

Summary of “Natural Gas Market in Asia: Measures for Stabilization”

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This research, entitled “Natural Gas Market in Asia: Measures for Stabilization” has been undertaken by the Institute of Energy Economics Japan (IEEJ) on the part representing the Japanese side, and the Petroleum Planning & Analysis Cell (PPAC) on the part representing Indian side, wherein the two institutions surveyed the Asian gas market and analyzed it from various points of view, and compiled the outcome into a joint report. The same parties involved in the “FY2005 Global Oil Supply/Demand System Survey (Study on Asian Oil Market Stabilization Measures)”.

Based on the analyses, the present joint study has made the following recommendations for stabilizing the Asian gas market:

- i) Establish a flexible and transparent gas pricing systems
- ii) Expand gas supply capability and diversify supply sources
- iii) Develop natural gas infrastructure
- iv) Secure adequate investments into exploration and development as well as construction of natural gas infrastructure
- v) Share information and research outcomes concerning gas demand/supply and trade
- vi) Promote regional cooperation on governmental, business, and academic levels

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This research entitled “Natural Gas Market in Asia: Measures for Stabilization”(hereinafter referred to as the “present joint study”) has been jointly undertaken by the Institute of Energy Economics Japan (IEEJ) on the part representing the Japan’s side, and the Petroleum Planning & Analysis Cell (PPAC) on the part representing India’s side wherein the two institutions surveyed the Asian gas market and analyzed it from various points of view as listed below, and compiled the outcome into a joint report. The same parties involved in the “FY2005 Global Oil Supply/Demand System Survey (Study on Asian Oil Market Stabilization Measures)”¹ (hereinafter referred to as the “previous joint study”).

The following eight items have been chosen as the research subjects to be analyzed in relation to the stabilization of the Asian gas market:

- i) Trends and the future outlook of the global as well as Asian gas supply and demand;
- ii) Policies of major gas exporting countries;
- iii) Policies of major gas importing economies in Asia;
- iv) Current situation and challenges for the Asian LNG market;
- v) Present status and issues concerning gas pipelines for Asia;
- vi) Present status and issues concerning gas pricing in the Asian market;
- vii) Present status and issues in the regional cooperation for stabilizing the Asian gas market; and
- viii) Recommended approaches and measures for stabilizing the Asian gas market.

This summary report discusses the significance of the present joint study in the first section, followed by sections describing the background and past development of the study, an overview of the above joint report, and the main accomplishments as well as the future challenges in the final section.

♦ This paper is an excerpt from a research work commissioned by the Ministry of Economy, Trade and Industry in FY2007, under the title of “FY2007 Global Oil Supply/Demand System Survey Report (Measures for Stabilizing the Asian Gas Market), and has been released with the permission of the Ministry. We thank the related parties in the Ministry for their understanding and cooperation. Additionally, this paper has also been contributed by Ken Koyama, Senior Research Fellow, Director, Strategy and Industry Research Unit, Hiroyuki Ishida, Senior Economist, Mitsuru Motokura, Senior Coordinator, Michihito Watanabe, Senior Researcher, and Shusaku Sato, Researcher, all of whom working in Strategy and Industry Research Unit.

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¹ Refer to the report entitled <Summary of “Study on Asian Oil Market Stabilization Measures”> posted on the IEEJ Website, <http://eneken.ieej.or.jp/en/data/pdf/386.pdf>, February 2007.

1. Significance of the Japan-India joint study

As mentioned earlier, IEEJ was also involved in the previous joint study. In the first section of the summary report of the previous study mentioned two significant points of the study, i.e. (a) the importance of the chosen research theme (the measures for stabilizing the Asian oil market) itself, and (b) the fact that India, that is increasing its presence in the global oil market, was chosen as the joint study partner. These two points are, to a large extent, also applicable as the significance of the present joint study. It has important implications for the present study that the research theme was to investigate the measures for stabilizing the Asian gas market, and that India was chosen as the joint study partner that has an increasing importance in the global gas market.

