LNG Producer-Consumer Conference

Summary Statement

Tokyo, September 19, 2012

Ministry of Economy, Trade and Industry

APERC

The LNG Producer-Consumer Conference was held in Tokyo on September 19, 2012. The conference was attended by five cabinet ministers, including Minister of Economy, Trade and Industry Edano, who is the host, and more than 600 people from 30 countries and economies, including government and company officials and researchers from LNG-producing and –consuming countries. It was sponsored by the Ministry of Economy, Trade and Industry and APERC and was supported by the Yomiuri Shimbun.

Opening Remarks by the Host and the Keynote Speech

(Japan) Minister of Economy, Trade and Industry Edano: We would like to promote understanding of the long-term outlook on LNG demand, enhance the transparency of the LNG trading market and enable understanding of the vision of the future of the LNG market at a time when this increasingly important market is undergoing a major paradigm shift due to the shale gas revolution and a steep increase in demand in the Asia-Pacific region. I hope that the people concerned will engage in a frank exchange of opinions on what an LNG market and trading desirable for both producers and consumers would be like. For Japan, it is important not only to ensure a stable supply of LNG but also to procure it at low cost. It is a challenge to consider a new pricing system to replace the current system of linking the gas price to the crude oil price (gas-oil price link), which has lost its rationality, with one that will be beneficial for both producers and consumers. It is necessary for countries in the Far East region to communicate information and messages in this way.

(Qatar) Minister of Energy and Industry Al Sada : Shale gas has uncertainties in terms of environment friendliness which need to be addressed. It is necessary to carefully watch whether the LNG export capacity of the United States will be sufficient from the perspective of the global market. In addition, as the consumer-producer balance of power is changing, we must pay adequate attention to the risk that gas price reduction will deter future investment in gas development. Constructive dialogue between producers and consumers will help to develop an appropriate investment environment.

(Australia) Minister for Resources, and Energy and Tourism Ferguson: Foreign investment is important for the development of Australia's LNG industry. In addition,

an open and fair trading and investment will contribute to the energy security of the Asia-Pacific region. Australia will take on the responsibility to continue to supply gas to Asia. To that end, burden sharing between the public and private sectors is important.

(South Korea) Minister of Knowledge Economy Hong: Natural gas imposes a relatively small environmental burden and demand for it is expected to grow further. By 2035, natural gas will replace coal as the second-largest energy source. Asian LNG buyers view that the existing LNG trade arrangements as rigid contract and pricing practice, which undermine the creation of efficient market and the commoditization of Natural Gas. Thus, both producers and consumers need to eliminate such obstacles for the development of LNG market and this conference is the starting point toward the better future for consumers and producers..

(Canada) Minister of Natural Resources Oliver: Canada requests the cooperation of Asian countries including Japan in the construction of LNG terminals. Canada is a country that can satisfy Japan's hope to secure long-term, stable procurement of energy. Combining the favorable investment environment and sound fiscal condition with world-class reserves of resources, Canada aims to supply more energy to Japan and other Asia-Pacific countries.

(Japan) JBIC Governor Okuda : After the earthquake disaster, LNG has become particularly important. When we look at LNG projects from the perspective of financing, the key is procurement stability based on long-term contracts and the price-setting method. In the LNG business, it is essential to manage opportunity, such as shale gas production, and risk, such as a cost increases. It is important to establish the stable, lasting and mutually beneficial relations. The interested parties would need to cooperate to meet the new financial needs.

Session 1 : LNG Demand and Supply Outlook

Qatargas : Qatargas is the world's largest LNG supplier and has an excellent track record of reliability and operational safety. To enhance energy security, Qatargas will continue to supply LNG to customers and will also seek new opportunities. Qatargas hopes to further strengthen its cooperative relationship with Japan.

Chubu Electric: LNG prices in the East Asian market have stayed at very high levels

compared with prices in the U.S. and European markets, and it is important to maintain an appropriate level of price. Chubu Electric hopes that its participation in a U.S. LNG export project will make it possible to directly link the U.S. and East Asian markets, promote changes in the market structure and result in the stability and reduction of LNG procurement prices.

CPC : In addition to concluding stable, long-term contracts, CPC will include in its portfolio new supply sources, such as the United States, Canada and Australia. CPC pays close attention to procurement by the Henry Hub pricing. If governments promote the establishment of LNG supply chains and technological innovation, it will help to meet global LNG demand. LNG will play an increasingly important role, so all participants should engage in more open dialogue in the changing market.

TOTAL: Over the 20 years from 2010 to 2030, global LNG demand — demand in Europe, Asia including China and India, and the Middle East — will grow at an annual rate of 4.5%. To meet the demand, new projects will be necessary. But, including competition regulation, new projects face many constraints. The tight supply-demand balance of gas is likely to support gas prices in Europe and Asia in the future. TOTAL will supply gas to Japan, South Korea, China, India and Europe.

