar year 2012, however, the total global trades apparently decreased by a few percentage points based on preliminary estimates as of 25 January 2013.

In addition to the 18% increase in the imported volumes of LNG into the Japanese market in fiscal 2011-2012, the composition of supply sources also changed markedly.

Out of the increase of 12.62 million tonnes, more than half, or 6.58 million tonnes, was delivered from Qatar. While there was an exceptionally notable decrease of supply from Indonesia due to expiry of several long-term supply contracts late in the previous fiscal year (2010-2011), Russia and Malaysia increased deliveries to Japan.

(Note) Figures are for fiscal years (April - March). (Source) Customs statistics of Japan

Figure 2: Japan’s Imports of LNG by Source
In addition to Qatar, West African producers in Nigeria and Equatorial Guinea also supplied remarkably more LNG to Japan. Due to declining LNG import demand in the United States caused by increasing domestic gas production and slowing growth of LNG imports in Europe caused by slumping overall gas demand, some portion of growing supply sources targeting the Atlantic basin markets inevitably became flexible ones to flow to the Asia Pacific LNG markets represented by Japan.

Reported or assessed prices of spot LNG to North Asia rose from USD 10 before the March 2011 earthquake, USD 12 in early May, and USD 16-17 - for November delivery - in September, coming very close to the level of the region's long-term contract prices. Since then spot prices have been in the largely predictable range between USD 12 and USD 18 without any excessive surge. Behind this rather orderly development in prices, there has been significantly relaxed supply and demand balance of LNG, at least before the great earthquake. In addition, as buyers have gradually shifted to short-term contracts or multi-cargo deals from purely spot purchases, spot prices have stabilized.

Therefore, LNG prices as a whole have followed three tracks since early 2011: long-term contract prices; slightly cheaper medium and short term contract prices; and mostly lower and sometimes fluctuating spot prices.

It should be noted that since there are not enough liquidity and transparent trading platforms for spot LNG cargoes, those reported or assessed prices of spot LNG are mostly based on telephone inquiries to players. Some market players respond to those inquiries to provide information. Others are reluctant to respond but are eager to take advantage of available information. Still others simply do not trust the methodology.

2. LNG prices on the rise along with volumes

According to the Japan's customs statistics, the monthly average prices of Japan's LNG imports climbed from USD 13.08 / million Btu in April 2011 to USD 18.04 in July 2012, before going down to USD 15.27 in November. Assuming that the majority, or 70% - 80%, of Japan's LNG imports are delivered under long-term contracts, the average price of the total imports is thought to be very close to the average of imports under long-term contracts. Meanwhile, the rise of assessed spot LNG prices was more significant than that of the average import price, as stated in the previous chapter.

Turning to European and American gas markets from January 2011 to December 2012, prices were USD 2 - 4 at Henry Hub in the United States, USD 8 - 10 at National Balancing Point (NBP) in the United Kingdom, and USD 10 - 14 delivered ex-ship (DES) at LNG import terminals in Spain, which was the largest importer of LNG in Europe until 2010.

Thus Asian LNG prices at this moment carry a significant premium over gas prices in the United States and Europe - the Asian premium.

In addition to the 18% volumetric increase, a 30% increase in the annual average JPY denominated price (a 41% increase in the USD denominated price) over the previous fiscal year contributed to the 53% increase in paid amounts to JPY 5.4 trillion, mentioned in the previous chapter.

The gross payment for the LNG imports represented more than 1% of the nation's GDP for the fiscal year 2011 for the first time in modern history. Foreign currency exchange rates also make differences in the amounts. If the rates in the fiscal year had been similar to those in the fiscal year 2008, the total amount paid for LNG imports would have been as large as JPY 6.5 - 7 trillion.
If volumes imported through pipelines - that China has been steadily increasing and Korea has been mulling to introduce from Russia - are to be delivered to those countries at cheaper prices than LNG, there could be a Japan Premium.

