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Reviewing Japanese and International Energy Situations in 2022

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Six days are left before the end of 2022. Every year, the Japanese and global energy situations experience various great changes and are exposed to their impacts. In 2022, however, historically unprecedented changes rattled the international energy situation. It was an extremely impressive year for me. In particular, the year's biggest highlights were the impacts on the energy situation of the Ukraine crisis that was triggered by Russia's military invasion into Ukraine on February 24 and escalated rapidly. In the following, I would like to review the Japanese and global energy situations in 2022, focusing on the crisis.

First, I would like to point out that prices of all energy sources in international markets skyrocketed, affecting the global economy and civic life seriously. International energy market prices started an uptrend in the second half of 2021 before the Ukraine crisis and accelerated their hikes under the crisis. Crude oil prices topped $100 per barrel in response to the Russian military invasion and rose above $130/bbl briefly on the United States' announcement of a Russian energy embargo in March, hitting the highest levels since the 2008-2009 global financial crisis. Later, however, crude oil prices declined on concern about global economic deceleration and the slowdown in oil demand. They stood at around $80/bbl last weekend. Despite their plunge from highs in March, they are still high.

However, European gas prices soared even faster than crude oil prices. As concern on gas shortages grew amid a substantial decline in Russian pipeline gas supply on which Europe depended heavily, the European benchmark gas price shot up to a record high of some $100 per million British thermal units (close to $600 per barrel of oil equivalent). As there was no effective surplus supply capacity in the international market for gas/LNG, unlike oil, global gas supply decreased due to the Russian supply drop, leading to the unusual price spikes. The supply-demand balance for LNG as an alternative gas source also tightened, prompting spot LNG prices to soar to record highs close to $70/MMBtu. Spot steam coal prices in the international market also rose above $400 per ton to record highs. European electricity prices as well hit all-time highs. In 2022, all energy prices thus soared simultaneously.

The price spikes for energy as an indispensable good have had enormous impacts. Energy price spikes and market destabilization have exerted negative impacts on the global economy. As energy price spikes were coupled with European and U.S. interest rate increases to counter growing inflation triggered by energy and other price hikes, the slowdown of the global economy accelerated. Energy price spikes became a social, political and economic problem mainly in Europe where energy price hikes were remarkable. Even developed countries such as European nations and Japan were forced to implement various energy subsidy systems primarily targeting for low-income people.

Energy price hikes that have regressive effects became an even more serious issue in low-income developing and emerging countries.

Second, energy issues were linked to international politics or geopolitics and politicized as the Ukraine crisis escalated. The Western bloc embarked on energy and other tough economic sanctions on Russia. Russia for its part reduced pipeline gas supply to Europe substantially, exerting great pressure on the region. In an attempt to maintain energy supply, Russia sold energy at lower prices than international market prices to countries that did not join the Western sanctions. In this way, international energy markets were divided over Russian energy supply. Differences over crude oil price hikes between oil-consuming and -producing countries grew conspicuous. Particularly, special relations between the United States and Saudi Arabia deteriorated. Geopolitical tensions and division related to the Ukraine crisis and energy price hikes were intricately intertwined with the escalation of earlier U.S.-China confrontation, highlighting confrontation between the Western bloc and the China-Russia alliance. Their tug-of-war to woo third-pole countries also intensified, making the 2022 global geopolitical environment extremely severe and uncertain.

Third, energy security rapidly grew critically important in response to such situation. Securing stable energy supply became a matter of utmost urgency mainly in Europe on the energy crisis front. Symbolically, the European Union's REPowerEU Plan urges the EU to urgently reduce its dependence on Russia by accelerating its decarbonization plan to promote renewable energy and energy efficiency and by procuring non-Russian fossil fuels. Meanwhile, Europe's additional fuel procurement to ensure its energy security caused a tighter energy supply-demand balance and energy price spikes. At the same time, the importance of U.S. LNG was increasingly recognized in the gas/LNG market where the tightening supply-demand balance and price hikes became remarkable. Nuclear energy as a stable baseload electricity source free from CO_2 emissions grew important for enhancing energy security while promoting decarbonization. In Europe, France and the United Kingdom came up with large-scale nuclear power plant construction plans, attracting global attention. Germany, on the energy crisis front, modified its plan to end nuclear power generation within 2022 and decided to increase coal-fired power generation for stable electricity supply. In the year, coal attracted attention amid the energy price spikes, resulting in a return to coal in many parts of the world.

Fourth, the year saw moves that ran counter to decarbonization amid energy price hikes and energy security enhancement initiatives. Symbolic among such moves was the abovementioned return to coal. Some initiatives to phase out dependence on Russia and enhance energy security can be expected to contribute to decarbonization over a medium to long term. These initiatives seek to promote renewable energy, energy efficiency, nuclear energy, hydrogen use and electrification. A future focus of attention is whether these initiatives would be realized in the real world where there are so many uncertainties over the energy future. As indicated by the 27th Conference of Parties to the United Nations Framework Convention on Climate Change, confrontation and collision between developed and developing countries over the enhancement of climate change countermeasures grew even more serious. While the division of the world deepened amid the enhancement of energy security measures in 2022, various challenges loomed in regard to the promotion of decarbonization initiatives.

Fifth, Japan's energy problems grew more complex and serious under the abovementioned international energy situation. As energy prices in Japan soared sharply due to international energy

market price hikes and the yen's depreciation, the government introduced and increased gasoline subsidies and decided to introduce subsidies for electricity and gas. As concern grew about a tightening electricity supply-demand balance, stable electricity supply became a serious challenge for the Japanese economy and civic life. Japan implemented omnidirectional energy initiatives including those to promote energy efficiency, renewable energy and stable fossil fuel procurement. Particularly important was a policy change to promote nuclear energy. Based on Prime Minister Fumio Kishida's instruction on nuclear energy promotion in August, the government has enhanced efforts to increase the number of restarted nuclear reactors to 17 by the summer of 2023. The government's Green Transformation Implementation Council in December adopted basic policies including the promotion of the development of next-generation nuclear reactors to replace decommissioned reactors and the effective extension of nuclear reactors' service life beyond 60 years. In 2022, energy policies to respond to the present energy crisis while trying to strike a balance between energy security and decarbonization became indispensable for Japan.

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