North Korea's Energy Crisis: What Are the Problems?

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According to the International Energy Agency, North Korea's energy consumption per capita in 2018 was 0.559 tonnes of oil equivalent (TOE), which is only 29.7% of the world average, 41.4% of the average of non-OECD countries, and 10.0% of that of South Korea in the same year. The per-capita energy consumption of North Korea was higher than the global average in 1980 and the same as the global average in 1990, but it has decreased sharply since then. North Korea's per-capita consumption of electricity alone in 2018 was 509 kWh, which is just 15.6% of the world average, 22.6% of the average of non-OECD countries, and 4.7% of South Korea's consumption. The electricity consumption per capita was also 39.0% higher than the average of non-OECD countries in 1990, but it has declined continuously since then.

In North Korea, some businesses that have own coal mines are self-sufficient in coal, but most businesses are run by state-supplied energy. However, all companies in the industrial sector are not properly operated due to a significant decrease in the supply of all energy resources such as coal, oil, and electricity caused by deterioration of state functions. In the transport sector, while state functions have also weakened, the functions of private businesses have been expanded, leading to a widespread confusion in the public transport management system and the energy supply and distribution structure. Energy supply for fuel except for electricity was suspended since the early 1990s, as the regime's capability to supply energy for sectors related to the livelihood of the people including households and commerce has significantly shrunk. In terms of these sectors, electricity is supplied to Pyongyang for three to five hours per day and to other regions for one to two hours per day. As for energy for heating and cooking, households with income can purchase and use coal and firewood at markets, but most families suffer a great deal of difficulty in heating in winter and obtaining energy for cooking.

Energy shortages, which have continued for a long time, significantly disturb the energy supply and distribution structure established by relevant laws and systems. This has also paralyzed the state energy supply and demand system, causing a significant degradation of statewide functions in industry, transport, households, commerce, public, and other sectors. North Korean authorities have constantly emphasized the importance of the energy sector in national plans, including the new year's address

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every year, and have made various policy efforts. However, far from being solved, its energy crisis is worsening. What kind of issues lie in North Korea's energy sector? The issues that have been identified can be categorized into problems caused by the regime's characteristics, national capacity, and its adherence to a military policy line.

The problems resulting from the regime's characteristics include the state monopoly of production factors and the lack of a market, which are derived from the socialist state system that North Korea maintains. Under the North Korean regime, the factors of production such as land, labor, and capital are monopolized by the state; private ownership is limited and private business cannot exist. All the energy companies, including coal mines and power plants, are owned by the state and produce based on the index designated by the state. Their products are also distributed by the state. Despite a chronic supply shortage caused by deteriorated state functions, institutional and policy flexibility to resolve such issues is not possible under the regime's principles. For energy companies such as coal mines and power plants, it is impossible to retrieve the principal and interest by selling their products. The regime does not allow a commercial energy system in which businesses provide goods or services and recover the principal and interest in return, and consumers pay the price and use energy goods and services. In North Korea, reproductive investment through business activities is fundamentally impossible, so conditions for business growth are absent, which serves as a decisive factor that hinders the inflow of external capital and technology.

The problems related to national capacity include limitations of policy capacity and the lack of capital and technology. Limitations of policy capacity are associated with the socialist system. An intuitive decision-making process, in which power takes precedence over productivity and efficiency, and the absence of recognition of policy failure and revision of policy are deeply rooted in the system. Due to production taking place without market consideration and systematic thinking, the functions of energy policy and planning are insufficient. The absence of capital and technology is considered one of the most representative problems in national capacity. The deficiency of investment in energy infrastructure and supply facilities has persisted for a long time. Achieving technological independence in the energy industry would be challenging, since most energy facilities that exist today were built with the support of neighboring socialist countries such as the Soviet Union and China. Since external support was suspended, the energy industry in North Korea is greatly lacking in internal capacity to maintain or improve the conditions for production in terms of policy, capital and technology.

The regime's insistence on the military policy line has led to international isolation and sanctions, disrupting foreign trade conditions for the energy industry. In the international community, North Korea is known as a state sponsor of terrorism, a representative human rights oppressor, and an isolated country going against the international community by developing nuclear weapons and long-range missiles. The regime is subject to strategic export controls that regulate the export of items that can be used for both civilian and military purposes, the UN Security Council's resolutions on North Korea and bilateral sanctions of major countries triggered by repeated nuclear experiments and long-range missile launches. In particular, UN Security Council Resolution 2371 (August 4, 2017) imposed a complete ban on North Korea's coal exports, and Resolution 2397 (December 22, 2017) limited North Korean imports of crude oil to 4 million barrels per year and refined oil to 500,000 barrels per year, taking aim at North Korea's energy supplies. As a result, the regime is under the situation of not being able to export or import energy according to its needs. It is also in the worst phase of isolation with its border lockdown implemented to tackle COVID-19. This means it is structurally difficult for North Korea to make an attempt to improve energy supply in the short-term through energy trading.

Therefore, North Korea's energy crisis resulted from a complex accumulation of various

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problems over the long-term: the characteristics of the regime, national capacity, state monopoly of production factors, the lack of a market, limitations of policy functions, the absence of capital and technology, and international isolation. It is speculated that North Korea is in a structurally difficult situation in which a short-term, or even a mid-term, solution or improvement is impossible due to the lack of conditions for business growth and capital and technology introduction, as well as the disruption of conditions for production and trade. As the problems are complex, it is difficult to devise a simple solution. North Korea's internal capabilities alone would not suffice. The regime should change itself and utilize external support. In the short-term, North Korea should be normalized to become a state recognized by the international community and be free from international sanctions through forward-looking negotiations. In the mid- and long-term, bold changes such as systemic reform and the opening of its market should be implemented. The only viable solution is the continuous introduction of western systems and policy capacity, as well as capital and technology.■

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Date of Issue: 14 October 2021 979-11-6617-237-3 95340

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