Concerning the first point of significance, since the use of natural gas was not so prevalent in Asia and that the number of gas importing countries was limited, there had hardly been a notion of an “Asian gas market” and consequently the awareness to the issues of its “stabilization” had rarely been nurtured. However, the Asian natural gas demand expanded rapidly from 131 Bcm in 1990 to 348 Bcm in 2006, representing 13% of the global gas demand. As will be described later, it is expected to continue its steady growth towards 2030, registering an increasing share of the primary energy supply in the meantime. Also, while there were only five natural gas importing countries (Japan, Korea, Taiwan, Singapore, and Thailand) in the past, India and China started gas importation in 2004 and 2006, respectively. It is now expected that both importing quantity and the number of importing countries will increase in the future, and that the import dependence will rise. Along with these trends, the notion of an “Asian gas market” is likely to form in a more substantive way.

Meanwhile, on the supply side, several elements of instability have been emerging in recent years. The examples include Indonesia’s curtailment of LNG export, the Ukraine gas crisis in early 2006, a gas carter concept by exporting countries, and the cost inflation for gas development projects. The gas export prices for Asia are also on the rise, although not so fiercely as that of crude oil. It is conceivable that these phenomena are prompting the formation of a common perception about the need for “stabilizing” the Asian gas market among the gas importers in the region.

Having India as a partner was the second important element. As the previous joint study states, “with its recent brisk economic growth, India has been attracting much attention in global politics and economics arena. At present, China outperforms India in both economic size and growth, attracting greater attention. However, India has a potential of becoming a giant growth market comparable to China on its large population size, fast population increase and its technical capabilities including information technology in the long run. In this sense, industrialized economies including European nations as well as the U.S., natural resources suppliers like the Middle East and Russia, and Asian nations such as Japan and China are all paying extremely keen attention to India’s political and economic developments.”

As of 2006, natural gas demand in India stood at 38 Bcm or about 45% of that of Japan, and its share of the total primary energy supply was 8%, indicating that India’s modest degree of natural gas utilization. However,

the use of natural gas is expected to continue to grow steadily while the expansion in the domestic production lags behind. India started importing LNG in 2004 and is currently considering gas imports via pipelines from Iran and other countries. On the other hand, growing natural gas demand, recent increases in LNG price, or price negotiations and coordination with transit countries involved in the pipeline gas imports projects are also urging India to deal with natural gas supply security.

Under these circumstances, as stated in the summary for the previous joint study, many major players in the international energy market are trying to enhance their relationship with India. India itself is also actively developing its foreign policies including energy related ones. Japan has also been trying to strengthen its relationship with India through summit meetings, high-level governmental consultations, and various other cooperative projects. The previous and present joint studies can also be considered as part of such efforts.

2. Background of the Japan-India joint study

2.1 Japan-India cooperation in the energy field

The previous joint study was initiated as part of an energy cooperation between Japan and India as agreed through the first Round Table of Asian oil and Energy ministers held in Delhi in January 2005 and a Japan-India summit meeting held in May the same year. More specifically, an agreement on a comprehensive energy cooperation initiative was agreed between Japan's Ministry of Economy, Trade and Industry (METI) and India's Ministry of Petroleum and Natural Gas (MoPNG) in September 2005, and the respective ministers signed a joint statement in which the "launching of a joint study on measures for stabilizing the Asian oil market" was mentioned as one of the action plan items. Based on this, the previous joint study was implemented. The following several sections recapitulate the developments of the Japan-India energy cooperation as described in the summary for the previous joint study.

In January 2005, the first Round Table of the Asian Oil and Energy Ministers took place in Delhi. Energy ministers representing eleven Asian countries² gathered to hold the first ever dialogue between oil producers and consumers in the region. India chaired and Kuwait acted as the co-chair for this conference whereby discussions were held under the main theme of "Regional cooperation in oil economy: Stability, security, and sustainability through mutual dependence". Although energy experts had widely acknowledged that a stable oil market, energy security, and a sustainable oil economy were important, it was epoch-making that all the participating countries in the conference re-emphasized the above importance, expressed their strong determination to cooperate in this regard, and became very conscious of the regional entity called Asia. Through the discussion at the conference, the participants shared a broad recognition on the lack of basic information and analysis concerning the functions of the Asian oil market, as well as the need for research to develop a perspective for future Asian oil market.

² Participants included six Middle Eastern countries, i.e. Saudi Arabia, Iran, Kuwait, Qatar, UAE, and Oman; Japan, Korea, China, Malaysia, and the host country, India from East and South Asia. Indonesia eventually failed to take part in the conference in the aftermath of the heavy tsunami damages.