Volumes and paid amounts of LNG imports continued increasing in the half year period from April to September 2012. Japan imported 42 million tonnes, an 8.6% year-on-year, and 24.4% more than two years ago. The yen denominated amount was JPY 3.02 trillion, up 24.3% on the previous year and 74.5% on the comparable period in 2010. The average price of the commodity from April to September 2012 was USD 17.28 / million Btu, significantly higher than USD 15.91 and USD 11.28 in the fiscal years 2011 and 2010, respectively, contributing to the much larger amount in 2012.

3. The Nature of the Asian and Japanese Premiums

Reduction of price levels is urgently needed given the significant impact on the nation's economy. It is also needed to ensure continuing healthy growth of LNG markets and economic expansion in the Asia Pacific region as a whole.

There have been misunderstandings on LNG prices among Japanese general public, such as "Japan's LNG has been always the most expensive in the world," "Prices are high as the gas is delivered in the form of LNG," and "Japan's LNG prices are structurally expensive as they are linked to oil prices." There have been also misinterpretations on the Japanese LNG markets in the global gas industry: "Asian buyers are willing to pay higher prices for security of supply," or "Utility companies can pass incremental costs onto customers." They are all incorrect.

Although oil-linked pricing is often viewed as a structural reason of high prices, Japanese LNG prices were mostly less expensive than gas prices in the United States including those at Henry Hub from 2002 to 2007.

The pricing system linked with oil does not necessarily create the widening gaps, but gas prices in the United States have rapidly come down since 2008 due to the shale gas revolution. The challenge is how to reflect the new reality in the current and future pricing in a timely manner.

Many gas sale and purchase agreements include price re-opening clauses to be activated responding to changing market environments. The question is how to argue effectively that the current situation represents changes in market environments that justify renegotiation of pricing terms in existing contracts. Buyers should make efforts to establish price formulae that could reflect changing environments in the global market, including those in other regional markets and to specifically incorporate such changes as a trigger of renegotiation.

Traditional major LNG consuming centres in the Asia Pacific region are located relatively far from gas producing centres. This may amplify the price gap when there is any, as those consuming centres tend to lack alternative supply sources.
4. Focal Points in the International LNG and Natural Gas Markets

In recent years, even before the earthquake in Japan, the following developments and their implications have drawn attention in the international gas markets:

(1) The dramatic expansion of North American gas production and its effects (potential exports);
(2) Concurrent increase of LNG supply and how fast the global market will absorb it; and
(3) How pricing mechanisms (pipeline gas and LNG) will evolve.

As the increase of North American shale gas production in (1) is often called the "shale gas revolution", the expansion of LNG production in (2) was more than 20% in 2010 and another 8% in 2011, and is worth being called an "LNG revolution". Both expansions were driven by accelerated investment in production projects sanctioned in 2004 - 2005 in anticipation of growing natural gas markets, leading to relaxation of market balance, especially in Europe, and expectation of broader and easier availability of the commodity to more expanded global markets in various regions of the world.

The next question is (3) whether those developments will lead to structural changes in long-term contract pricing in Europe, and in LNG contract pricing the Asia Pacific region.

As LNG production projects have grown larger in size in recent years and environmentally friendly project development is even more important these days, timing of project implementation and its delays, if any, are expected to have greater impacts on the markets.
5. LNG Markets to be Balanced

In the medium term, some LNG production originally planned for the Atlantic region has been diverted to Asia to rebalance supply and demand of gas in Europe. Some gas pricing disputes in the European market have already been settled reflecting the new reality. Consequently, gaps between oil-linked long-term contract prices and hub prices are shrinking.

Looking ahead at the global LNG markets from 2013 to 2015, emergence of new LNG markets in Southeast Asia and other regions, as well as steady growth of demand in existing importing countries in Asia, is expected. On the other hand, as anticipated LNG export capacity addition in the period is expected to be relatively small - from Angola LNG in 2013 and two units in Algeria in 2013 and 2014, as well as some early volumes from new projects in the Asia Pacific region - some experts argue that the supply-demand balance will be tighter in the period.

