

## **Reviewing Japan's Energy Policy History (1): From High Growth to Oil Crises**

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When Japan's energy policy is considered, the Strategic Energy Plan is positioned as the most important and basic policy with the highest level of significance today. Since the First Strategic Energy Plan was formulated in 2003 based on the Basic Act on Energy Policy in 2002, it has been repeatedly updated to respond to the international energy situation and domestic challenges from time to time. As for the next or Seventh Strategic Energy Plan, the government is required to make policies that respond to the new situation including the enhancement of energy security based on the international situation after the outbreak of the Ukraine crisis, the formulation of an ambitious greenhouse gas emission reduction target for 2035 and a path to carbon neutrality in 2050, and the management of economic security amid the deepening division of the world.

The formulation and implementation of Japan's important energy policies, represented by the Strategic Energy Plan, have always been in line with the demands of the times. In light of this, I would like to launch a series of essays titled "Reviewing Japan's Energy Policy History" to provide a useful perspective on future policy challenges based on historical perspectives. In the first essay, I would like to examine energy policies for the period of between high growth and the oil crises.

After the post-war reconstruction period, Japan experienced rapid economic growth throughout the 1960s. Japan's real gross national product grew from 69.9 trillion yen (in 2015 prices) in 1960 to 182.9 trillion yen in 1970 with an average annual growth rate of 10.1% indicating double-digit growth over the decade. To support the high growth of the Japanese economy, primary energy consumption increased significantly with an average annual increase of 12.2% over the same period, a tremendous pace that exceeded economic growth. Behind this significant increase in energy consumption were the rapid development of energy-intensive industries and industrialization.

The key point of energy policies during this period was how to provide a stable, low-cost energy supply to the ever-expanding Japanese economy. With mass production and consumption becoming a prerequisite for the economy and society, there was demand at the time for the supply of as large an amount of cheap energy as possible. As a result, Japan's energy supply and demand structure changed dramatically. For postwar Japanese energy supply, the development of hydroelectric power as a domestic energy source and the utilization of domestic coal was extremely important. Then, hydropower and coal played a central role in Japan's energy supply. In 1955, coal accounted for 47% of Japan's primary energy supply and hydropower for 27%. Coal and hydropower thus commanded 74% of Japan's primary energy supply. In order to continue to meet the enormous increase in energy demand, Japan needed cheaper and more abundant energy sources. Among them was oil, particularly from the Middle East.

Then, crude oil production continued to increase significantly in the Middle East, with efforts made to find sales channels in the international market for abundant, inexpensive oil. The

combination of Japan's demand for cheap, abundant energy supply and the expansion of crude oil supply in the Middle East led to a sharp increase in oil consumption in Japan. Oil accounted for less than 10% of Japan's primary energy supply at the beginning of the 1950s, but overtook coal to become the largest energy source at the beginning of the 1960s due to an astonishing increase in consumption. In the first half of the 1970s, oil's share of Japan's primary energy supply topped 70%. The average annual growth rate of oil consumption between 1960 and 1970 reached as high as 19.7%.

In Japan, the rapid shift from coal to oil, a liquid fuel, as the main source of energy supply is sometimes referred to as the fluid energy revolution. This may be interpreted as an example of the energy transition in which Japan's energy supply and demand structure changed dramatically in some 20 years up to the first half of the 1970s. It should be noted here that this energy transition indicates that an economic demand for cheap, abundant energy sources naturally brought about the revolutionary change. From a policy perspective, it was extremely important to promote the expansion of domestic supply facilities and infrastructure to meet this rapid, significant increase in energy demand.

However, the rapid growth of energy demand and the fluid energy revolution supported by high economic growth came to an end due to the oil crises. As Japan was overly dependent on Middle Eastern or Arab oil-producing countries for the supply of oil as the main artery that supported the Japanese economy and was important as a strategic commodity, it was directly hit by the Arab oil embargo and the quadruple increase in crude oil prices during the first oil crisis. Japan was hit hard again by the outbreak of revolution in Iran, then the largest source of crude oil for Japan, and the suspension of crude oil production there and the subsequent further rise in crude oil prices during the second oil crisis.

The oil crises exposed the fragility of Japan's destined energy supply and demand structure featuring the remarkably low energy self-sufficiency rate and high dependence on the Middle East. In 1974, Japan recorded negative economic growth for the first time since the end of World War II and had an extremely strong sense of crisis that its high economic growth would end or even that the Japanese economy would sink. This sense of crisis shared throughout Japan became a springboard, leading to the implementation of a strong, comprehensive energy security policy.

The word "comprehensive" means that an all-round national policy was implemented. In order to improve the energy self-sufficiency rate, it was important to develop and promote domestic energy sources and curb energy consumption. For the energy consumption curb, thorough efforts were made to enhance energy efficiency and conservation, leading Japan to become the world's top runner in energy efficiency and conservation. Such efforts contributed to the development of the automobile industry through improvements in automobile fuel efficiency. For the development and promotion of domestic energy sources, Japan promoted the development of new energy sources and accelerated the use of nuclear power. In particular, nuclear power became the main substitute for oil in the power generation sector, making an important contribution to the diversification of energy sources as well as the improvement of the energy self-sufficiency rate.

In order to diversify risks and ensure a stable energy supply, multifaceted efforts were made, including the diversification of energy sources and the reduction of dependence on the Middle East through the promotion of non-oil energy sources such as nuclear power, liquefied natural gas, and coal. Furthermore, priority was given to the diversification of import sources to reduce the dependence on the Middle East for crude oil imports. Until the mid-1980s, the dependence on the Middle East in total crude oil import decreased. As securing oil supply from other regions than the Middle East reached its

limit in terms of economic efficiency and other aspects later, however, the dependence on the Middle East for crude oil imports rose again. The development of overseas energy resources by Japanese companies was promoted from the perspective of securing a stable supply, leading to Japanese firms' development of overseas crude oil and natural gas resources. At the same time, multifaceted resource diplomacy, including economic and technical support, was promoted to strengthen Japan's relations with resource-rich countries. In addition to these efforts, the development and enhancement of oil stockpile was promoted to strengthen Japan's capabilities to respond to situations such as emergency supply disruptions. On the international front, Japan deepened its cooperation with the International Energy Agency to develop arrangements for international cooperation in responding to emergencies.

In the wake of the oil crises, as explained above, Japan positioned the enhancement of energy security as a top energy policy priority and implemented comprehensive initiatives. It can be seen that strong policies to promote the energy transition achieved some substantial effects. Behind the achievement might have been a national consensus on the importance of enhancing energy security, backed by a strong sense of crisis. It can be said that the common national awareness that this important national challenge must be tackled at all costs, even at the expense of huge investment, supported the energy transition after the oil crises.

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