Following the above event, a Japan-India summit took place in Delhi in April 2005 to address bilateral relations and a broad range of regional as well as international issues of common concerns for the two countries. Then Japanese Prime Minister Junichiro Koizumi and his Indian counterpart Manmohan Singh issued a joint communiqué that touched on the importance of energy cooperation including oil and natural gas area. The communiqué also stated that the two governments would enhance their cooperation in energy and environmental areas including sustainable development and environmentally-friendly technologies to address matters of international challenges. In this respect, it was confirmed that the two governments would give greater priority to improve energy security, energy efficiency, energy conservation and pollution-free fuels, and would cooperate in exploration, production and downstream projects in the hydrocarbon sector including those involving third party countries and also to work together to improve the Asian oil market as well as to expand investment into the Asian energy infrastructure.

In September that year, then Japanese Minister of Economy, Trade and Industry, Shoichi Nakagawa and Indian Minister of Petroleum and Natural Gas, Mani Shankar Aiar met in Tokyo and reached an agreement on cooperation in oil and natural gas, energy conservation and other energy areas in response to the summit communiqué. They then issued a joint statement, which cited the implementation of a joint study undertaken by research institutions in Japan and India concerning the stabilization of the Asian oil market as one of the seven action plan items.

The outcome of the previous joint study was reported to METI in October 2006. As a further development in the Japan-India cooperation, in July 2007, the second meeting of the “India-Japan Energy Dialogue”, a periodic ministerial-level energy policy dialogue between India and Japan, was held in Delhi between the Deputy Chairman of the Planning Commission of India Montek Singh Ahluwalia and then Japanese Minister of Economy, Trade and Industry Akira Amari. In a joint statement issued after the meeting, it was declared that both sides reached a conclusion that the two countries were to cooperate with each other in energy efficiency and conservation, electricity and coal, renewable energy, and oil and natural gas. For oil and natural gas, “Cooperation in Exploration & Production in Third Countries”, “Collaborative Research on Methane Hydrates”, “Cooperation and Information Exchange on Hydrogen”, “Cooperation for Energy Efficiency and Conservation”, “Cooperation on Strategic Oil Reserves” and “Energy Studies in Asian Market” were mentioned.

In August 2007, then Japanese Prime Minister Shinzo Abe and Indian Prime Minister Manmohan Singh signed a Joint Statement on the “Roadmap for New Dimensions to the Strategic and Global Partnership between Japan and India” as well as a separate “Joint Statement by Japan and the Republic of India on the Enhancement of Cooperation on Environmental Protection and Energy Security”. In these contexts, the two leaders expressed their determination to take part in a flexible, fair and effective global framework and concerted international actions after 2013 in which all countries participate to address climate change. At the same time, the two leaders recognized the importance of ensuring synergy between economic growth and environmental protection through energy conservation and related technologies. They also agreed to develop specific cooperation projects in the energy sector, including cooperation in energy conservation, improved energy efficiency and in clean energy

technology, among other issues.

2-2 Position of the joint study in the Japan-India energy cooperation As mentioned earlier, the previous joint study was implemented as one of the seven action plan items cited in the joint statement between then METI minister Nakagawa and MoPNG minister Aiar, the outcome of which was submitted to METI in October 2006 under the title of “FY2005 Global Oil Supply/Demand System Survey Report (Study on Asian Oil Market Stabilization Measures)”.

Also as discussed in the previous section, in the second meeting of the “India-Japan Energy Dialogue” in July 2007, the subject of “Energy Studies in the Asian Market” was taken up as one of the collaborative actions in the oil and natural gas sector. In that forum, the outcomes of the previous joint study were appraised and the importance of a study concerning the measures for stabilization of the Asian gas market was discussed as well. With this experience and knowledge in the backdrop, IEEJ subsequently won a tender launched by METI and was commissioned for the “FY2007 Global Oil Supply/Demand System Survey (Study on Asian Gas Market Stabilization Measures)”. It was also decided to carry out the study jointly with a research institution in India, for which the Indian government has once again nominated PPAC.

IEEJ and PPAC consulted with each other on the details and framework of the study, and held workshops in February and March 2008, respectively in Tokyo and Delhi. In the February workshop attended by six IEEJ representatives and three representatives from India’s side, the research structure, topics and methodology were discussed. In the March workshop in Delhi, the three participants from IEEJ and more than ten from PPAC reviewed respective draft reports and discussed the final compilation of the report.

