

Strategy for LNG Market Development

Creating flexible LNG Market

and

Developing an LNG Trading Hub in Japan

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Ministry of Economy, Trade and Industry

Government of Japan

1. Introduction

Liquefied natural gas (LNG) is a significant traded commodity with the second largest annual trade value of more than 150 billion dollars, following that of crude oil. Tokyo Gas Company and Tokyo Electric Power Company first started importing LNG from Alaska in 1969, and Japanese utility companies have led the development of an LNG market around the world. Japan is now the world's largest consumer of LNG, importing approximately 89 million tons (approximately one-third of the total demand of the whole world in 2014). In addition to Japan, LNG imports have expanded to Korea, China, and other countries.

Based on the Strategic Energy Plan (Cabinet Decision on April 11, 2014), which positions natural gas as a significant energy source whose role is expected to expand into the future, the Long-term Energy Supply and Demand Outlook ("Energy Mix") was compiled in July 2015. The outlook forecasts that the import volume of LNG will be maintained at the level of around 62 million tons in 2030. LNG is thus continuously positioned as a strategically important resource for Japan.

Following the shale revolution and the reform of the electricity and gas markets in Japan, the market environment surrounding LNG is now experiencing drastic changes, and the focus in securing a stable energy supply under normal condition needs to be shifted from securing long-term stability and sufficient quantity to securing flexibility and resiliency and better market utilization.

The Ministry of Economy, Trade and Industry ("METI") has held dialogues with major consumers and suppliers of LNG since last November, in collaboration with the Ministry of Land, Infrastructure, Transport and Tourism and relevant organizations (JOGMEC¹, JBIC², NEXI³, Tokyo Commodity Exchange ("TOCOM"), etc.). In light of the information obtained through such dialogues and utilizing this time of drastic changes as a good opportunity for Japan, the world's largest consumer of LNG, to play an initiator role in creating a global LNG market, METI decided to compile this strategy. We hope that related parties both in the private and public sectors share the vision indicated in this strategy and accelerate respective efforts to take necessary actions.

2. Recent fundamental changes in the LNG market

(1) The shale revolution and LNG exports from the U.S.

The shale revolution in the U.S. beginning in the 2000s has changed U.S. energy supply

¹ Japan Oil, Gas and Metals National Corporation

² Japan Bank for International Cooperation

³ Nippon Export and Investment Insurance

dramatically and thus affected the global energy and supply environment. The continuous innovation in shale technology reduces the costs of drilling and production dramatically and it is expected that gas prices in the U.S. will continue to be lower than oil prices. The export of the first LNG from the U.S. mainland in February 2016 was a key indicator that the shale revolution will affect the gas market worldwide. It is better for Japan to benefit from the decoupling of oil prices and gas prices by optimizing LNG transactions.

(2) Growth in global LNG demand

Global LNG demand is expected to increase by around 45% from the current 250 million tons to reach close to 350 million tons by 2020.⁴ It is expected that the LNG demand especially in China and India will continue to grow, and the traditional LNG exporting countries such as Malaysia and Indonesia will turn into LNG importing countries. This trend clearly shows that the Asian countries will be a driver for the rapid LNG growth worldwide.

In Europe, the role of LNG has been reassessed and the use of LNG is likely to increase from the supply security perspective. Additionally, it is also expected that the LNG demand will grow in other regions such as the Middle East and South America.

Furthermore, at COP21 (the 21st session of the Conference of the Parties to the United Nations Framework Convention on Climate Change) held at the end of last year, the Paris Agreement was signed to oblige all participating countries to submit their Nationally Determined Contributions (“NDCs”) to reducing greenhouse gas emissions. As the need to address global warming attracts more people’s attention, natural gas, which emits less CO₂ than coal or oil, is expected to play an increasingly significant role.

(3) Systematic changes in global LNG supply

The role of South East Asia and the Middle East is significant in terms of LNG supply. The role of those areas will continue to be significant, but the overall amount of LNG exports is expected to decrease compared to the current level. On the other hand, large scale LNG projects are scheduled to commence in the United States and Australia in several years and a large volume of LNG will be supplied to the market. More of the players in those countries are private rather than state-owned, so they will be more market-oriented, with more impacts on the LNG market globally, and the trend is likely to create more room for LNG importers to import LNG in a more flexible manner.

