

## **50 Years from the Oil Crisis and the Next 50 Years**

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On July 25, the Institute of Energy Economics, Japan, held the 444th Forum on Research Works in a hybrid face-to-face and online format under the overall theme of "50 Years after the Oil Crisis and the Next 50 Years." In the hybrid meeting including the face-to-face portion at the Keidanren Kaikan Hall, the number of participants topped 900 on a registration basis. The year 2023 marks the 50th anniversary of the first oil crisis in 1973. We planned and implemented this meeting with an awareness of how the experience and lessons learned from the first-ever full-scale international energy crisis 50 years ago should be utilized for addressing the energy crisis triggered by the ongoing Ukraine crisis, potential future energy crises, and the challenge of energy transition based on decarbonization. With the awareness of the overall theme, seven reports were made along with my summary report. Based on these reports, we actively exchanged opinions in question-and-answer talks. In the following, I would like to extract and organize the important points of the seven individual reports from my own perspective, instead of summarizing them simply.

The first report, titled "What Happened in the Middle East 50 Years Ago? --Lessons to Remember Now," looked back on the first oil crisis and provided important lessons for the future. One of the key lessons learned from the oil crisis is that the collection and analysis of accurate and timely information on the Middle East, which is of vital importance for a stable energy supply for Japan and the world, and the implementation of countermeasures based on the analysis were insufficient at the time of the first oil crisis. Implementing measures based on the realities and needs of the Middle East is the key to ensuring stability in and stable energy supply from the Middle East. Although Japan's efforts over the past 50 years have achieved contributions to maintaining and enhancing its relations with the Middle East and securing energy procurement from the region, the presence of Japan in the region has been overshadowed by the growing presence of China and other emerging energy-importing giants. While meeting the needs of oil-producing countries in the Middle East, such as decarbonization and economic diversification, Japan should reconstruct its strategy on the Middle East by taking advantage of its strengths and characteristics. The future challenge for Japan is how to materialize the achievements of Prime Minister Fumio Kishida's recent visit to the Middle East.

The second report, titled "Natural Gas Market Trends – Market Stabilization Initiatives," focused on the issue of stable natural gas/LNG supply, which has suddenly become the world's most crucial issue due to the Ukraine crisis. In the wake of the oil crisis, the introduction of natural gas has been promoted worldwide to reduce dependence on oil. Because the use of natural gas/LNG as clean energy has progressed, they have grown significantly as one of the world's key energy sources. The stable supply of natural gas/LNG has been threatened by the Ukraine crisis, becoming an highlighted theme at the LNG Producer-Consumer Conference held last week. The conference pointed out the importance of short-term supply and demand stabilization and strengthening emergency response capabilities, as well as promoting investment toward medium- to long-term market stability. It cannot be overlooked that the enhancement of measures against methane leakage has become important for

ensuring consistency with climate targets and promoting investment in and the use of gas/LNG. At the 50th anniversary of its founding, the IEA is remarkably expected to play an effective role in strengthening natural gas/LNG supply security.

The third report, titled "Utilization of Nuclear Power -- Its Roles and Challenges," took up the domestic and international situation and issues surrounding nuclear power that is once again in the spotlight worldwide. In the wake of the oil crisis, mainly developed countries diffused nuclear power in order to enhance energy security. On the other hand, the pace of nuclear energy expansion globally slowed as electricity demand growth decelerated in developed countries amid progress in the liberalization of electricity markets. Various factors, such as the rapid expansion of renewable energy and the Fukushima accident, also affected the development of nuclear power around the world. As decarbonization efforts have become urgent and strengthening energy security has emerged as an urgent priority issue due to the Ukraine crisis, however, the promotion of the use of nuclear power as a quasi-domestic energy source and a stable baseload, zero-emission power source has attracted global interest. However, we must not forget that it is important to overcome challenges such as the securement of safety and social acceptability.

The fourth report, titled "Stable Supply of Critical Minerals -- Threat of Uneven Distribution," discussed the stable supply of critical minerals, which are strategic commodities of vital importance in the future energy transition. The expansion of renewable energy, electric vehicles and storage batteries will inevitably lead to an increase in demand for some minerals and materials. Depending on the degree of the expansion, the tight supply-demand balance and soaring prices for the minerals will become inevitable, highlighting the problem of uneven distribution in both production and refining/processing capacity. In particular, as the division of the world becomes real and serious, the economic security over critical minerals looms as an essential matter of concern that Japan and the world should never forget when considering future energy transitions. We have learned lessons from the threats posed by the tight supply-demand balance and excessive dependence on specific supply sources for strategic commodities during both the oil and Ukraine crises.

The fifth report, titled "Hydrogen/Ammonia and Negative Emissions -- Accelerating Promotion of Decarbonization," is also an essentially strategic element for considering the future energy transition. Without hydrogen/ammonia and negative emission technology innovations, the world cannot achieve both decarbonization and enhanced energy security. While great hopes are placed on hydrogen/ammonia and negative emission technologies, there are many challenges to their commercialization and social implementation. Dramatic technological development to substantially cut costs is required along with the development of relevant infrastructure and price support systems for promoting the diffusion of these technologies. Furthermore, international recognition and certification will be required for the diffusion of new technologies. Undoubtedly, international competition for rulemaking related to these technologies will grow in the future. Japan is required to win such a competition.

The sixth report, titled "Green Transformation Initiatives -- Transformation of Japan's Economic and Social Systems," discussed how to politically support and promote the transformation of the economy and society as a whole by promoting the abovementioned innovations and introducing new technologies and options. The transformation of the energy supply and demand structure based on the experiences and lessons learned from the oil crisis has brought about a social and economic structure transition. In Japan, energy efficiency improvement technologies have made great strides, becoming an indispensable catalyst for the development of the automobile, electronics and machinery industries. In order to promote clean energy investment to advance future energy transition, the world

is currently paying the most attention to the use of industrial policy. As the effects of massive support provided under the U.S. Inflation Reduction Act attract global attention, Japan will promote green transformation initiatives. Industrial policy was once regarded as Japan's area of expertise and criticized by the United States and other countries emphasizing market principles. However, the United States is now advocating a New Washington Consensus to promote industrial policy. The fate of industrial policy to support future energy transition and growth is attracting attention.

The seventh report, titled "Energy Transition in Asia -- Achieving Economic Growth and Zero Emissions," focused on the importance of Asia or the Global South as the driver of global energy demand growth for future global decarbonization and energy security challenges. As the world continues to be divided, it is increasingly important for developed countries to cooperate and collaborate to appropriately advance the energy transition in Asia in line with its realities, instead of forcing the energy transition on Asia in a condescending tone. In this respect, we should ascertain the realities regarding economic growth and energy efficiency improvement in Asia and consider an energy mix that satisfies the future energy needs necessary for Asian social and economic development. Assuming low economic growth and targeting excessive improvement in energy efficiency may cause a serious deviation from practical solutions. For Asia, which is expected to develop in the future, energy transition must aim at achieving both economic growth and zero emissions. Any failure to do so will become a serious problem that could intensify the North-South problem and deepen the division of the world.

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