3. Overview of the Japan-India joint Study Report

The report structure and the work assignment in the final agreement are as shown below:

| Chapter | Titles | Assigned to: |
|---------|---|--------------|
| 1 | Natural Gas in Asia: Trend and Outlook | IEEJ |
| 2 | Policies of Natural Gas Exporting Countries | PPAC |
| 3 | Policies of Natural Gas Importing Economies | PPAC |
| 4 | Asian Liquefied Natural Gas Market: Current Situation & Future Challenges | IEEJ |
| 5 | Pipeline Gas Trade in Asia: Problems and Prospects | PPAC |
| 6 | Gas Pricing in the Asian Market: Mechanism and Issues | IEEJ |
| 7 | Regional Energy Cooperation: Prospect for Natural Gas | IEEJ |
| 8 | Measures for Asian Gas Market Stabilization | PPAC |

The summary of each section is given below:

Chapter 1 Natural Gas in Asia: Trend and Outlook

According to the forecast by IEEJ, the primary energy consumption in Asia is expected to grow at an average annual rate of 2.9% along with a robust economic expansion, to reach 6,502 Mtoe (million tonnes oil equivalent) in 2030. Meanwhile, the natural gas demand is projected to grow at 5% per annum, due to its relative environmental superiority and infrastructure development, reaching 1,175 Bcm in 2030.

With respect to the supplies, the natural gas production is expected to increase steadily mainly in China and India. However, the expansion in natural gas production will not be fast enough to meet the growing demand, causing Asia's dependence on natural gas imports from outside the region to go as high as 39%.

Currently a number of projects are under way for LNG and international gas pipelines for Asian destinations. However, escalating project cost and the emergence of resource nationalism are deteriorating the investment environment, raising concerns that some of the projects may be delayed or cancelled. For the stabilization of the Asian gas market, it is crucial that sufficient investment be made not only into upstream but also into the downstream infrastructure.

Chapter 2 Policies of Natural Gas Exporting Countries

Chapter 3 Policies of Natural Gas Importing Economies

In these chapters, policies and strategies taken by major gas exporters (Chapter 2, including potential ones) for Asia, and those by Asian gas importers (Chapter 3) were analyzed. For Chapter 2, eleven countries including Russia, Qatar, Iran, UAE, Yemen, Oman, Indonesia, Australia, Algeria, Nigeria, and Egypt were reviewed for natural gas reserves, supply/demand, import/export, industry structure as well as relevant policies. These countries are important as either existing or future LNG and pipeline gas suppliers for Asia. For Chapter 3, five LNG importing economies of Japan, Korea, Taiwan, China and India were reviewed for supply/demand, gas infrastructure, and energy policies.

Chapter 4 Asian Liquefied Natural Gas Market: Current Situation & Future Challenges

The international natural gas trades in 2006 amounted to 748 Bcm, of which 72% was pipeline gas and the remainder was LNG. Most of natural gas deliveries destined for Asia were made in the form of LNG. Because of a steady rise in gas demand itself, sluggish growth in pipeline gas supplies, and the improved cost competitiveness, the LNG demand has been growing at an annual rate of 8% for the last ten years, exceeding the growth in the trade via international pipelines.

The global LNG demand in 2007 was 172.6 MT (million tonnes) in which Asia accounted for 112.5 MT or 65% of the world total. While LNG trades are made mainly under mid/long-term contracts, the ratio of non-conventional Equity/Branded LNG contracts is expected to increase for the European or U.S. deliveries. In order to reduce the investment risk involved, LNG projects have traditionally been operated in an integrated manner encompassing the upstream (exploration, development, production, and liquefaction), midstream (transportation), and downstream (regasification and distribution), wherein players focused on respective areas

of responsibilities. However, as a number of players have now established value chains of their own, the above demarcation is becoming increasingly blurry in recent years.

According to IEEJ's forecast, the global LNG demand is expected to grow at a rate of 3.6-4.3% to reach 435-517 MT in 2030. Likewise, the Asian LNG demand is projected to steadily rise to 182-223 MT by 2030. The potential supply capacity could grow to 233.5 MT or higher toward 2030. The transactions under the Equity/Branded LNG contracts originally for Europe or U.S. are likely to balance the Asian LNG supply and demand in a short to medium term. As challenges for the Asian LNG supplies, deteriorating investment environment due to cost inflation and the emerging resource nationalism, the uncertainty of Indonesian exports, the extent of infrastructure development and domestic gas pricing systems could be mentioned.