⁴ Source: International Energy Agency (IEA)

(4) Enhancement of market-oriented behaviors of Japanese LNG buyers due to the liberalization of electricity and gas markets

Full liberalization of the electricity market commenced in April 2016 and full liberalization of the gas market, scheduled for April 2017, will bring about drastic changes in the behavior of Japanese electricity and gas companies, which are the world largest LNG consumers. Specifically, due to the unclear energy demand forecasts, LNG purchasers will seek more flexible and diverse options (in terms of regions, procurement periods, price formulae, etc.). Additionally, expanding the introduction of renewable energy will further increase uncertainty in LNG demand for electricity. In liberalized electricity and gas markets, procurement costs for LNG directly affect the competitiveness of those companies. To adapt to such changes, Japanese companies will attempt to leverage a flexible market as means for optimizing and hedging quantities and prices of their LNG portfolio. In the near term, there may be more cases where some purchasers that have surpluses under long-term contracts become spot sellers both within Japan and overseas.

As a result, it has become highly likely that a new procurement model will become widely adopted, combining a new manner of procurement where diverse players make short-term or spot purchases of LNG in the market, even though the significance of the conventional procurement model in which purchasers conclude a long-term contract for each project cannot be denied for the time being. Changes in the procurement models used by Japanese companies may be a key driver to change in the worldwide LNG market.

(5) Worldwide trend in integration of natural gas markets

Natural gas markets are divided into the European market and North American market, both of which are based upon domestic production and imports by inter-connected pipelines, and the Asian market in which LNG was the key source. A significant difference in gas prices in three markets was not observed before the early half of the 2000s, but U.S. gas prices have fallen significantly with the shale revolution and European gas prices deviated from oil prices due to both the evolution of gas price indices accompanying the liberalization of the gas market and demand crash after the Lehman shock.

On the other hand, Asia experienced constant demand growth keeping the prices high - a phenomenon known as the Asian Premium - while the gap between European and U.S. prices expanded. Looking at the future, it is expected that a large amount of LNG will be exported from the U.S. without destination restrictions, that LNG imports by Europe, South America, and the Middle East will increase, and that market-oriented players will play more significant roles in the market. Those trends mean that the LNG distribution routes, which used to be

one-way, leading mainly to countries in Northeast Asia, will become dynamic and multi-directional. Such trends will also facilitate the integration of the U.S., European, and Asian markets to create a global LNG market, resulting in price arbitrage and conversion.

(6) Accelerated overseas initiatives to create LNG trading markets

With the recognition that the importance of both gas supply security and natural gas in the energy supply portfolio have been increasing, G7 members and other market participants have discussed the importance of international cooperation to establish liquid and functioning natural gas and LNG markets. The European Union published the EU strategy for liquefied natural gas and gas storage in February 2016, proposing international cooperation and member countries' efforts toward further utilization of LNG and establishment of an integrated LNG market.

Additionally, structural changes in the supply and demand of LNG have accelerated various countries' initiatives to create LNG trading hubs. Historically, hubs serving as trading nodes in the United States (Henry Hub, etc.) and Europe (NBP, etc.) were only for aeriform natural gas delivered via pipelines, and there were no hubs for LNG. However, initiatives to develop LNG trading hubs have been launched in various countries. In Singapore, for example, the national government has been leading the initiative to develop an LNG trading hub. A natural gas exchange has also been established in Shanghai. In this manner, initiatives to develop LNG trading hubs have been launched in various countries.

Also in Japan, TOCOM opened an OTC trading system for LNG in 2014. Taking advantage of its position as the world's largest LNG consumer and strategic location in terms of trade routes, it is increasingly hoped that Japan will develop an LNG trading hub as a center of LNG transactions and the place where LNG price signals are formulated and published.

