

## **Enhancing Natural Gas/LNG Supply Security**

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The year 2022 was an unusually turbulent year for the international energy market compared to recent past decades. Russia's military invasion of Ukraine sparked a full-fledged confrontation between the Western bloc and Russia. The Western bloc imposed an embargo on Russian energy, while the Russian pipeline gas supply to Europe was dramatically reduced. As a result, energy exports from Russia, the world's largest exporter of fossil fuels, became the biggest risk factor in energy supply. In this way, energy prices in the international market skyrocketed all at once. In particular, gas prices in Europe soared to unprecedented levels. As noted in "A Japanese Perspective on the International Energy Landscape (645)," the 2022 average Dutch TTF (Title Transfer Facility) price, a European natural gas benchmark, reached an all-time high of \$37.48 per million British thermal units (\$210 per barrel of crude oil equivalent). Temporarily, the TTF price hit an abnormal high of about \$100/MMBtu (close to \$600 per barrel of crude oil equivalent).

Factors behind the steep gas price hike included Europe's heavy dependence on Russian gas, Russia's pipeline gas supply to Europe plummeting to about one-fifth of normal levels, and the fact that no country in the global gas/LNG market possessed significant surplus production capacity like that of Saudi Arabia in the oil market. Global gas supply was shrinking as a decline in gas supply from Russia failed to be covered by any other country. Europe's loss of Russian gas led gas market players to fear that physical shortages where Europe would fail to procure gas even if wanting to do so could arise towards the winter, rattling the market. While the energy crisis under the Ukraine crisis led to higher prices and supply insecurity for all energy sources, the biggest problem was the European gas crisis.

However, the impact of the European gas crisis was not limited to Europe. Driven by concern about gas shortages, Europe stepped up its desperate actions to avoid the shortages. It took all possible measures, including thorough energy conservation and the use of coal and nuclear energy. As for crucial alternative gas procurement, Europe made desperate efforts to secure and expand LNG imports, including those from the United States. Europe rapidly expanded its U.S. LNG procurement by taking full advantage of the inherent flexibility of U.S. LNG supply. Europe thus became the largest importer of U.S. LNG and overtook Japan and China to take the position of the world's largest LNG-importing region. The impact of Europe's LNG procurement expansion was significant, exerting great pressure on the global pipeline gas and LNG market, where overall supply shrank due to the decline in Russian gas supply. The pressure led to the abovementioned abnormally high prices. While Europe was desperate and able to purchase LNG even at higher prices, it became difficult for low-income countries to purchase higher-priced LNG and gas. Asian and other developing countries faced electricity supply declines through fuel shortages for gas-fired power plants and a CO<sub>2</sub> emission increase through switching to coal-fired power generation to avoid electricity supply falls. In this sense, the European gas crisis was accompanied by serious global challenges regarding gas/LNG procurement.

Half a century ago, in 1973, the world was exposed to the enormous impact of the first oil crisis. As the Fourth Middle East War broke out, Arab oil-producing countries used oil as a weapon, threatening to cut oil supply in order to exert pressure on Japan and other major developed countries. At the same time, the Organization of the Petroleum Exporting Countries raised crude oil prices significantly. Driven by price hikes and concern about physical oil shortages, major oil consuming countries took exclusionary oil procurement actions. Thus, oil-consuming countries' collaboration and cooperation collapsed, demonstrating the great impact of the Arab oil embargo. Reflecting on the collapse of cooperation, developed countries began to implement full-scale energy security policies in response to the oil crisis. In addition, they established the International Energy Agency to rebuild and strengthen their cooperation.

While the oil crisis of 50 years ago was precisely related to supply in the international oil market, the problem under the Ukraine War can be positioned as a crisis of instability in gas/LNG supply, as well as a crisis of the overall international energy market. Efforts to diversify energy sources after the oil crisis have greatly expanded the use of gas/LNG, making gas/LNG one of the most important energy sources in Japan and the rest of the world. It goes without saying that securing a stable gas/LNG supply has become increasingly important. Based on the experience of the Ukraine crisis, a stable gas/LNG supply has taken on an even greater urgency and importance.

One of the issues that has attracted a great deal of attention in response to the emergence of the challenge of stable gas/LNG supply under the ongoing crisis is the importance of securing sufficient supply capacity. As Russia's pipeline gas supply has declined sharply in a manner to cut global supply, it is essential to secure sufficient supply capacity in order to avoid competition through exclusionary procurement actions and stabilize overall supply and demand. Given that Europe rushed to procure LNG while remaining cautious/negative about gas/LNG investment, the challenge remained difficult to resolve. However, an important milestone in this regard came as the conclusion at the Group of Seven Hiroshima Summit that investment in the gas sector can be appropriate, if implemented in a manner consistent with climate objectives, with consideration given to the Global South. An important point of the conclusion was that the appropriateness of investment was related not only to responses to the current gas crisis but also to the medium to long-term viewpoint of securing stable future supply and demand.

Furthermore, various efforts and initiatives to stabilize the LNG market and enhance LNG supply security were announced at the LNG Producer-Consumer Conference 2023 held on July 19, indicating that such efforts and initiatives would be materialized and enhanced further in the future. The LNG Producer-Consumer Conference has been aimed at stabilizing and developing the LNG market by promoting dialogue between LNG suppliers and consumers. For the first time, the IEA, along with the Japanese Ministry of Economy, Trade and Industry and the Asia-Pacific Energy Research Center, participated in the last meeting as a cosponsor and played an important role.

With regard to stockpiles, inventories, and buffer functions that are expected to play an important role in responding to supply interruption, a sudden tight supply-demand balance and imbalances in the LNG market, it was argued at the conference that measures to increase the market's flexibility and resilience should be explored through underground natural gas storage used mainly in Europe and the United States, Japanese and Singaporean initiatives to secure surplus LNG supply, and the enhancement of LNG and gas procurement contract flexibility and other flexible mechanism including swap trading, based on the characteristics of LNG and the gas market. In order

to secure investment from the medium to long-term perspective, gas/LNG investment should be consistent with decarbonization initiatives. In this respect, Japan's JERA Co. and Korea Gas Corporation, which are leading LNG importers in Japan and South Korea, announced an initiative to cooperate in promoting the reduction of emissions of methane as one of the key greenhouse gases in LNG value chains. In response, Japanese, U.S., European, Australian, South Korean, and other governments issued a joint statement to welcome the initiative. In addition, Nippon Export and Investment Insurance announced new support measures to strengthen LNG liquidity. Various measures and initiatives became achievements at the conference. Conference participants agreed to seek the enhancement of the IEA's role in gas supply security at its ministerial meeting in February 2024. In the year to mark its 50th anniversary, the IEA established in response to the oil crisis is reaching a turning point to deepen and expand its role in gas supply security. I would like to pay attention to future progress in relevant specific initiatives.

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