However, slumping energy demand as a whole caused by the economic downturn in Europe and other regions, and uncertain economic competitiveness of gas in power generation against coal and renewables in Europe, in addition to ongoing uncertainty over nuclear operations in Japan, casts a shadow over the outlook of the LNG and natural gas markets.

Beyond the middle of the decade, with now smaller forecast nuclear power production, there is greater certainty of realisation of long-term LNG demand in the Asia Pacific region, resulting in greater momentums of LNG liquefaction projects in the region.

Many LNG production projects are still competing for limited marketing windows. Buyers with certain volumes of assured demand may be advantageous in negotiating long-term contracts against sellers who must secure sizable demand to sanction projects. Buyers are also expected to move to further enhance their bargaining power, for example, through a buyers’ alliance between a major city gas company and smaller ones.

6. Expansion of LNG Markets in Different Regions, Especially in the Asia Pacific Region

LNG, which used to be considered as the most expensive fossil fuel to be exclusively used in the industrialised OECD nations, has now become an affordable alternative to oil and pipeline gas for emerging economies and is spreading around the world.

Roles of players in the LNG business have also diversified and become more flexible with positions in multiple geographical regions and different elements in the value chain. Geographical divisions between the Asia Pacific and Atlantic have become less distinctive as a result of increasing interaction between them. Locating in the middle of the two regions, producers in the Middle East, especially in Qatar, have been more advantageous as they can supply both regions with ample supply depending on market conditions.

Southeast Asia is a focal point among potential LNG importers in emerging economies, as the region is still an important block of LNG exporters. Thailand and Indonesia started receiving LNG in 2011 and 2012, respectively. Malaysia and Singapore are also expected to follow in 2013. As Indonesia and Malaysia are both major LNG producing and exporting nations, they are expected to direct some of their own LNG production, as well as imports from other LNG producers, to their LNG receiving terminals.
One of the major factors that have enabled rapid expansion of LNG imports around the world in recent years is widely spreading application of floating regasification and/or storage vessels. As shorter time period is needed to install facilities for such systems, several countries in South America and the Middle East had started LNG imports ahead of Indonesia and Malaysia. Additional projects are underway around the world.

By the way, behind the increasing market penetration of natural gas and LNG around the world, there have been increases in estimates of recoverable natural gas resources in the world, thanks to more positive assessments of unconventional gas resources.

The International Energy Agency (IEA) estimated the recoverable resources of conventional natural gas in the world at 469 trillion cubic meters (Tcm) and unconventional natural gas - including tight gas, coalbed methane (CBM), and shale gas - at 328 Tcm in its annual World Energy Outlook 2012 published in November 2012. Comparing to the current world annual natural gas consumption of around 3 Tcm, those estimates of unconventional gas resources indicate promising future of natural gas supply. Among them shale gas represents relatively large 200 Tcm.

However, the figures were actually downgraded from previous ones, partly reflecting the downgrade of figures for the United States made by the Energy Information Administration (EIA). The total amounts were reduced to 790 Tcm (of which 328 Tcm was unconventional gas) from 810 Tcm (of which 406 Tcm was unconventional gas) in the report published in June 2011. As such, assessments of ultimately recoverable resources can be revised significantly.

If and when those ample resources become commercially available in certain regions in the world, they can dramatically change flows of natural gas between different markets, leading to much different outlooks of LNG business.

The global natural gas market shrunk by 3% year-on-year in 2009 after the economic crisis in 2008, followed by a 7% expansion to 3.2 trillion cubic meters in 2010, surpassing the high in 2008 before the economic crisis. LNG trades grew by 25%, or 40 million tonnes to over 220 million tonnes in 2010. Both growth rates were the largest ever. Then in 2011, global gas and LNG productions grew modestly by 0.8% and 8% respectively.