3. Goals: Flexible and liquid LNG market and Japan serving as an LNG Trading Hub

(1) Significance of a flexible and liquid LNG market

In light of domestic and international environmental changes surrounding LNG, Japan should play a leading role in developing a flexible and liquid LNG market. Achieving the development of such a market is significant, for the reasons indicated below.

i. Significance for purchasers

The high level of flexibility created by the expansion of spot transactions and price determination which properly reflects the actual supply and demand of LNG itself will enable purchasers to trade LNG at reasonable prices at any time, which will also lead to

the stabilization of supply and demand. Additionally, the diversification of suppliers and supply sources will contribute to improving supply security.

ii. Significance for sellers

As behavior of purchasers change and short-term contracts and spot trading increase, sellers may also continually earn reasonable profits. When the LNG market further develops and the so-called “volume risk” diminishes, investments in the upstream sector will be made on a continuous basis, which will eventually ensure sustainable LNG sales. In addition, if third party access becomes available, sellers can expand their LNG sales by leveraging market mechanisms.

Furthermore, the transparency and reasonableness in price determination will enhance the appeal of LNG as an energy source and will promote the shift to LNG and the creation of new LNG demand.

iii. Societal significance

A flexible LNG market will also benefit the general public, the final consumers of natural gas. Expanding arbitrage trades of LNG is expected to reduce the Asian Premium, which becomes conspicuous when the crude oil price is noticeably higher than the gas price, and this will contribute to a reduction of energy prices and trade balance improvements. It will also be effective in enhancing the capacity to cope with emergencies in the event of a disruption of supply from specific regions or difficulty in securing a different power source.

A stable supply of LNG not only supports sustainability and stable livelihoods and economic activities but may also help solve the issue of climate change. Furthermore, futures trading and other financial businesses may develop in addition to LNG trade. A flexible LNG market will also enable the global expansion of Japan’s LNG-related technologies and know-how and will thus contribute to expanding market frontiers for Japanese and international companies.

(2) Japan serving as an LNG trading hub

Japan should endeavor to develop a flexible and liquid LNG market, and at the same time, make the most of its position as the world’s largest LNG consumer to develop an internationally accepted LNG trading hub from the aspects of both attracting LNG trade from around the world and determining and transmitting price signals. Such efforts will ease supply-demand adjustments and price arbitration, and will further stabilize procurement and

strengthen the power to negotiate prices for the nation as a whole. For the time being, Japan will continue to be the world's largest LNG consumer, and domestic and global LNG markets are expected to develop dynamically. Japan should accelerate all efforts in order to achieve the goal of obtaining the status as an internationally recognized hub by the early 2020s.

It goes without saying that LNG trading hubs may not be limited to Japan. We welcome any other initiatives to create LNG hubs in Asia. Multiple LNG hubs which are well linked with each other can have a positive effect on realizing our goals by creating healthy competition and thus establishing more sophisticated Asian LNG price indices.

4. Three fundamental elements

Based on past experience in other countries and in other energy fields, in order to enhance the flexibility of LNG and develop an LNG trading hub as planned, the following three goals need to be achieved.

(1) Enhancement of tradability

LNG is produced by removing impurities from natural gas and being cooled and liquefied at minus 162 degrees centigrade, and its storage and transportation requires special equipment. LNG tankers are used for transportation, and trade is basically per unit of cargo, unlike aeriform natural gas, which means that the scale of trade is larger than in the case of other energy products. The existence of a destination clause is also one of the factors restricting free reselling and optimization of LNG portfolios. These physical and commercial conditions concerning LNG have worked as high entry barriers and have made LNG trade difficult.

In order to develop a flexible and liquid LNG market, these restrictions need to be eliminated to the greatest extent possible to increase the number of market players as well as trade volumes and frequencies to a level exceeding a certain critical mass.

(2) Creation of a proper price discovery mechanism

In conventional LNG trade, in fixed-term contracts in particular, pricing linked to crude oil prices was frequently adopted. This is because LNG was recognized as a substitute for crude oil, while crude oil and gas share part of their production technologies as gas is produced in association with the production of crude oil. However, oil-fired power generation has decreased and natural gas cogeneration systems have spread, which has differentiated the uses of gas (mainly used for power generation or as heat source) and oil (mainly used for transportation). Under such circumstances, linking the pricing of LNG to crude oil prices is no longer necessarily justifiable.