Session 2: The Changing LNG Market in Asia-Pacific , Europe and North America

Tokyo Gas: "Stability" and "economic efficiency" of the LNG supply are important. Stable supply should continue to be secured through efforts by both producers and consumers. However, regarding economic efficiency, LNG prices for Japanese users are deviating far from the international standard because of the gas-oil link. If the deviation continues, gas consumption will be curbed and a shift to other energy sources will proceed. Therefore, by introducing the Henry Hub pricing and a link to the European gas price, Tokyo Gas aims to bring LNG prices in East Asia to the international standard. Moreover, upstream development is necessary from the perspective of stable supply, and support by the Japanese government is also very important.

Oxford University : The gas price-setting methods used in the three markets are not rational. They are merely the products of the historical backgrounds of the markets. Prices in Europe are also beginning to reflect the hub price, so the situation is changing.

Prices in Russia have also approached the hub price. The gas-oil link adopted in Japan has lost its rationality. The LNG price should be linked to the hub price through the creation of the Asian market, for example, although that may take time. Discussions should start based on a rational proposal.

Institute of Energy Economics, Japan : As a result of a decline in consumption in the field of electric power, the competitive relationship between gas and oil has weakened, so the gas-oil link has lost its rationality. It is inappropriate to link the gas price to the crude oil price, which is considerably affected by movements in the financial market. It is necessary to come up with new ideas that will achieve stable supply of gas and the sound development of the market. Keeping in mind the need to increase and diversify the supply sources of gas, we propose a new pricing formula for Asia, Y=αJCC+βHH（α＋β＝1, in place of the gas-oil link.

GDF Suez: The development of the European gas market will take some time. That is because it is necessary to resolve various challenges one by one, including economic issues such as the growth rate of demand, individual countries' energy policy issues related to CO2 emission cuts and low carbon preference and a departure from nuclear power. LNG prices in Europe are more complex in Asia, since the gas oil linked price and the market linked are coexisting in Europe. The price setting mechanism is the key point of discussion.

Exxon Mobile: In line with an increase in global power demand, gas demand is expected to grow by more than 60% by 2040. We are proud of our partnership with Qatar, which is the pioneering leader of the global LNG market. Intensive capital commitment requires a predictable regulatory environment and fair competition as well as an open import policy, strict compliance with contracts and market-based pricing. Both industries and governments need to consider such challenges over the long term, namely based on a span of 10 years, rather than on a single-year basis.

Pertamina: Development of gas/LNG infrastructure is essential to efficient supply and demand. In Indonesia, domestic gas demand is strong, so Pertamina has a role to play not only in gas export but also in domestic gas supply. Indonesia will shrink the gap between domestic prices and international prices gradually. Regarding new contracts to be concluded in the future, the pricing formula may be reviewed.

ONGC : India is already the world's fourth-largest energy consumer, and its energy consumption is certain to continue growing considerably in the future. The combined capacity of existing LNG terminals in India is 10 million tons, and we will increase the capacity by 53 million tons over the next five years. For now, India is trying to obtain LNG prices linked to the Henry Hub price and is seeking competitive, independent prices. On the other hand, India understands the need to maintain the motivation for producer countries to make investment, and it is hoping to create a win-win situation through dialogue.

Session 3: New Frontier for Gas Supply Chain

Cheniere Energy: Although the issuance of U.S. gas export licenses may take years, the U.S. government authorizes export if the export, including its economic terms, serves public interests. We are optimistic about future prospects. The United States will likely become a major gas exporter in the future.

U.S. Department of Energy: The proportion of shale gas in the overall gas supply in the United States is expected to jump from 23% in 2010 to 49% in 2035. As for the supply-demand balance, the oversupply is being resolved, and after 2020, domestic supply will surpass the consumption rate and the United States will become a net exporter. The United States decides whether to authorize export of natural gas in light of such factors as domestic gas supply and energy security. Currently, the United States is wrapping up the investigation related to export licenses. .

Chevron: LNG demand will continue to grow, doubling by 2025. LNG projects are huge and complex, involve various interested parties and require a large amount of initial investment. Moreover, it takes more than 10 years from the initial discovery of reserves to the launch of the project. Chevron plans to start operating three projects in Angola and Australia by 2016.

Alaska Department of Natural Resources: In the Alaska North Slope region, there are more than 200 trillion cubic feet of gas reserves as well as oil reserves. As there are also several unexplored areas, more gas reserves may be discovered. In this region, there are also world-class reserves of non-conventional gas, including shale gas reserves estimated at 100 trillion cubic feet and gas hydrates. The state of Alaska has obtained an export license from the Department of Energy. The state has been exporting a total of

2.5 trillion cubic feet of LNG to Japan over a period of more than 40 years.

Gazprom: Gazprom accounts for 15% of the global gas production and 18% of the global gas reserves. In recent years, Gazprom has also entered the power generation business. In the Far East, Gazprom is operating the Khabarovsk–Vladivostok PL project. Primarily, this project is intended to meet domestic gas demand in Russia. However, there is also a plan to export gas from Vladivostok. It will become an Asian hub and meet demand in Japan and other Asian countries.

