

2023 International Energy Situation as Seen from EI Statistics (2): Energy Production and Export Trends

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The current issue of this essay series will summarize noteworthy points regarding the international energy market in 2023 based on the EI Statistical Review of World Energy 2024, as the previous issue, “A Japanese perspective on the International Energy Landscape (No. 695),” did. At this time, I will review the production and export trends concerning oil, natural gas, LNG, and coal after looking at the energy price trends, which reflect the supply-demand balance in the international energy market.

First, regarding the oil price, whose trend always attracts attention as the most important indicator of the situation of the international energy market, according to the EI statistics, the average spot price of Brent Crude in 2023 was 82.64 dollars per barrel. That represents a drop of around 20 dollars from the average price of 101.32 dollars per barrel in the previous year. This means that the market regained some degree of calm in 2023 compared with the extraordinary situation in 2022, when the oil price, which rose to the highest level since the global financial crisis following the onset of the Ukraine crisis, stayed above 100 dollars per barrel throughout the year. However, the annual average crude oil price of higher than 80 dollars per barrel is in no way a low level. In the period since 2015, the oil price in 2023 was the highest level except for the upsurge above 100 dollars per barrel in 2022.

In the case of natural gas, while the price trend and level vary across major markets around the world, the TTF natural gas price in the European market, which was struck hardest by the Ukraine crisis, was 12.87 dollars per million BTU in 2023, falling to around a third of the previous year’s level of 37.09 dollars. However, that was the highest level in the European market except for the levels in 2021 and 2022. Although the market has become calm compared with the crisis situation in 2022, the European gas price remained high. In this respect, the coal price showed a similar trend. According to the EI statistics, the Northwest Europe coal price in 2023 fell to 129.54 dollars per ton, less than half the previous year’s price of 291.28 dollars, but it was still the highest except for the level in 2022. While international energy prices were returning to lower levels from the extraordinary levels reflecting the impact of the Ukraine crisis, they remained high in 2023. Let us look at the supply trends concerning oil, natural gas, LNG, and coal, which are closely related to the price trends.

First, global oil production in 2023 increased 2.0% from the previous year to 96.26 million barrels per day. As global oil demand in 2023 recorded an increase of slightly over 2%, supply grew in line with the demand increase. However, the year 2023 was also notable in that supply-demand adjustments made by major oil-producing countries in response to price falls from the previous year’s level became conspicuous. While oil production by non-OPEC countries in 2023 increased 3.4% from the previous year to 62.21 million barrels per day, production by OPEC countries declined 0.6% to 34.05 million barrels per day. Among the non-OPEC countries, production by Russia, which is participating in the OPEC Plus group, fell 1.1% from the previous year to 11.08 million barrels per day. Meanwhile, the United States acted as a driver of growth in global oil production in the non-

OPEC group and also at the global level. U.S. oil production in 2023 expanded 8.5% from the previous year to 19.36 million barrels per day. The volume of increase in U.S. production (compared with the previous year) was 1.51 million barrels per day, equivalent to 82% of the increase in global oil production. Conversely, Saudi Arabia played a central role in realizing and expanding production cuts by OPEC in response to the increase in production by non-OPEC countries led by the United States. Saudi oil production in 2023 fell 6.6% from the previous year to 11.39 million barrels per day. In short, oil production followed different trends in the global top three oil-producing countries, the United States (with a global share of 20.1%), Saudi Arabia (11.8%), and Russia (11.5%)—a steep increase in the United States, a steep decrease in Saudi Arabia, and a slight fall for Russia.

Global oil exports in 2023 declined slightly, 0.4%, from the previous year to 68.12 million barrels per day. Exports by the United States increased strongly (up 6.5% from the previous year), but exports by Saudi Arabia and Russia fell steeply (by 5.5% and 13.9%, respectively), a trend contrasting with the robust growth in U.S. exports. By region, oil exports from the Middle East amounted to 23.3 million barrels per day, accounting for the largest portion, 34%, of global oil exports in 2023. The combined volume of exports by the top three exporting countries (the United States, Saudi Arabia, and Russia) came to 24.13 million barrels per day, slightly larger than the volume of oil exports from the Middle East and equivalent to 35% of global exports. While the United States was the largest oil exporting country, with an export volume of 9.11 million barrels per day, it was also a major importing country, with an import volume of 8.54 million barrels per day. This means that with a net export volume of around 0.6 million barrels per day, the United States is just barely a net exporter, so its situation is different from the situation of large net exporting countries such as Saudi Arabia and Russia.