The establishment of price indices which accurately reflect the supply and demand of LNG itself will not only facilitate spot trading but also contribute to stabilizing import prices through immediately helping to diversify price formulae, which used to be mainly linked to crude oil prices. If financial service providers and other risk takers also participate in the market in addition to LNG consumers, it will facilitate the development of the futures market and will also increase the depth of the LNG market.

In order to establish price indices which reflect the supply and demand of LNG itself, it is necessary to increase spot trading to enhance the reliability of spot price indices, and make a shift, also in fixed-term contracts, to a new system linked to gas price indices from the current pricing system linked to crude oil prices. If the new system is adopted as a formula for the pricing of fixed-term contracts, the need for price hedging utilizing futures trading will further increase and this will facilitate the establishment of relevant price indices through the transmission of futures prices, etc.

(3) Open and sufficient infrastructure

The International Energy Agency (IEA) points out that ensuring fair access to infrastructure for all people, notably third party access, is extremely important in developing a trading hub. However, Japan has failed to ensure sufficient interconnectivity to pipelines and is evaluated as being inferior in terms of third party access to LNG tanks and regasification facilities.⁵ Western countries have developed trading hubs serving as nodes of physical pipeline networks, represented by the Henry Hub, and virtual hubs (such as the NBP in Great Britain and the TTF in the Netherland) covering the whole network within a certain area as a virtual trading market. Ensuring the open access to infrastructure necessary for the delivery and storage of LNG will also contribute to increasing flexibility in trade and development of LNG trading hubs.

Third party access to infrastructure allows for freer and more transparent trading, and is also important for increasing natural gas demand. Furthermore, maintaining a certain quantity of infrastructure accessible to the third party will create an extra margin in emergency response circumstances, thereby achieving better security.

⁵ “...[F]or LNG terminals, the requirement for a TPA is deemed only as desirable, limiting the obligation for companies to engage in a negotiated TPA. Some companies have developed guidelines, but in general it has proven difficult to establish a TPA at LNG import terminals, as these are developed to fit an importer’s specific supply portfolio and subsequently the sales portfolio requirements in the hinterland. The lack of interconnections between regions then further limits the ability to increase competition through a TPA.”, Developing a Natural Gas Trading Hub in Asia, IEA, 2013

5. Three basic principles

It is not an easy task to actually enhance the flexibility of the LNG market and develop a trading hub. Based on successful examples in other countries, it is recommended that Japan accelerate efforts in close collaboration between the private sector and the public sector based on the following three basic principles.

(1) Private first

Purchasers, sellers and other market participants should share the commitment and initiatives to creating a flexible and liquid LNG market, and the government should focus on market surveillance and improving the market environment. Looking at how gas markets work in the United States and Europe and how the global crude oil markets have developed so far, market liberalization and drastic changes in supply and demand have changed the mindset of businesses, and market development has been driven by the widespread awareness that cultivating and utilizing markets also benefit individual market players. The Asian market players are on the edge of this fundamental change. It should be noted that unnecessary government intervention may be a hindrance to healthy market development.

(2) Globalism

Japan is the world's top importer of LNG. However, considering the following facts;

- A) LNG is globally traded,
- B) Production areas of LNG are located all around the world, unlike crude oil,
- C) Suppliers have become diversified, including not only International Oil Companies (IOCs) and National Oil Companies (NOCs) but also many independent newcomers such as those emerging in the United States,
- D) New purchasers are increasing in emerging countries;

Japan needs to have a globalized perspective, instead of only prioritizing domestic circumstances, in developing the LNG market. For this purpose, it is important to make efforts to transmit information globally and maintain dialogue with overseas market players.

