

2022 World Energy Situation Indicated by Renamed Statistical Review of World Energy (2)

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In “A Japanese Perspective on the International Energy Landscape (643),” based on the "Energy Institute (EI) Statistical Review of World Energy 2023" released late last month, I summarized the main points of the international energy situation in 2022, focusing on a viewpoint of energy consumption. In this report, I would like to briefly review energy consumption trends, outline international energy price trends in 2022 and summarize the important points on the supply side (production and international trade) in the order of oil, natural gas and LNG, and coal.

In the international energy market in 2022, global primary energy consumption increased by 1.1% from the previous year, a slower rise than the average for the past 10 years. However, consumption trends significantly differed by region and by energy source. By region, North America, Latin America and the Middle East saw robust increases in consumption, while Europe and Russia posted substantial consumption declines due to the Ukraine crisis. By energy source, oil showed a solid consumption increase, while natural gas posted a sharp consumption fall due to the Ukraine crisis. Although global coal consumption was almost flat, China, India, the European Union and some others showed signs of a comeback to coal. Among non-fossil energy sources, renewable energy showed double-digit consumption growth, but nuclear energy consumption fell sharply due to declines in countries such as France, Germany and Ukraine. These energy consumption trends indicated various impacts of the Ukraine crisis.

International energy market prices were also exposed to turbulence because of the Ukraine crisis. According to the EI Statistics, the average 2022 spot price of benchmark crude oil Brent increased by \$30.41 per barrel or 42% from the previous year to \$101.32/bbl. The price shot up about 2.5 times from 2020, when prices were sluggish due to the COVID-19 disaster. The average price exceeded \$100/bbl for the first time in nine years since 2013. The Russian oil embargo increased supply insecurity in the market, leading oil prices to rise significantly, mainly in the first half of 2022.

Due to the Ukraine crisis, natural gas and LNG posted even more dramatic price hikes than oil. In Europe, which faced a significant decline in pipeline gas supply from Russia as described below, the 2022 average Dutch TTF (Title Transfer Facility) futures price, a European natural gas benchmark, skyrocketed by \$21.46 per million British thermal units or 134% to a record high of \$37.48/MMBtu. In terms of oil equivalent, the average price exceeded \$210/bbl, indicating an extraordinarily high level. In tandem with European gas price spikes, the Japan/Korea Marker LNG spot price for Asia also rose to a record \$33.98/MMBtu. In the United States, where natural gas price hikes were slower, the benchmark Henry Hub price rose by 68% to \$6.45/MMBtu, the highest in 14 years since 2008.

Coal also experienced unprecedentedly high prices in 2022. In particular, a representative coal price in Northwestern Europe recorded a significant increase of \$171.93 per ton or 141% to a

record \$293.63/ton. Thus, the international energy market in 2022 was hit by unprecedented price hikes, mainly for natural gas/LNG and coal.

On the supply side, global oil production in 2022 totaled 93.85 million barrels per day, showing a solid increase of 4.2% from the previous year. In line with an increase in global demand, oil production expanded globally. In the United States, the largest oil-producing country in the world, production increased by 6.5% from the previous year to 17.77 million bpd. Saudi Arabia, the second largest, boosted oil production by 10.8% to 12.14 million bpd, while Russia, the third largest, posted a slight increase of 1.8% in oil production to 11.2 million bpd. Oil production in the Middle East, the largest oil-producing region, grew by as much as 9.2%, further increasing the importance of the Middle East in the oil market amid the Ukraine crisis. It was also interesting that the Organization of the Petroleum Exporting Countries scored a 7.2% oil production increase and raised its share of global oil production to 36.3%. The OPEC share rose for the second straight year after declining gradually until 2020.

Oil exports showed similar trends. Exports increased by 10.1% to 8.76 million bpd in the United States, by 14.1% to 8.87 million bpd in Saudi Arabia and by 8.7% to 15.39 million bpd in the Middle East excluding Saudi Arabia. Exports in Russia posted a small rise of 1.7% to 7.95 million bpd. In oil exports, the importance of Saudi Arabia, the Middle East and OPEC was highlighted in 2022. In Russia subjected to a Western oil embargo, oil production and exports increased in 2022, instead of decreasing, indicating that international oil flows changed as a decrease in Russian exports to Western countries was more than offset by an increase in those to other countries.

In 2022, global natural gas production totaled 4,043.8 billion cubic meters, showing a slight decrease of 0.2% from the previous year. It had posted a solid increase of 2.0% on average over the past 10 years before turning down in 2022. By region, the United States, the world's largest natural gas producer, boosted production by 3.6% to 978.6 billion cubic meters, while Russia, the second largest, reduced production by a steep 11.9% to 618.4 billion cubic meters. The former Soviet Union including Russia also cut production by 9.6% to 805.9 billion cubic meters, indicating the impact of the Ukraine crisis.

The significant expansion in U.S. natural gas production is closely related to a substantial increase in U.S. LNG exports in response to soaring gas prices. U.S. LNG exports in 2022 grew by as much as 10.2% from the previous year to 104.2 billion cubic meters. Europe absorbed this increase, expanding its LNG imports by 58.4% to 170.2 billion cubic meters. Europe is the largest LNG-importing market, outdoing Japanese and Chinese markets. In the face of high LNG prices, LNG imports decreased by 15.2% in China, 15.4% in India and 2.0% in Asian members of the Organization for Economic Cooperation and Development. Coupled with the sharp increase in LNG imports in Europe, the decline in those to Asia brought about major changes in international LNG flows, including expanding U.S. exports' shift from Asia to Europe. Highlighted changes in pipeline gas trade included a Russian export fall and a European import decrease. In 2022, Russia's pipeline gas exports plunged by 37.7% from the previous year to 125.3 billion cubic meters. The sharp decline in Russian pipeline gas exports, which accounted for about 20% of the world's gas trade (pipeline gas and LNG trade) in 2021, had a huge impact on the global gas market. This was the direct cause of the abovementioned surge in European gas prices. The decline in Russian pipeline gas exports directly led to the fall in European pipeline gas imports. European pipeline gas imports nosedived by 80.9 billion cubic meters or 34.9% to 150.8 billion cubic meters. The decline was close to the decrease in Russia's pipeline exports of 76.0 billion cubic meters.

In 2022, global coal production totaled 8.8 billion tons, scoring a significant increase of 7.9% from the previous year. This is a significant change compared to the average annual increase of 0.8% over the past 10 years. India, the largest coal producer in the world, and China, the second largest, posted double-digit growth in coal production, indicating their emphasis on and comeback to coal. In international trade, there were notable changes such as a decline in overall coal exports, including a 12.1% decline in Russian coal exports, and a 10.0% increase in European imports. In addition, China cut coal imports by 12.6% while increasing domestic production. The Ukraine crisis thus had various effects on international coal trade in 2022.

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