The Future of Russian Oil and Natural Gas

Tetsuo Morikawa
Executive Researcher, Manager, Oil Group, Energy Security Unit
The Institute of Energy Economics, Japan

It has been a year and a half since Russia launched its military aggression against Ukraine, and there are still little signs of a ceasefire. The war in Ukraine has caused severe damage to the country and threatened the very foundations of energy security of energy importers, Europe in particular. Western countries have imposed sanctions on Russia on an unprecedented scale across a wide range of sectors including finance, trade, and energy. Sanctions in the field of energy include the exclusion of Russian financial institutions from the SWIFT system, the embargo on Russian fossil fuels (although there are significant differences depending on the country/region), and the setting of price caps on Russian oil. In addition, major European and American oil companies, with some exceptions, have withdrawn their businesses from Russia.

Regardless of the sanctions imposed by the West, Russia's oil production and export volumes from 2021 to 2022 both increased by 2% respectively. On the other hand, the production and export volumes for natural gas fell by 12% and 31% respectively. It was relatively easier to resell seaborne oil exports for Europe and the U.S. er (3.3 million barrels/day on average in 2021). On the other hand, it is impossible, in the short-term, to maintain export volume by directing Russian pipeline gas exports bound for Europe (167 bcm in 2021) to China and other markets, and not easy to do so even if we were to consider the longer period until 2050. This contrast between the production and export volume fluctuations of oil and natural gas reflects the severity of the infrastructural constraints of natural gas (or its relatively high transportation and storage costs).

While oil export volume has finally begun to fall recently, the effects of Western sanctions on reducing export volumes have been limited so far. Nevertheless, it is difficult to deny that maintaining Russian oil export volume has contributed to the stability of international oil demand and supply as well as prices. Brent price rose to $130/barrel in March 2022, but regardless of concerns about the economic outlook, fell to about $70 at one point as Russian oil export volume was understood stable. On the other hand, the situation was far more serious for natural gas. TTF price, the marker price for Europe, rose sharply to almost $100/Mbtu (about $590/barrel of oil equivalent) in August 2022. However, as a result of the decline in demand due to high prices, a warm winter, and the EU's natural gas demand and supply measures (REPowerEU), TTF price fell to below $10/Mbtu for the first time since June 2021. Although the EU and Western countries have not implemented an embargo on Russian natural gas, the EU's dependence has fallen from 40% before the military aggression to below 10%.

While the production and export volumes of natural gas have fallen as such, Russia's oil and natural gas industries have shown a surprising resilience regardless of Western sanctions and the withdrawal of Western companies. However, it is highly likely that the medium- to long-term effect will be severe. The general view is that the Ukraine war will become protracted, and there is a strong possibility that sanctions imposed by the West on Russia will remain in place or be strengthened as long as the war continues. Hypothetically, even if a ceasefire were achieved, the West and Europe in particular is unlikely to ever more dependent on Russian energy again.

Russia's oil production had been predicted to decline over the medium- to long-term even before its military aggression against Ukraine, as a result of the depletion of existing oil fields and delays in developing new oil fields. New fields are assumed to be unconventional oil or Arctic regions, such development would require the technology of Western companies. If Russia or non-Western companies do not acquire the technologies, the decline will be faster. There is also a growing likelihood that natural gas production, which had been expected to continue increasing until 2050 before the war, will decline significantly with the loss of the European market and the delays and suspension of new development. As for LNG projects, there appear to be prospects for development that circumvent Western sanctions through small-scale modular liquefaction plants (so-called Arctic Cascade). However, even though Russia is putting full efforts into promoting LNG projects and has constructed two new pipelines (capacity of 60 bcm/year) to China, it will be difficult for it to maintain the export volume. Therefore, in the medium- to long-term, Russia's oil and natural gas production are likely to be sluggish, which will likely curb Russia's economic growth in turn. However, national security lies at the roots of the confrontation between Russia and the West, and energy is now a secondary factor. It would be far too optimistic to think that the decline in Russia's oil and natural gas export volumes and export income will end Russia's war in Ukraine or its confrontation with the West.

Contact: report@tky.ieej.or.jp