# Impacts of the Russian invasion to Ukraine on Japan's energy policy

## From the viewpoint of 3E+S

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On October 22, 2021, the Cabinet approved the Sixth Strategic Energy Plan. After the Fifth Strategic Energy Plan was approved by the Cabinet on July 3, 2018, the issue of climate change has been recognized as an urgent problem common to mankind. On October 26, 2020, Japan declared Japan's 2050 carbon neutral goal along with Japan's new target of a 46% cut by fiscal 2030 in GHG emissions compared to 2013 and to strive toward the higher goal of 50% announced on April 22, 2021. In addition to the growing interest in the climate change issue, changes in the lives of people due to the rapid spread of COVID-19 infections and the economic security environment in response to the changes in geopolitical and geo-economic situations are taken into account at the Sixth Strategic Energy Plan. In this regard, however, the geopolitical and geo-economic situations mainly focus on the US-China conflict and the situation in the Middle East. LNG prices on spot surge risk focus on changes in China's demand and oil prices surge risk to focus on the situation in the Middle East.

The aim of the energy policy is to first and foremost ensure stable supply ("Energy Security"), and realize low cost energy supply by enhancing its efficiency ("Economic Efficiency") on the premise of "Safety." It is also important to make maximum efforts to pursue environment suitability ("Environment"). Geopolitical and geo-economic issues that have arisen from the Russian invasion into Ukraine are required to be newly added to the viewpoint of 3E+S.

In the Sixth Strategic Energy Plan, Russia is recognized as increasing its military presence in the Middle East in terms of geopolitical and geo-economic issues. However, with the Russian invasion into Ukraine on February 24, 2022, new geopolitical and geo-economic issues arose only four months after approval by the Cabinet. In March, the European Union's Council decided to exclude seven Russian banks from the SWIFT (The Society for Worldwide Interbank Financial Telecommunication) system. With heightened concern regarding Russian energy exports, Brent crude hit over $130/bbl, which was the highest in 13 and half years since September 2008. With this surge, current energy price levels are beyond the scope of the assumption in the phase of creating the Sixth Strategic Energy Plan (the final report

from the Working Group on generation costs[1]).

Energy Security is the most affected viewpoint among 3E+S. Using fossil fuels increases $CO_2$ emissions and price rises cause an outflow of national wealth and higher electricity prices. However, fossil fuels are necessary for the transition to carbon neutral in 2050 to secure installed capacity with sufficient supply capacity to respond to instantaneous and/or continuous drops in electricity generated by renewable energy on the supply side and heat utilization on the demand side and will account for 70% of primary energy supply in the 2030 target. Because Japan is dependent on the Middle East for about 90% of its crude oil imports and LNG imports account for most gas demand, Japan carried forward independent development of oil and natural gas, which Japanese companies are directly engaged in the development and production of, and developing domestic resources with the promotion of comprehensive resource diplomacy in terms of securing stable supply.

With this background, the Sakhalin 1 and 2 projects are important for contributing to diversifying suppliers and raising the independent development rate because they are geographically extremely close to Japan. However, sanctions against Russia have been tightened since the Russian invasion into Ukraine, and many Western companies withdrew from Russia. As well. Shell and ExxonMobil declared to withdraw from Sakhalin 1 and from Sakhalin 2 in the energy field. Japan needs to make careful consideration for stopping importing and developing from Russia since this will increase disadvantages in terms of energy security.

While the EU is dependent on Russia for about 45% of its natural gas imports, the EU made a plan to reduce the dependency rate to zero by 2030. To achieve the target, the EU will increase LNG imports as well as enhance energy efficiency and increase the use of renewable energy and nuclear. Since LNG is difficult to store and has little capacity to increase supply, supply and demand will be very tight if the EU increases LNG imports. Thus, stable LNG supply for Japan will be a more significantly important issue. In addition, the EU might seek postponement of the shutdown and restart of coal-fired power generation in order to reduce gas dependency on Russia. The EU imports half of its steam coal from Russia and thus is starting to move to Asia and Oceania such as Australia to switch from Russia. While Japan eyes diversifying energy sources and reducing import dependency, the importance of upstream investment besides in Russia will further increase.

The view of the Environment is important because the world trend toward carbon neutral

[1]Fossil fuel prices are estimated with the trends in the new IEA policy scenario "World Energy Outlook 2020."

will be unchanged even if concerns on stable supply become a bigger issue. Note that gas might be switched to coal with the postponement of shutdown and restart of coal-fired power generation as a consequence of more focus on stable supply in the short term. We need to look at how a focus on the importance of energy security due to the Russian invasion into Ukraine will affect the discussion of global warming. Japan will seriously consider early introduction as well as lowering prices of non-fossil energy such as hydrogen, ammonia, methanation, and offshore wind which will contribute to stable supply as well as decarbonization. In addition, if nuclear can restart earlier, it will contribute to stable supply and curbing electricity price rises as well as decarbonization.

In the view of Economic Efficiency, Japan also imposed economic sanctions on Russia, which negatively impacts Japanese manufacturers such as through revocation of the most favored nation status for Russia, halting Japanese automakers' production in Russia, and export regulations on machinery such as semiconductors and communication equipment. In the middle and long terms, manufacturers in Japan will suffer from higher production costs caused by high fossil fuel import prices induced by a tightened energy market due to the EU increasing LNG imports. Note, however, that while it is a concern that private investment will be postponed due to higher uncertainty arising from the unstable international situation and economic depression, higher fossil fuel import prices will enhance economic efficiency of energy-saving and decarbonization investment. In the transportation sector, introduction of electric vehicles is expected for decarbonization and if fossil fuel import prices rise, the competitiveness of electric vehicles will be higher. Note that the rare-earth metals required for electric motors and batteries are mainly located in Russia and China; thus, it will be required to cope with concerns about reducing the economic efficiency of energy-saving and decarbonization investment brought by price hikes and unstable supply of rare-earth metal.

While nuclear is one of the options to contribute to reducing fossil fuel dependency and 3E, Russian forces attacked the Zaporizhzhia nuclear power plant in Ukraine and military attacks on nuclear have come to pose a real threat. Discussions on nuclear will be held with increasing interests in this new risk. In Japan, emergency facilities that will remotely control a reactor in the case of a terrorist attack, natural disaster, or aircraft collision are required to be built for restart. What is first necessary is to strengthen and ensure nuclear safely by adjusting new nuclear safety regulations, then to take measures in view of the national defense that will be required against military attacks.

In this way, it is expected to examine individual policies against geographical issues which are not assumed in the current Strategic Energy Plan before revising it as well as incorporating the issues into the next one.



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