Global gas production in 2023 increased only marginally, by 0.3%, from the previous year to 4,059 billion cubic meters, as global gas demand remained flat. However, by region, the production trend varied significantly. Gas production in the United States, the largest gas-producing country in the world, in 2023 recorded robust growth of 4.2% from the previous year to 1,035 billion cubic meters, equivalent to 26% of global production. The volume of U.S. gas production, which was 489 billion cubic meters in 2005, has continued to increase for more than 20 years since then except in 2020, when production fell because of the impact of the COVID-19 crisis. U.S. gas production in 2023 was more than double the level in 2005. This represents the tremendous results of the shale revolution. On the other hand, production in Russia, the second-largest gas-producing country, plunged 5.2% to 586 billion cubic meters. Since the onset of the Ukraine crisis, the supply of Russian gas to Europe via pipelines has shrunk sharply, leading to a steep drop in production in Russia. As for other countries, production in Canada and Mexico also expanded in line with the increase in U.S. production, with the result that gas production in the North America region increased by 4.1%. On the other hand, gas production by the ex-Soviet region fell 4.2%, dragged down by the decline in Russian production. Gas production in the whole of Europe also plunged 7.2% as gas production in Norway, a major producer in Europe, declined substantially.

Under these circumstances, a significant change has occurred in the trend of global gas exports as well. The volume of interregional pipeline gas trade in 2023 fell 8.3% from the previous year to 388 billion cubic meters. In contrast to the steep drop, the volume of LNG trade increased 1.7% to 549 billion cubic meters. LNG has become the mainstay item of global gas trade as its share in the overall volume of gas trade has increased to 59%. Previously, pipeline gas accounted for the dominant portion of the overall gas trade, but LNG replaced pipeline gas as the mainstay of the gas trade in 2020 and its share has continued to grow since then. One of the major factors behind the trend change that occurred in 2023 was a steep fall in pipeline gas exports by Russia to Europe. In 2021, pipeline gas exports by Russia accounted for 20% of global gas exports. However, pipeline gas exports by Russia

abruptly tumbled after the onset of the Ukraine crisis, declining from 201 billion cubic meters in 2021 to 125 billion cubic meters in 2022 and to 95 billion cubic meters in 2023. In particular, Russian exports of pipeline gas to Europe plunged from 168 billion cubic meters in 2021 to 50 billion cubic meters in 2023. While the steep fall in Russian pipeline gas exports was the direct cause of the European gas crisis in 2022, an increase in LNG exports by the United States made up for the shortfall in gas supply to Europe. U.S. LNG exports in 2023 grew 9.4% from the previous year to 114 billion cubic meters. The volume of increase compared with 2021, 20 billion cubic meters, was very large, but that alone was still insufficient to fully cover the abovementioned fall in Russian pipeline gas exports to Europe. Even so, U.S. LNG exports, with their high level of destination flexibility, made the greatest possible contribution—and a greater contribution than would have been possible merely because of the net increase in export volume—to satisfying European gas demand. But it is also important to note the fact that the destination of some exports originally intended for export to other regions under existing contracts was changed to Europe. Among other major LNG exporting countries, Algeria also increased exports in 2023, but the U.S. export expansion was outstanding in scale, making the United States the largest LNG exporting country in the world in 2023.

Global coal production in 2023 increased 3.1% from the previous year to 9.1 billion tons. As the importance of stable supply and affordable energy prices was highlighted, coal consumption expanded, resulting in a commensurate increase in coal production. Prime examples of the coal production expansion were the increases of 3.3% in production by China, whose share in global coal production was 52%, and of 11.0% in production by India, whose share was 11%. Coal exports by Indonesia, the largest coal exporting country in the world, in 2023 grew 8.8% from the previous year, while exports by Australia, the second largest exporting country, increased 9.6%. Coal exports by Russia (the third largest coal exporting country in the world), on which the Western bloc has imposed an embargo, recorded a small increase of 1.4% in 2023.

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