Chapter 5 Pipeline Gas Trade in Asia: Problems and Prospects

Although a substantial increase is projected for the LNG supplies, natural gas supplies via international pipelines are also important in satisfying the gas requirement in Asia. In this section, the present situation and challenges on pipeline gas exports from Iran, Turkmenistan, Myanmar, Malaysia, Indonesia, Qatar, and Russia are discussed.

While a number of pipeline gas export projects are under study at the moment, their realization will face challenges such as gas pricing, project economics and financing, gas demand creation in the importing country, infrastructure development, transit issues, environmental issues related to construction and operation of the pipelines, and other geopolitical factors.

Chapter 6 Gas Pricing in the Asian Market: Mechanism and Issues

In most of the Asian gas importing countries, the domestic gas prices are regulated. In traditional gas importers such as Japan, Korea, or Taiwan, there are either systems or markets through which fluctuating import prices could be passed onto the domestic prices. However, in emerging LNG importers such as China or India, the domestic gas prices are almost always controlled by regulations at a level below international prices.

While the LNG prices for Asia are mostly linked to crude oil prices, the extent of such linkage may differ depending on the individual LNG sales agreement. Although there is not much information on the pricing for pipeline gas transactions, it is likely that the majority of contract prices are determined in relation to prices of crude oil or petroleum products. Looking at the LNG prices for main markets, it appears that the prices for EU have been lower than the prices for the traditional Asian importers. Except for the periods of price spikes during 2003 through 2006, the prices for U.S. have been lower than that for Japan. In recent years, prices for Korea or Taiwan have stayed at a higher level than that for Japan.

Even though the domestic gas prices in the emerging LNG importing countries have been raised, the recent upsurge in the international gas prices has widened the gap between domestic and international prices. For China

and India, it is essential to continue raising the domestic gas prices in a given social constraints. With respect to international prices, the rationale to use the oil-linked mechanism for LNG pricing is diminishing as oil and gas are decreasingly competing in importing countries. Asian importers should seek appropriate pricing systems that rightly reflect the true value of natural gas in respective domestic markets..

Chapter 7 Regional Energy Cooperation: Prospect for Natural Gas

As seen in Chapter 1, Asian countries' dependence on natural gas imports from outside the region is expected to increase in the future, and the gas market is increasingly globalized. Considering rising international gas prices, resource nationalism, supply concerns, and the market power by gas exporters, gas supply security is becoming an important issue in many countries. While each importer so far has independently dealt with the situation to improve the supply security, the importance of regional cooperation to stabilize the Asian gas market is heightening if the international pipeline projects, strategic gas stockpiling initiative, or global environment issues are taken into consideration.

The importance of cooperation within the Asian region has been recognized in areas such as Northeast Asia, Southeast Asia, or South Asia, as well as Asia as a whole in recent years. To facilitate natural gas related cooperation within Asia, various meetings, seminars, or international conferences are being held. Examples of bilateral or multi-lateral consultations include energy dialogues between Japan and India or China, ASEAN's TAPG project, Northeast Asia Petroleum Forum, and ASEAN+3. However, these frameworks are all at initial stages and have not generated concrete outcomes contributing to the stabilization of the Asian gas market yet.

In order to secure natural gas supply, the Asian region should overcome obstacles for establishing a regional cooperation, including the diversities of Asia, political confrontations, insufficient development in domestic and international gas infrastructure, and the relatively low position of natural gas in the energy mix. In that process, EU's experiences in energy cooperation may serve as a useful precedent, since both region share concerns over increasing dependency on natural gas imports and gas supply security.

Chapter 8 Measures for Asian Gas Market Stabilization

Based on the analysis in the previous chapters, the following recommendations are presented to stabilize the Asian gas market:

Price reforms:

In light of increasing international trades for natural gas and heightening inter-dependency between the importing and exporting countries, gas pricing reform will play an important role to stabilize the Asian gas market. Among the gas importers in Asia, Japan has made significant progress in liberalizing the gas market and the pricing. However, in China and India where substantial demand increase is expected, the extent of restructuring in their gas industry or pricing systems is not sufficient even though they have started tackling the issues. Similarly, in many gas-exporting countries, gas prices are regulated at a low level for political reasons.

These countries should establish a more flexible and transparent gas pricing system in a given social or economic policy constraints .