(3) Action-oriented

The age of the current LNG market is just dawning, and it has been pointed out that there are many "Catch 22" problems. For example, some say that the flexibility of LNG cannot increase without trading hubs, but trading hubs cannot be developed unless the flexibility of

LNG increases,⁶ while others say that the establishment of transparent price indices will expand spot trading and increase market flexibility, but price indices will not be reliable enough unless spot trading expands. Such dilemmas make related parties hesitant to take concrete actions to solve problems and restrict LNG market development. The situation will not change unless concrete actions are taken instead of remaining on the sidelines. Related parties should take advantage of changes in the market environment in the coming several years and take a step forward.

6. Actions

(1) Enhancement of tradability of LNG

i. Strengthening efforts towards eliminating destination clauses

Conventional LNG contracts usually contain a destination clause that somewhat restricts destinations of the relevant LNG cargoes and this practice has hindered free LNG trade. This has long been criticized as problematic, as in Europe, for example, where European Commission confirmed that territorial restrictions infringe EC Treaty under certain circumstances. METI has also pointed out the constraints imposed by destination clauses in LNG contracts at LNG Producer-Consumer Conference meetings and on other occasions, and the recognition has been shared at G7 Energy Ministers meetings and G7 Summit meetings.

As easing or elimination of destination clauses is indispensable for achieving a flexible and liquid LNG market, METI will continuously make efforts at G7 meetings and LNG Producer-Consumer Conference meetings and will strengthen collaboration with major LNG consumers such as the EU, South Korea, India and China (together with Japan, accounting for approximately 80% of global demand).

ii. Discussion of finance to enhance LNG projects in light of policy needs

In order to ensure mid- and long-term supply security, stable investments in the upstream sector and construction of liquefaction facilities are required. On the other hand, in the coming years, LNG will flood the market and purchasers are expected to decrease the portion of long-term contracts in their portfolio. Until now, most of the LNG sales have been determined under long-term contracts concluded with purchasers and this practice was considered to be necessary in order to secure loans for the

⁶ “A more destination-flexible LNG supply is needed to drive the momentum towards a gas trading hub in Asia, but without initial steps towards such a hub, flexible LNG would not have a haven in Asia at which to arrive.” Developing a Natural Gas Trading Hub in Asia, IEA, 2013

construction of LNG facilities that require massive initial investment. However, it would be advisable for financial institutions to positively review their financing policy in response to current and future circumstantial changes surrounding LNG.

LNG purchasers have come to adopt flexible supply-demand adjustments such as selling LNG overseas instead of only receiving delivery of LNG in Japan. While the importance of securing flexibility and resiliency and better market utilization is increasing in addition to a stable energy supply, such initiatives employed by LNG purchasers may also contribute to ensuring LNG supply security. Evaluation of national interest, which serve as the premise for the JBIC and NEXI to offer financing support (so-called “Japan interest”) should also reflect such changes in policy needs. For instance, Japanese companies which complete offtake agreements for emergency situations or which have control rights for LNG can be assessed positively in addition to offtake amount to Japan.

In addition, considering that the establishment of price indices reflecting the supply and demand of LNG is an important prerequisite to a sound LNG market, it is also important to actively support projects which will lead to completing contracts, which would prove helpful in establishing such price indices.

In consideration of these points, METI will make further efforts to build and develop a liquid and effective LNG market and strengthen supply security in closer collaboration with government-affiliated policy and financial institutions.

iii. Increasing new demand for gas and LNG domestically and internationally

It is necessary to increase the depth of the market in order to vitalize LNG trading, and further efforts should be made to discover potential demand sources for gas and LNG both inside and outside of Japan to encourage the entry of newcomers. It is expected that private companies will be actively engaged in pioneering new markets.

Additionally, METI will endeavor to promote the introduction of co-generation systems, fuel cells, LNG-fueled trucks, LNG bunkering etc., in collaboration with The Ministry of Land, Infrastructure, Transport and Tourism and other related parties.