Governor of the Fukui Prefecture: If an "energy highway" comprised of such facilities as LNG terminals and gas pipelines are built on the Sea of Japan coast, they will provide alternative functions for gas facilities on the Pacific coast in times of disaster. Moreover, the supply chains between Japan and producers such as Russia, the United States and Canada will be strengthened. From the perspective of seeking the best energy mix, LNG is an important option. As Fukui Prefecture is close to two major consumer regions, Osaka and Nagoya, it is the most suitable location for LNG terminals and thermal power stations. Fukui Prefecture will play an important role in the formation of a "Sea of Japan energy axis."

Anadarko Petroleum: An offshore gas field in Mozambique was discovered under a seabed more than 1,500 meters deep, but Anadarko will operate it safely based on its experience. Historically, Anadarko has been very active in deep-sea gas extraction. Future gas development in Mozambique will become increasingly beneficial for Mozambique and the global LNG market.

Nigerian National Petroleum Corporation: Nigeria and Japan have a long-term, strategic partnership. Nigeria has not concluded long-term gas supply contracts with Japan, but since the first export of gas from Nigeria to Japan in 2006, gas exports have increased. In 2011, 3.4 mtpa out of the 22 mtpa of the gas exported from Nigeria was shipped to Japan. Nigeria is continuing gas development and is planning to diversify its long-term supply destinations to include Japan and other Asia-Pacific countries.

BP: The amount of global reserves of fossil fuels is sufficient to meet demand. However, production is becoming difficult and costly. Gas fields to be developed in the future are all difficult to develop. BP will develop gas resources in frontier regions based on its experiences by maintaining transparency and continuing technological innovation.

Under these circumstances, BP will make sure to supply gas to the Asia-Pacific LNG market. To that end, solidarity between industry, customers, partner companies and governments is essential.

Session 4: LNG finance and technology

JOGMEC : JOGMEC provides financial and technical support related to upstream development activities by Japanese companies. It is operating 330 projects, including LNG projects in Indonesia, Canada, Australia and Mozambique. In addition, JOGMEC is conducting joint research on GTL (Gas-to-Liquid) technology and methane hydrates with foreign state-run oil companies and other entities. JOGMEC will continue to provide financial and technical support in order to ensure stable supply and appropriate pricing.

JX Nippon Oil and Gas Exploration: JX Nippon Mining & Metals is participating in the Tiga project in Malaysia and the Tangguh and PNG projects in Indonesia. The project cost has risen. For the formation of a financing scheme for a gas project, cooperation between the government and companies of the gas-producing country and the government, companies and financial institutions (public and private institutions) of the gas-consuming country is essential. It is necessary to consider how to provide international financing for energy projects in order to adapt to the growing project size and increasing complexity.

IEA: There is a sufficient amount of LNG reserves. The issue is whether or not sufficient investment in development will be made. The challenges include a rise in the development cost in Australia, a lack of infrastructure and skilled workers arising from development in remote areas in East Africa and other regions and a rapid increase in domestic demand in the Middle East. To increase investment in LNG, it is necessary that governments, companies and international organizations provide cooperation, including international exchanges, in implementing policy measures to develop a favorable investment environment.

Royal Dutch Shell: Shifting from coal and oil to natural gas will be the most economically efficient solution to the climate change problem. Technological advance will be the key to natural gas development. Royal Dutch Shell will continue to ensure stable supply and remain cost-competitive. Technological advance will increase gas

supply to the market and reduce the environmental impact. Technological advance will make it possible to deal with a relentless cost increase, supply more gas at reasonable cost and satisfy demand.

NYK: In line with growth in demand, the global number of LNG vessels will increase by 40% from 360 vessels to 500 vessels. Regarding LNG vessels, there is still room for technological innovation in terms of vessel size, tank system and propulsion systems. Around 3,000 skilled crew members are required to operate 150 LNG vessels, and this poses a serious challenge. NYK will contribute, in terms of both tangible and intangible aspects, including technology and education, to the reduction of the cost of transporting LNG and to safe voyages.

JGC: Since constructing an LNG plant in Brunei in 1974, JGC has positioned the construction of LNG plants as its main business. So far, JGC has constructed LNG plants in nine countries. Solving technical problems and ensuring the quality and reliability of EPC are important elements of a successful implementation of an LNG project, and JGC has made contributions in this respect. In the future, JGC will acquire interests in gas fields.

Chiyoda Corporation: In addition to expanding the size of liquefaction facilities, it is necessary to construct such facilities under harsh conditions in extremely cold and hot regions. To ensure high quality and reliability under such conditions, various innovative solutions will be required. Chiyoda has experience in and an excellent track record of involvement in megaprojects. In the future, in addition to developing technology related to floating LNG facilities, it will be necessary to diversify the locations of plants to include the Arctic Region, for example and the resource types to include non-conventional gas and other resources.