

**Research Paper**

**Recommendations  
for  
a better functioning LNG market in Asia**

**September 2015**

**The Economic Research Institute for ASEAN and East Asia  
The Institute of Energy Economics, Japan**

## Acknowledgement

The Economic Research Institute for ASEAN and East Asia (ERIA) and the Institute of Energy Economics, Japan (IEEJ) gratefully acknowledge the contribution of Siri Jirapongphan, Madhura Joshi, Neil Lambie, Ho-Mu Lee, Tatiana Mitrova, Jane Nakano, Jin Ho Park, Xunpeng Shi, Jonathan Stern, Xiansheng Sun, Laszlo Varro, and Duan Zhaofang, and anonymous reviewers from Australia, European Union, and Qatar for providing useful comments and suggestions for analysis and thereof developing recommendations.

The ERIA and the IEEJ takes full responsibility for the wording and content of this report.

## Introduction

As a result of the 1<sup>st</sup> series of Multilateral Joint Study Group on LNG in 2014, Masakazu Toyoda, CEO and Chairman of IEEJ presented “Recommendations to Realize the Sound Development of LNG Market” at the 3<sup>rd</sup> LNG Producer-Consumer Conference in November 2014.

LNG market is undergoing dramatic changes especially since the latter half of 2014. The most significant one is the collapse of oil prices, which led to lower Asian LNG prices. New liquefaction capacities and slower-than-expected demand decreased spot LNG prices even lower. As a consequence, “Asian Premium” of LNG shrunk substantially.

While lower price is welcome for LNG importers in Asia, there remain unresolved issues such as the lack of Asian benchmark price for LNG, inflexibility of LNG contracts and security of gas supply. On the other hand, lower oil and gas prices pose a question as to how upstream investment is secured to ensure future LNG supplies, taking into consideration the long lead time for gas development. In the summer of 2015, 2<sup>nd</sup> series of Multilateral Joint Study Group on LNG have examined these issues. This document has been drafted by IEEJ with an aim to make new recommendations to stakeholders and governments to promote sound development of the LNG market in Asia, based on discussions with a group of experts, and to be presented at the 4<sup>th</sup> LNG Producer-Consumer Conference on 16 September 2015 in Tokyo.

## **Recommendations for a better functioning LNG Market in Asia**

(Draft, as of August 2015)

### **Background: Changes and challenges in Asia LNG market**

LNG prices in Asia had been considerably higher than those in Atlantic market especially between 2011 and 2014. The price gap, or Asian Premium of LNG, could not be explained by transportation cost between Atlantic and Asian markets. The huge premium was a serious problem for LNG importing countries in Asia.

Relaxation of supply-demand balance and the collapse of oil prices led to lower LNG price and decreased Asian Premium of LNG. However, there remain four unresolved challenges such as below.

#### **1. Calling for flexibility in LNG trade in Asia**

LNG transactions in Asia are usually characterized by large volume, long-term, and rigid contractual terms. These characteristics have been brought about by high gas transport, liquefaction and storage cost of natural gas, as well as high investment risk associated with upstream developments and illiquid LNG market in Asia. Therefore, traditional LNG contracts for Asia feature certain terms to reduce upstream investment risks and secure operation in a quasi vertically integrated manner.

First, products typically have been sold under long-term contracts that often span more than 20 years. This is still largely the same today especially for new LNG projects, while some existing LNG projects offer shorter contracts.

Secondly, term LNG contracts include so called “take-or-pay” clause where a buyer is required to pay for the cargoes even if it cannot take them for whatever reasons, although 5-10% upward and/or downward quantity allowance is typically embedded in the contract.

Thirdly, in most LNG contracts for Asia, products are only shipped to specific geographical point(s) or country under “destination clause”. This clause was originally intended to lower investment risk by reinforcing security of supply for buyers and of demand for sellers. With destination clause, even in the case of FOB contract, a buyer is not allowed to resell a cargo to another buyer without seller’s consent. In Europe, the destination clause was made

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illegalized to be incompatible with Rome Treaty by European Commission and almost all destination clauses were removed in FOB contracts.

While some contracts offer relatively flexible terms in recent years, inflexibility still remains in many LNG contracts in Asia, importers need flexibility in gas trade not only to accommodate demand fluctuation but also, in the case of Japan, to prepare for unpredictable future domestic gas demand as a result of power and gas market liberalizations. Flexibility is also important for establishing gas on gas (market) pricing because it is only possible through flexible trading activities and subsequent liquidity growth of LNG market.

## **2. Seeking for appropriate price formation**

It is well known that LNG in Asia has traditionally been priced in relation to crude oil price – typically Japan's average crude import price or JCC. Such oil indexation is not only an issue for price formation but also for flexibility because, due to the structure of price formulae, oil indexation prices cannot follow market fundamentals in a timely manner.

The oil indexation originated from Europe where the majority of imported gas was priced by formula so that natural gas can compete with alternative fuel (mainly fuel oil and gas oil) in the market of importing countries. However, gas-on-gas pricing has been increasing in Europe because wholesale markets (hubs) became liquid enough to replace oil-indexed prices that could not follow the fundamentals of LNG market especially in 2009 and 2010.

In a high oil price era, some importers and observers in traditional Asian LNG importing countries started to question the relevance of oil-indexation as price formation process because natural gas has already replaced oil to a significant extent and thus little competition between natural gas and oil especially for power generation. As far as China and India are concerned, dominant fuels are coal for power generation and industry sectors, and biomass and electricity for household and commercial sectors. Therefore, in those countries, competition between oil and natural gas is limited in the first place. In other words, one can question whether oil indexation as natural gas pricing for Asian importers is still appropriate.