Additionally, demand for clean natural gas is expected to increase in emerging countries (notably in Asia) and many Asian countries have come to import LNG. Japan will support the introduction of LNG import facilities as an important target for its “Enevolution⁷” initiative and accelerate energy policy dialogues with emerging

⁷ Initiative METI started in May 2015 to offer comprehensive solutions to emerging countries

countries (e.g. Thailand, Indonesia, India, Myanmar) to offer them support for the development of systems which will facilitate LNG utilization. Japan will make the most of its past energy policy experience and accumulated technologies, and at the same time will support private sector by providing advice for constructing LNG receiving terminals, natural gas-fired power plant projects and human resource development.

iv. Facilitating operation of LNG tankers

For the transportation of LNG, conventionally, LNG tanker(s) were constructed in line with the specifications of a specific project and the LNG was transported using those specific tanker(s) to a specific LNG receiving terminal. However, spot trading and recent and future increases in new players require more efficient operation of LNG tankers. For example, before entering a specific port, an LNG tanker needs to undergo an examination to ensure safety, but prompt responses by the receiving ports are necessary in order to create a smoother LNG trade process. The Ministry of Land, Infrastructure, Transport and Tourism has already commenced efforts to speed up procedures to check consistency with specifications in collaboration with businesses. Such efforts will be further strengthened by relevant ministries and agencies in an integrated manner while sufficiently taking businesses interests into account.

(2) Establishment of price indices reflecting supply and demand of LNG in Japan based on sound competition

i. Current situation

In recent years, price reporting agencies (“PRA”), such as Platts, Argus, and RIM Intelligence are publishing assessment information on LNG spot prices and some of these companies seem to have been diverting more resources towards swap trading, etc. The EMC, a subsidiary of the Stock Exchange of Singapore, has recently started LNG price assessment (“SLInG”). Also in Japan, based on discussions at the LNG Futures Market Council, the Japan OTC Exchange, which is a TOCOM group company, started a price discovery initiative through forward transactions of LNG, and system improvements have been made, including the commencement of settlement by the US CME Group. Furthermore, the utilization of the Japan LNG Cocktail (JLC) as an index in fixed-term contracts is increasingly attracting attention. However, at present, as LNG spot trading has yet to gain sufficient momentum, there are still no price indices that are widely accepted by market players.

ii. Basic principles

This type of price assessment by PRAs should ideally be selected by market players through competition among PRAs in observance of transparency, convenience, and objectivity. It is not always necessary to have common indices applicable to all countries in Asia, but diverse indices in respective countries and regions should preferably be developed concurrently. Positive action in this field on the part of Japanese market players is highly anticipated.

From the perspective of developing accurate LNG price signals, price indices established based upon transactions in Japanese markets would be potentially beneficial for Japanese market participants as it is likely that those indices would more accurately reflect Japanese (the largest LNG market) supply and demand.

The Inter Continental Exchange (ICE) Europe already provides a system that enables one-stop trading of natural gas, crude oil, coal etc. which are global index for commodity markets. In Japan, the liberalization of electricity and gas markets is expected to further increase the need for futures trading and price hedging concerning electricity and other types of energy. For the convenience of market players, it is significant to prepare a system which enables one-stop trading of various types of energy. Based on the Strategic Energy Plan and the Japan Revitalization Strategy 2015 (Cabinet Decision on June 30, 2015), the government of Japan has positioned the creation of a comprehensive energy market including a futures market for electricity and LNG as one of the priorities in its economic and industrial policy. From this point of view as well, it is expected that TOCOM will design and improve systems while proceeding with its efforts to create a comprehensive energy market.

iii. Directions for market players

Spot trading and short-term LNG trading is set to increase to a certain extent globally, and efforts to assess pricing on the part of traders will follow naturally. However, transmission of transparent price indices is conversely necessary for the expansion of spot trading. In order to solve this dilemma, all market participants need to be committed to establishing and improving LNG price indices and become positively involved in information disclosure and system improvement. Some point out that the publication of transaction prices is difficult due to confidentiality obligations under contracts, but it may be important for both parties to permit anonymous information disclosure to an agreed PRA, etc. from the perspective of developing

better indices.

iv. Directions for METI

Considering that price indices reflecting supply and demand of LNG in Japan should be developed in sound and fair competition, METI will have necessary communications and dialogues with domestic and international market players including PRAs in relation to price assessments. In order to increase the appropriate use of price indices, LNG trading contracts using such indices will be positively taken into account for evaluation of national interest by the JBIC, NEXI and JOGMEC.