The growth in the last decade has been driven by strong economic performances of emerging economies, relative competitiveness of natural gas against the rising trend of oil prices, and rising expectation of the fuel's continuing competitiveness.

Judging from the overall growth of the global natural gas market, the "shift to natural gas", which was stated as one of the core goals in Japan’s previous basic energy plan, has been a global trend and LNG is playing a crucial role in the trend. As LNG trades routes have been diversifying, a growing number of LNG import terminals in the United States and Western Europe are re-exporting LNG after it is imported into them.
Natural gas consumption in the world grew at an average annual growth rate of 2.9% - higher than 2.2% of primary energy consumption - from the 1970s when large-scale commercial use of natural gas started spreading around the world to 2008. While LNG trades has grown at a much higher average annual growth rate of more than 6% since the 1990s, LNG's share in the global natural gas market is still only around 10%. Thus, LNG is expected to expand its share in gas trades further in the future.

It appears that the global LNG markets in 2012 saw the first year-on-year decline in three years in internationally traded volumes. The spectacular volumetric growth of the global LNG industry - by more than 30% from 2009 to 2011 - apparently has come to a halt.

It was only Europe and the United States that significantly reduced regional LNG imports, as the sluggish economy drags down the overall gas demand in Europe and few signs of gas production decline have been observed in the United States. Markets in Asia, the Middle East and South America continue steady LNG imports.

7. Increasing LNG Supply

On the supply side in 2012, although the largest exporter Qatar again increased its LNG exports, many other exporting countries reduced production due to unforeseen plant outages or depressed gas demand in their original market destinations. In the meantime, the third LNG producing project in Australia, Pluto LNG, finally started LNG exports to Japan in May. However, Angola stopped short of starting exports of LNG in 2012.
The biggest expansion in LNG production in 2009 - 2012 came from Qatar. The Middle East emirate set a new production record three years in a row, exporting 37 million tonnes in 2009, 56 million tonnes in 2010, and 75 million tonnes in 2011. As a result, 48% of LNG trades in the world were originated from the Middle East and North African region in 2011.

This unprecedented expansion, combined with smaller-than-anticipated availability of LNG outlets in the Atlantic basin, has had significant impacts on the balance of global LNG market, as well as Qatar's own LNG marketing strategy. Qatar is utilising its LNG production capacity that was originally planned for sales in the United States to supply incremental LNG into Asia including Japan. While Qatar has used separate LNG pricing policies depending on market regions, its future direction of geographical distribution of sales and accompanying pricing policies are drawing attention in the industry.

As fiercer competition is expected from the next generation LNG supply sources in Australia and other countries after 2014 - 15, Qatari marketers are gearing up marketing campaigns to secure long-term deals to markets in the Asia Pacific region, including Japan, Malaysia and Thailand.

While Australia is currently the fifth largest LNG exporter in the world after Qatar, Malaysia, Indonesia and Nigeria, it is expected to have equivalent LNG exporting capacity as Qatar around 2018 when all those projects that have been sanctioned are completed. However, high concentration of construction activities could lead to potential shortage of engineering and labour resources and, in turn, possible cost increases and project delays. The issues are well recognised in Australia at both federal and state levels and are being taken care of.

Potential LNG export projects are emerging on the Coasts of Gulf of Mexico in the United States and Western Canada. While careful consideration is needed as to impacts on project economics of fluctuation of North American gas prices that are currently traded at historically low levels, there is little doubt of the potential for North American gas to be a major supply source to the international gas market.

While linking LNG prices to the North American benchmark price may not always mean less expensive LNG, it could certainly introduce a different pricing mechanism that could trigger reconsideration of pricing policies of different LNG suppliers.

8. Measures to Procure More Competitive LNG Supply

In this section, measures to procure more competitive LNG supply are discussed, in order to cope with changing market environment, placing some emphasis on activities by Japanese companies.