Expanding Supply to the Market:

For the stabilization of the Asian gas market, it is required that sufficient and competitive supply capability be secured. Gas exporting countries should be able to expand their export potential by increasing the production capacity or by improving inefficient consumption patterns.

Diversifying Supply Sources:

While the main gas supply sources for Asia are currently located in Southeast Asia or Middle East, supplies from Australia or Russia should be expanded to diversify the supply sources.

Developing inter-connectivity:

It would be necessary to accelerate construction of LNG import terminals and international pipelines to develop natural gas infrastructure within Asia and strengthen their inter-connectivity.

Facilitating flow of investment:

Exploration and development of natural gas as well as infrastructure development call for an enormous amount in investment, leading to a number of stranded projects due to a failure in securing the required investments. To establish or bolster institutions and organizations for providing financial support for natural gas projects in Asia could provide an effective means for securing adequate investments.

Sharing of information and research:

In the case of oil, sharing of supply and demand data or trading information is practiced to a certain extent through the dialogue between oil producers and consumers established under the International Energy Forum (IEF), and the Joint Oil Data Initiative (JODI). Likewise, sharing information and research outcomes concerning gas markets would be effective for the objective of stabilizing the Asian gas market. For that purpose, establishing a natural gas related research organization and enhancing collaboration between research institutions within Asia could be considered.

Regional cooperation:

Governments can play a significant role to decrease the risk associated to gas supply. It is important to ensure not only the government to government (“G-to-G”) cooperation but also to have cooperation on a business to business (“B-to-B”) or even an institution to institution (“I-to-I”) basis to stabilize the Asian gas market.

4. Outcomes of Japan-India Joint Study and Future Challenges (Conclusion)

In the summary of the previous joint study, three points were mentioned as the achievements of the joint

study. The first of which was the production of an analysis report through the joint work with the Indian partner on the important challenge to consider measures for Asian oil market stabilization. The second achievement mentioned was acquisition of an opportunity to understand India's perception or concept of the Asian oil market stabilization, whereas the third point was the establishment of one of the platforms for Japan-India policy talks on energy issues. The above points are applicable to the present joint study as well.

Given the perceived expansion of natural gas demand and imports, growing dependence on gas supplies from outside the region and the concerns over the stable gas supplies, it is considered quite opportune to study various measures for stabilizing the Asian gas market at this stage. Furthermore, it is significant that such a study has been undertaken jointly with an Indian partner, which as a nation has completely different gas demand and industrial structures. In particular, it was meaningful that discussions have been made from a different viewpoint placing importance on the gas supply via international pipelines, as opposed to the perception of Japan, a traditional LNG importer. Having such multi-faceted discussions held during this joint study enabled our solid understanding of India's perception or concept of the Asian gas market, which can be regarded as a major accomplishment in facilitating the future energy cooperation effort between Japan and India.

With regard to future challenges for the joint study to be utilized meaningfully, the summary of the previous joint study mentioned the following three points, namely, (a) how to materialize the outcomes of the joint study for "the stabilization of the Asian oil market", (b) how to link the outcomes of the study towards the enhancement of Japan-India relations, and (c) how to utilize the outcomes of the study to implement Japan's international energy strategy. These points are also applicable to the present joint study.

The first challenge could be replaced with "the stabilization of the Asian gas market". In the present joint study, attempts have been made to identify problems for stabilizing the Asian gas market, in relation to supply/demand, market structure, or regulatory systems. However, the study fell short of making proposals for specific measures or action plans to solve the problems. The respective governments and industry organizations should strive to stabilize the Asian gas market, based on the recommendations from the present joint study, while taking the individual national situations into account.

For the second and the third challenges, the governments of Japan and India should discuss how to share and utilize the outcomes of the present joint study. As noted earlier, the two governments have been trying to establish a cooperative framework and enhance their relationship in the area of energy, and the previous and present joint studies can be considered as part of such efforts. The traditional Japanese energy diplomacy has focused mainly on oil and gas producing countries, Northeast or Southeast Asian countries, whereas full-scale talks with India have begun only recently. It is therefore desired that the two countries carry out more in-depth discussions drawing also on the outcomes of the present joint study to enhance the cooperative relationship in the energy field. Furthermore, it would be meaningful for Japan to effectively utilize the outcomes of this joint study to promote the energy cooperation in the entire Asian region and also to facilitate dialogues with gas producing

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countries.

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