Most reliable price indices should be based on actual trade, and not only on estimates. From this perspective, TOCOM should also properly review trade rules to make relevant systems more attractive to market players, by adding spot trading functions and encouraging wider global recognition, etc. METI will also provide necessary support for that purpose.

(3) Development of sufficient and accessible infrastructure

i. Third party access to LNG terminals

Looking at cases of naphtha, which is traded by unit of cargo like LNG, the existence of sufficient infrastructure at the largest point of entry, seems to have contributed to the establishment of price indices surrounding that location. As for LNG trading, it may be possible to utilize the amount of space in existing LNG tanks as well as new tanks scheduled to be constructed as a new business. In consideration of such a possibility, the amended Gas Business Act enacted in June 2015 introduced a system which allows third party access to LNG terminals. Rules concerning third party access to LNG terminals and information disclosure will be further discussed while referring to best practices in Europe and considering the perspective of developing a flexible and liquid LNG market.

ii. Developing other infrastructure necessary for flexible LNG trading

In order to enhance the flexibility of LNG trading and for Japan to obtain the status as a trading hub, it is important to both encourage new market players to participate and to develop infrastructure that allows for flexible LNG trading, such as mutual accommodation among businesses and arbitrage between seasons. For example, open access to LNG receiving terminals may facilitate spot trading and futures trading at such terminals or trading of LNG in tanks, etc. The use of reload facilities may be

another option for furthering diversifying LNG trading. If the connectivity of gas pipelines is ensured in Japan and underground gas storage facilities, such as depleted gas fields, are made widely available, supply-demand adjustment capability will be strengthened nationwide and this may increase LNG trading volumes.

From this perspective, appropriate institutional measures and policy incentives should be discussed immediately in order to promptly secure necessary infrastructure such as sufficient LNG terminal capacity for new players and traders, wide-area pipelines connecting major points of demand and underground gas storage facilities of sufficient capacity which will be available for third parties. METI welcomes new business models proposed by domestic or international LNG players operating open-access LNG terminals or trading leveraging them.

(4) International collaboration

Japan will carry out the abovementioned measures in cooperation with foreign powers. In addition to collaboration with major LNG consumers, cooperation with LNG producers, such as Qatar, Australia, Russia, and the United States is needed. Japan will contribute to discussions mainly at G7 meetings and LNG Producer-Consumer Conference meetings and present concepts for an ideal LNG market, and it will endeavor to strengthen international collaboration towards achieving this by strategically undertaking measures in cooperation with consumers (such as joint actions for eliminating destination clauses) and measures in cooperation with producers and consumers (such as natural disaster and other emergency response agreements).

Additionally, as the number of LNG consumers is expected to increase into the future, in order to further expand international cooperation, Japan will proactively communicate its approach in this field on such occasions as multinational meetings of the G20, APEC, and EAS, as well as at bilateral meetings with major LNG consumers in Asia and the EU that have announced a policy prioritizing LNG use.

(5) Ongoing dialogues with private sector market players

Based on one of the abovementioned basic principles, “Private first,” dialogues with private sector market players will continue and any issues raised will be handled immediately. Amid the progress of the liberalization of the electricity and gas markets, a number of newcomers attempting to utilize new business models that leverage the structural changes of LNG market are expected to emerge. Those business models may include LNG trading, operation of open-access LNG terminals, or LNG bunkering. Participation of international

players and international cooperation is expected to increase. METI will listen to the opinions of such newcomers and will actively provide them with support.

(6) Review and Continuous follow up

We will review this strategy on an annual basis, based on dialogues with the private sector and revise it if necessary. In addition, METI will consider the necessity of policy responses with regard to such issues as credit management in trading with new market players of emerging countries, standardization of trade contracts, which has been developed for gas trade in western countries, international standardization of LNG tankers and tanks, etc., and innovation of LNG technologies.