(1) Liquefaction tolling arrangements

Japanese companies have recently accelerated long-term LNG procurement activities especially in North America and Australia. Liquefaction tolling arrangements that Japanese companies are discussing at several LNG exporting projects in the United States are likely to provide a new model of LNG procurement - talks focusing on gas procurement in North America, rather than traditional LNG sales into the Asian markets, effectively avoiding discussions of oil-linked LNG pricing.

Such initiatives could have spill-over effects on sales discussions in different LNG supply projects, where different pricing arrangements are discussed, including different slopes and fixed elements or hybrid pricing of different formulae.
(2) Equity participation with product lifting

Another model was presented in June 2012 at the Wheatstone LNG project in Australia, where a Japanese consortium including Tokyo Electric Power Company (Tepco) acquired an 8% equity of the project and secured 700,000 tonnes per year of LNG supply for Tepco as the consortium's equity lifting. The arrangement sets a precedent of equity LNG acquisition as a Japanese consortium to keep escalation of LNG procurement costs in check.

The idea to have Japanese importers be involved in LNG production projects and gain the Japanese government-backed financial support to the projects is based on expectations that an importer's proactive involvement could lead to active influence toward lowering procurement prices. Japanese companies have participated in many of those projects from which Japanese buyers have long-term purchasing commitments and the Japanese government has typically provided indirect financial supports through JOGMEC and the Japan Bank for International Cooperation (JBIC).

Today not only Japanese companies but also companies from other existing and prospective LNG importing countries in the Asia Pacific region are actively seeking upstream and liquefaction opportunities. Therefore, it is very important for companies and their respective governments to closely work together to analyse risks and cost competitiveness of individual projects in depth when providing the government's support to the project.

(3) Aggregating procurement activities between buyers

Another way is a buyers' alliance or aggregation of purchasing activities between companies. The argument that aggregation of LNG procurement into a single channel would be an effective path to stable and strategic LNG procurement is based on suspicion that Japan does not have a strong bargaining position even though it is the largest importer in the world as the nation’s electric power and gas companies individually procure LNG.

While it is true that Japan has never nationally-unitised LNG procurement activities under one umbrella as Korea has done, Japan’s LNG purchases used to be more or less bundled before partial liberalisation of electric power and gas markets in early 2000s. When an economically viable grassroots LNG export project was planned or proposed, a consortium of electric power and/or gas companies used to be formed to support the projects as foundation buyers.

However, as liberalisation was gradually introduced into Japan’s electric power and city gas markets, such a consortium of buyers became outdated. In the late 2000s when the LNG market progressively became more favourable to sellers, more critics began questioning effectiveness of the disaggregated purchasing.

In the wake of the Great East Japan Earthquake and an ensuing surge of LNG demand leading to the expanding Asian premium of LNG prices, the latest argument calls for aggregation of purchasing activities between larger buyers into one umbrella just as Koreans do.

But it should be noted that aggregation of purchasing activities may not necessarily lead to actual reduction of LNG price levels, depending on specific market conditions. When in fact buyers proceed to bundling purchasing activities, they should unify and customise their priorities suitable to the specific instance, to the maximum extent to establish a strategically formidable procurement regime. Such bundled purchasing activities could include importers from different countries to share benefits of arbitraging between their respective markets.
(4) Pipeline imports

As Japan's LNG import surges, potential gas pipelines to Northeast Asia attract more attention - partly due to a slightly biased recognition in Japan that LNG is always more expensive than pipeline gas.

After China has started pipeline gas imports from Turkmenistan in late 2009 and from Uzbekistan in 2012, Kazakhstan and Myanmar are also expected to start deliveries to China in the near future. Chinese LNG buyers are suspected to leverage their position as a pipeline gas buyer in their LNG price negotiations.

Korea is also considering importing Russian gas through a pipeline traversing North Korea. Although the proposed pipeline is accompanied with high risks of transiting through North Korea, it would be no wonder that Korean LNG buyers want to use the pipeline as a card in their LNG price negotiations.

