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Energy as Strategic Good: Relationship between World and Energy

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Civic life and economic activities are supported by a wide variety of goods, infrastructure, and services. Among them, however, energy has deeply penetrated into civic life and the economy and plays an important role without which modern life cannot be imagined.

Air conditioning is necessary in the heat of summer, and heating is essential in the cold of winter. For these purposes, electricity, gas, and petroleum products are indispensable. In our daily life, lighting and cooking would not be possible without energy. Devices such as televisions, personal computers, and smartphones can be used as long as electricity is available. Vehicles for transportation are mostly fueled by petroleum products such as gasoline. Supporting electric vehicles is electricity. Factory operations, shops, agriculture, and fisheries are all supported by energy supplies. In many cases, energy is made available as soon as a switch is flipped. In this sense, energy is very familiar to us. From the point of view of those who use energy, energy is an extremely convenient existence that has supply sources around them and can be used immediately whenever they want to use it.

If you take a panoramic view of energy, however, you may see a completely different overall picture. In order for us to use energy, we must have extremely huge international supply chains and their functions. Energy that supports our lives depends entirely on the full functioning of the international supply chains. For instance, crude oil is developed and produced at oil fields in oil-producing countries such as those in the Middle East, transported by large tankers to oil-consuming countries and refined at refineries into petroleum products such as gasoline. These petroleum products are transported through domestic distribution channels to nearby supply bases such as gas stations, where they are provided for automobiles and other machines for consumers. The same is true for gas and coal, which are produced in gas/coal-producing countries, transported to gas/coal-consuming countries through various forms of transportation infrastructure, and consumed as fuel at power plants to generate electricity that is delivered to consumers via transmission and distribution cables.

The same can be said for non-fossil energy. As for nuclear power, which is treated as quasi-domestic energy, uranium is developed and produced in foreign countries and enriched into nuclear fuel through various processes for generating electricity for consumers. In this sense, nuclear power generation cannot be established without the support of international supply chains. Renewable energy, which is positioned as domestic energy, also has relations with international supply chains. In the case of solar and wind power generation, there are no supply chains for fuels such as fossil fuels because they use sunlight and wind that exist near power generation facilities. As for important equipment such as solar panels and wind turbines, however, supplies from overseas, such as Chinese products, sometimes play an important role. Furthermore, rare earths and other critical minerals are required for producing power storage facilities used for intermittent renewable energy power generation. Japan depends on imports for critical mineral supply. Therefore, the presence and function of international supply chains cannot be ignored for renewable energy as well.

Energy familiar to us inevitably takes on an international nature due to the fact that it is supported by international supply chains. With regard to the international nature, we can clearly see the relationship between the world and energy as (1) the international situation influences the energy situation and (2) the energy situation influences the international situation.

With regard to the relationship in which the international situation influences the energy situation, there are countless cases where political, economic, and security developments and international agreements exert significant impacts on energy supply and demand, markets, and prices. When the global economy plunged into stagnation due to the COVID-19 pandemic in 2020, for instance, a significant oversupply emerged in the international energy market, triggering a price crash. There are many relevant cases in the field of international politics and security. The cause of the first oil crisis 50 years ago was the outbreak of the Fourth Middle East War (Yom Kippur War) followed by the Arab oil embargo, which led to a significant rise in crude oil prices and supply insecurity. Later, there were many cases where developments in the Middle East shook the energy market, including the second oil crisis triggered by the Iranian revolution in late 1978 and the outbreak of the Iran-Iraq War.

The current crisis in Ukraine can be seen as a case of this kind. In response to the outbreak of an international security crisis through Russia's military invasion of Ukraine, Western countries imposed severe economic sanctions and oil and coal embargoes on Russia, the world's largest exporter of fossil fuels, resulting in a significant rise in all energy prices such as crude oil, natural gas, LNG, coal, and electricity prices. As a result, energy security has come back to the world as a top priority.

In addition, we can see that international agreements on climate change and environmental issues have significant impacts on energy markets. International accords such as the Kyoto Protocol and the Paris Agreement have exerted influence on the use of energy through various channels. The more ambitious greenhouse gas emission reduction targets are under legally binding agreements such as the Kyoto Protocol or voluntary initiatives like the Paris Agreement, the more drastically or radically the energy mix is required to change. International agreements can have a great influence on the entire international energy situation.

On the other hand, many past cases indicate the relationship in which the energy situation drives the international situation. Simply put, energy problems can significantly change the balance of power between nations, both economically and politically. If oil prices soar for some reason, for instance, an economic wealth transfer may occur between oil-producing and -consuming countries. The economic power of oil-producing countries may increase significantly while wealth flows out of oil-consuming or -importing countries. In Europe, which has faced the severest energy price hikes through the Ukraine crisis, oil, gas, LNG, coal and other energy price spikes have caused a massive wealth outflow and economic damage.

In the political sphere, energy can be used as a “weapon” to exert great influence on the international situation and relations. The Arab oil embargo is regarded as the most important “successful use of energy as a weapon”. The embargo, designed to divide oil-consuming countries, forced developed oil-consuming countries, including Japan, to accept the Arab demand, leading cooperation between oil-consuming countries to collapse. Together with the massive influx of wealth caused by soaring oil prices, the oil crisis brought about the peak of the power of oil-producing countries in the 1970s.

In the Ukraine crisis as well, the mutual influence of the international situation and the energy situation has been clear. As the division of the world deepens and becomes more serious, we may have to pay strategic attention to the interaction between energy and international issues in a broader concept, including critical minerals that are attracting attention as new strategic materials.

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