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Thinking about Utility and Limitations of Market Mechanisms

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Amid the turbulent energy situation at home and abroad, interest in energy policy is growing worldwide. This is because the formulation and implementation of policies to respond appropriately to energy and climate change have become indispensable amid the strong recognition of the importance of such a response. A symbolic example is the fact that the Seventh Strategic Energy Plan of Japan, which was approved by the cabinet in February this year, is attracting a great deal of interest as having extremely important implications for the future of Japan.

There are various perspectives for considering energy policy. The most fundamental one may be the perspective of energy security to ensure a stable supply of energy as an indispensable good. Responding to environmental loads of energy use is also an important perspective of energy policy. Originally, pollution and local environmental problems such as air and water pollution had been central issues regarding environmental loads. Today, however, how to respond to climate change as a global challenge has become the most interest-attracting issue in the world.

Furthermore, the deepening division of the world has become an important issue in recent years, boosting interest in economic security significantly. In this sense, the need to reconsider energy security from this viewpoint has been recognized. Meanwhile, a contemporary perspective related to energy policy emphasizes industrial policy to stimulate energy sector innovation that has emerged as an indispensable element for realizing the energy transition.

Another important perspective that is closely related to the abovementioned perspectives is how to utilize market mechanisms. This represents an old and new question of how to think about the involvement of the government and policies in the energy market.

Historically, the involvement of the government and policies in the energy market intensified when energy issues were strongly recognized as a national challenge exerting an extremely great impact on people's lives and society as a whole, and vice versa. In the 1970s, including the oil crisis, for example, energy issues were strongly recognized as an important challenge affecting the survival and prosperity of the nation and its people, leading to a global perception that energy problems were too important to be left entirely to the market. Under such circumstances, energy markets and industries were often placed under tough regulations and controls for the great purpose of stabilizing the national economy and state.

However, this trend began to change significantly in the 1980s. Under the U.S. Reagan and British Thatcher administrations, there was a trend of economic liberalization, deregulation, and privatization that spilled over to the energy sector. A perception that energy issues, though important, should be left to the market as far as possible became a major trend, which started with the United States and the United Kingdom and expanded to the rest of the world. In Japan, the liberalization and deregulation of the oil market began in the latter half of the 1980s and led to the liberalization of the

electricity and gas markets in the 1990s. The oil market liberalization was completed at the beginning of the 21st century, followed by electricity and gas system reforms under an energy policy overhaul after the Great East Japan Earthquake and the Fukushima nuclear power station accident.

Liberalization and deregulation in the economic field, including the energy sector, are basically aimed at introducing and promoting competition to improve the efficiency of the market as a whole and thereby contribute to the national economy as a whole. If competition in the market is limited and remains at an insufficient level, inefficient and high-cost structures will be preserved to lead to possible stagnation. Emphasis was placed on the introduction of competition as an effective means of breaking through and improving the situation.

Energy market liberalization has been carried out not only in Japan but also in other major countries around the world for the aforementioned purpose. Although I cannot go into detail about the results and circumstances of the energy market liberalization due to a space constraint, I would like to conclude that all countries and all sectors introduced competition to dismantle surplus and idle equipment, implement efficient business operations, enhance thorough cost management, and pursue and emphasize economic efficiency in business investment. In this regard, the pursuit of market and competition principles has greatly transformed the world of energy in the direction of improving efficiency and achieving great effects.

At the same time, however, the thorough pursuit of efficiency and cost-cutting efforts have led to a reduction in spare capacity, reserves, and buffers required for responding to market fluctuations from the perspective of the energy market as a whole, making the entire market more vulnerable to unexpected fluctuations. A kind of fallacy of composition has emerged, in which the pursuit of thorough efficiency that is best for individual companies causes problems in the market and the system as a whole. As market competition intensifies, uncertainty about future business feasibility has increased, leading to the side effect of making it difficult to implement long-term business investments and contracts that are essentially necessary. The problem of inconsistencies between short-term and long-term optimization has also seemingly become apparent.

These phenomena indicate that the utility of market principles can be expected to function to the maximum extent when there is a considerable level of surplus and excess capacity in individual businesses and in the market and system as a whole. In other words, the principle of competition works extremely effectively for reducing the existing surplus capacity, or a kind of waste, and increasing overall efficiency. If the reduction goes too far and the market becomes vulnerable, however, it may become difficult for market principles alone to solve problems adequately.

Today's domestic and foreign energy markets apparently indicate that while the pursuit of efficiency continues to be important, there are various cases where the pursuit of efficiency alone falls short of solving problems. As electricity supply squeezes have been seen sometimes in Japan and various other countries around the world, securing sufficient supply capacity or spare capacity has become a serious challenge. In response to the growing demand for electricity for generative artificial intelligence and data centers, even developed countries are required to expand their electricity supply capacity. Furthermore, renewable energy power generation growth is required to be accelerated to meet the need for the expansion of decarbonized power sources, leading demand to increase for power storage systems and grid enhancement. As for nuclear power generation, it is necessary to provide institutional security, such as a financing mechanism that enables new nuclear power plant construction. Emphasis is thus being placed on policy initiatives that address the limitations of market mechanisms.

From a macro perspective, the emphasis put on energy security, the response to climate change and economic security issues, and industrial policy for innovation, all of which I discussed at the beginning of this essay, require the government and policies to intervene in the energy market appropriately and strongly, instead of leaving everything to the market. Energy security and environmental issues represent inherent externalities of the market. The more serious these externalities are, the more appropriate policy involvement is required. Although the utility of market mechanisms described above is expected to play an important role in the future, energy policies that respond appropriately to the current energy situation and the limitations of market principles will become increasingly important.

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