Many Asian LNG buyers are seeking alternative pricing in recent years. US LNG prices will be based on Henry Hub price, liquefaction and transportation costs. Some of the new contracts feature hybrid pricing of Henry Hub or NBP or spot LNG price and oil indexation. With pricing diversification continuing, it is clear that LNG price for Asia should reflect market fundamentals in Asia with accuracy and timeliness.

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### **3. Ensuring gas security**

Gas security issue has been spotlighted in Europe especially since mid 2000s. Gas supply disruptions, in particular in a winter heating season, undermined security of supply in some European countries. In response to this situation, the EU intensified its gas supply security discussions and implemented some policies which include diversifying supply sources and enhancing flexibility of gas supply on a global basis.

The discussion has become widely recognized and shared among many countries even outside of Europe, as demonstrated by a declaration of the Brussels G7 summit in 2014 that support the relaxation of destination clauses for promoting gas security. It is based on a common perception that flexible, transparent, and competitive energy market including gas/LNG is one of core principles to build energy security. In addition, European Commission has developed new concept of 'Energy Union' which includes gas/LNG supply security as one of its pillars.

The series of discussions has enhanced awareness of LNG consumers in Asia for an importance of LNG supply security and trade flexibility. While each importing country in Asia faces different energy challenges, rising import dependency is urging importing countries to pursue flexible LNG supplies to ensure gas security.

### **4. Securing investments to ensure future LNG supply**

Asian LNG demand is expected to double and reach 363 million tonnes per annum in 2040, according to IEEJ. As such, continuous investment which will commercialize supply potentials especially in Australia, North America, Russia, and Africa is expected to ensure security of LNG supply in the future in Asia. However, it is becoming critical to secure adequate and timely investments under the low gas price circumstance..

Long-term contracts have played and still play a major role to commercialize new LNG projects. Flexible market does not necessarily exclude long-term contracts. On the contrary, it is important to recognize the utility of long term contracts especially for new, remote, green field, large scale projects. However, future long-term contracts should feature gas on gas (market) pricing.

## Recommendations

LNG market is in transition in terms of geographical and quantitative expansion, diversification of price formations, and lower oil and gas prices. In order to balance benefits between importers and exporters and to find workable solutions for sustainable LNG market development in varied energy situation in each importing and exporting countries, LNG market players and policy makers are encouraged to enhance their efforts to create more flexible, transparent, and sustainable LNG market in Asia. While the private sector is mainly responsible for commercial deals, the public sector is encouraged to support to improve business environment for developing a better functioning LNG market especially in terms of flexibility, price formation, gas supply security, and securing necessary investments.

### 1 Flexibility

Enhancing flexibility is the key to a better functioning LNG market in Asia. Not only international LNG but domestic gas markets should be more flexible.

- 1.1 Contractual flexibility should be enhanced by eliminating destination restrictions in FOB contracts and relax them in DES contracts.
- 1.2 Policy makers are recommended to enhance domestic gas market liquidity through liberalizing domestic gas market and prices, and developing adequate and accessible gas infrastructure capacities by promoting such measures as third party access to gas infrastructures where applicable.

### 2 Price formation

Oil indexation rapidly lost its relevance in recent years because oil is increasingly less competing against gas and it is not able to track LNG market fundamentals. Gas on gas competition (market) pricing is fundamentally desirable so that the market fundamentals of LNG can be directly reflected on price.

- 2.1 Price formation at Asian gas/LNG hub(s) such as wholesale domestic gas market in Asian importing countries as well as in spot LNG market should be pursued. Singapore intends to establish a hub and some other countries are exploring the possibility of this kind including Japan. Further investigations and actions toward establishing Asian gas/LNG hub(s) are suggested.
  - 2.2 It will be useful to diversify price formation of LNG in Asia by linking with North American and European hub pricings and spot LNG pricing while tackling with the
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followings: (a) modifying JCC pricing to better reflect market conditions; (b) making continued efforts to develop Asian gas/LNG hub(s).

### 3 Gas supply security and role of functioning market

Gas supply security attracts greater interest not only in Europe, where the conflict in Ukraine overshadows, but in many Asian countries as their gas demand and import dependency soar.

3.1 Gas supply security should be improved by both supply and demand side measures, such as diversification of supply sources including pipeline gas, developing emergency response scheme, improving energy efficiency, removing price subsidies, and enhancing demand flexibility.

3.2 Contemporary approach such as flexible trade, for instance between European and Asian market, and appropriate price signal of LNG are suggested to be pursued as they are important elements that can ensure, particularly short-term, gas supply security in a global LNG market. Traditionally, long term contract has played this role. However when considering a dramatically changing circumstances in each regional market, where steady progress takes place toward market liberalization, it is obvious that long term contract alone cannot fulfil the requirement of supply security.

3.3 In this light also, destination restrictions in contract need to be eliminated or relaxed to enhance flexible trade of LNG.

### 4 Securing necessary investments

It is critical to secure adequate and timely investments to realize additional LNG supply potential to meet with growing LNG demand in Asia, particularly in a current lower gas price circumstances.

4.1 The governments of LNG exporters are expected to maintain transparent and consistent policy to encourage upstream developments, while respecting social and environmental consideration and restrictions. The governments of LNG importers are expected to promote adequate and accessible infrastructure developments.

4.2 Take or Pay has played and still play an important role to commercialize new LNG project. However, in response to substantially changing market, it is suggested to pursue expanding allowances of DQT (Downward Quantity

Tolerance) and UQT (Upward Quantity Tolerance) as much as possible.

- 4.3 Equity participation of importers and public support are suggested to be hired when private finance is not sufficiently available due to price uncertainty in the future.



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