If Japan is to import pipeline gas, the most reasonably suspected exporter would be Russia. Although Russian pipeline gas imports to Japan have been considered since the Soviet Union era in the 1970s, they have never materialised due to economic and political reasons.

Any arguments that pipeline gas is always cheaper and LNG is more expensive are incorrect as the economics of gas supply vary depending on various other factors. But if any specific pipeline gas import proposal seems to have economic viability and could have any positive implication on other LNG price negotiations, Japan should not exclude the possibility of pipeline gas imports.

In continental Europe it was only after buyers had alternative supply sources – including LNG imports – to pipeline gas imports, that buyers managed to successfully introduce partial links to spot gas prices away from the traditional total linkage to oil, leading to lowering price levels. In other words, LNG is used to lower pipeline gas prices. It should be also noted that the economic slump and consequential sluggish gas demand has been a decisive factor of the recent developments.

Japan may be able to take advantage of potential pipeline gas options in negotiating LNG prices. As Japan's transmission pipeline grid has to be enhanced in order to accommodate pipeline gas imports, advance in infrastructure building is also expected, thanks to any pipeline import initiatives. As indicated above, it should be noted that a pipeline through the Korean Peninsula inevitably would be accompanied with a huge transit risk. It would be also not so easy to diversify supply sources of pipeline gas, compared to LNG.

In the end any LNG or gas pipeline supply chains should be developed based on needs and features of specific supply sources and/or specific consuming markets.

9. Changing Behaviour of LNG Players

Those companies with multiple options in both supply and downstream segments - including international oil and gas companies (IOGCs) and mid-stream players with portfolios of supply and outlets - have been leading the global LNG business. Having portfolios of both upstream and liquefaction and regasification and downstream sales at multiple points gives them the upper hand in negotiations and consequently further expands business opportunities and options. Ups and downs in the LNG market in 2011 and remarkable rises of newly emerging markets have highlighted the strong position of those portfolio players.

Japanese gas and electric power companies have played a central role in LNG business by providing stable gas demand. Japan is expected to remain the largest market of LNG in the world and the country's developments are expected to have significant impacts on the global market, even though the country and its LNG importing companies have a lot of challenges to overcome in its energy and nuclear policy.
Since the inception of LNG business in the 1960s, some Japanese trading houses have brokered LNG import deals for the nation's gas and electric power companies, participated in LNG upstream and liquefaction sector as minority partners, and facilitated project funding by utilising Japanese commercial banks and government backed financing. They have evolved their role as an essential element in the global LNG business according to changing market environments and requirements, by coordinating short-term and long-term deals between various regions around the world, not necessarily limited to Japan.

Future LNG procurement and business development strategies by Japanese companies will be more important in connection with the nation's energy security.

Today, not only those Japanese companies, but also other companies in the Asia pacific region, are becoming more proactively involved in LNG project development.

CONCLUSION

Tsukasa Koyama Natural gas is expected to expand its market reach as the cleanest fossil fuel and a price competitive energy source. LNG has evolved from a premium energy source in the past to an essential energy source to be utilised in wider geographical areas and different applications.

While Qatar has expanded its presence in LNG production significantly for some years, incremental production capacity is expected to come online toward 2020, mainly in Australia, as well as to the lesser extent in North America, Russia and Africa.

It is important for Southeast Asia to continue developing natural gas resources in order to keep supplying its own needs and export markets, while the region is expected to increase energy consumption rapidly.

Changing outlook of Japan's nuclear power generation has increased assured portion of future LNG demand, facilitating development of LNG export and other large-scale gas projects.

It will be more important for players in the Asia Pacific region to procure more competitive LNG supply in the future through proactive involvement in the LNG value chain as a whole, including upstream, liquefaction and transportation segments of the business. Cooperation and alliances with players in the region and around the world to optimise business will be more crucial in the future.