

## **Reviewing Dramatic Energy Market Changes under the Ukraine Crisis**

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One year has passed since Russia's invasion into Ukraine triggered a serious crisis to rattle the world. Even at present, Ukrainian and Russian forces are fighting in Ukraine, boosting the civilian and military death toll. Social and economic infrastructure damage in Ukraine has become enormous, indicating that Ukraine's reconstruction after the ongoing war would take much time and incur great costs. Ukraine's direct and indirect economic losses are immeasurably enormous, with social and political problems, such as the massive number of refugees, being immeasurably serious. As Western countries are enhancing military and economic support for Ukraine to counter Russian forces, the future course of the war in Ukraine is difficult to forecast. Amid concern that Russia could use nuclear weapons, the war in Ukraine has turned into a quagmire.

The international energy market has become swallowed by great waves of supply shortage fears since the Russian military invasion began as Russia's presence as one of the world's largest fossil fuel exporters has been combined with Western countries' tough sanctions on Russia's important energy sector and a substantial decrease in Russian pipeline gas supply to Europe under the Ukraine crisis.

Even before the Russian military invasion, crude oil, natural gas, coal, electricity and other energy prices had been spiking due to the tightening supply-demand balance in the international market. After the Ukraine crisis escalated on the military invasion, crude oil prices briefly topped \$130 per barrel in March 2022. Later in the first half of 2022, the market remained exposed to crude oil prices above \$100/bbl and supply shortage fears. While coal prices' jump to record highs became a big issue, European gas prices' abnormal spikes attracted global attention as the biggest matter of concern. European gas prices soared close to \$100 per million British thermal units, or close to \$600 per barrel of oil equivalent, in August 2022. Europe's heavy dependence on Russian gas, a plunge in Russian pipeline gas supply and the absence of surplus gas supply capacity to cover the plunge were combined to produce significant impact on the abnormal price spike. There was growing concern that serious gas shortages could hit Europe in the 2022-2023 winter in a manner to seriously affect civic life and economic activities. Abnormal fuel price spikes boosted electricity costs in Europe, leading to economic and social destabilization. The European Union took the initiative in introducing energy subsidies. Governments thus directly intervened in the energy market, instead of leaving market forces to work.

Energy price spikes and supply shortage fears, particularly physical shortage concerns, have led energy security to become the most important, urgent priority primarily in Europe. In the past several years, governments have tended to strongly intervene in or enhance control on markets to address climate change and other environmental issues as well as the COVID-19 pandemic. The Ukraine crisis has required governments to further strengthen market intervention to enhance energy security and address geopolitical confrontation. As symbolized by the European Union's REPowerEU Plan, European and many other countries have implemented unprecedentedly great and

strong initiatives to phase out dependence on Russia and enhance energy security. Energy security enhancement and energy supply stabilization have become the most important common priority for major energy consuming countries, including both developed and developing economies, not only in Europe but also in other regions.

Energy price spikes and market destabilization have exerted great negative impacts particularly on Europe, which had depended heavily on Russia. They have also seriously affected lower-income developing and emerging countries. Energy price spikes have regressive effects, affecting lower-income countries and people more significantly. Becoming desperate to secure energy supply, Europe has procured massive liquefied natural gas from U.S. and other projects to cover the Russian supply decrease, leading gas and LNG spot prices to shoot up unusually, as noted above. While Europe has been able to procure gas/LNG even at high prices, developing countries have had no choice but to give up on gas consumption, reduce energy supply or increase coal consumption at the cost of an increase in CO<sub>2</sub> emissions. Europe's energy crisis and its response to the crisis have exerted negative spillover effects on the entire world, including developing countries.

The Ukraine crisis has also exerted diverse and complex effects on decarbonization initiatives that had dominated global energy debate before the crisis. As all possible means have been required to secure stable energy supply as a top short-term priority, even Europe, which has so far taken global leadership in cutting CO<sub>2</sub> emissions, has had no choice but to use coal-fired power generation for stable energy supply. Developing countries, plagued with energy price spikes, have begun to increase the use of coal, which is known as a comparatively cheaper and more abundant energy source. While such crisis response has run counter to decarbonization, some initiatives have been seen to strike a balance between energy security enhancement (to phase out dependence on Russia) and decarbonization.

Such initiatives include the abovementioned REPowerEU Plan, which is designed to accelerate earlier-planned renewable energy diffusion and energy efficiency improvement and further promote hydrogen use and electrification. In another development, interest in nuclear energy as a stable baseload, zero-emission power source has grown rapidly. France, the United Kingdom and others have come up with new nuclear power plant construction plans. In the face of the tightening electricity supply-demand balance as well as the Ukraine crisis, Japan has also begun to promote the restart of nuclear power plants, the lengthening of the service life for existing reactors and the development of next-generation nuclear reactors, including small modular reactors. Initiatives to strike a balance between energy security and decarbonization have become an approach common to developed economies including Japan, North America and Europe. However, we are required to pay attention to whether these initiatives would make smooth progress without causing problems in the future. The Ukraine crisis has indicated that the affordability of energy prices is significant even for developed countries that are also socially vulnerable to energy price spikes. How to minimize costs for the long-term energy transition will become a key future issue.

The escalation of the Ukraine crisis has also highlighted a tough international situation. From the viewpoint of security, the division of the world has become a serious issue due to confrontation between the United States and China and between the Western bloc and the China-Russia group and their race to woo third-pole countries. The north-south confrontation over climate change has also become clearer and fiercer, contributing to the division of the world. Furthermore, nationalism has grown in developed countries. The world now sees the shift of emphasis from economic efficiency to geopolitical and security strategies and from market forces to national logics. While prices in the international energy market have declined substantially from

their peaks in the last year, no optimism can be warranted, amid concern about a fierce race to procure energy sources next winter. While the Ukraine crisis has continued for one year, its future remains uncertain. We will have to closely watch relevant future developments and their impacts on the international situation.

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