

2023 International Energy Situation as Seen from EI Statistics (3): Trends in Major Economies

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In the previous two issues of my essay series “A Japanese Perspective on the International Energy Landscape,” I summarized the characteristics of the international energy situation in 2023 regarding consumption, production and export trends by energy source based on the "EI Statistical Review of World Energy 2024." In this issue, I would like to summarize the key points of the international energy situation in 2023 for major economies -- the United States, the European Union, China, India, the Middle East, and Russia.

The United States, which leads the world in international politics, economy, and military security, is the world's most important country in terms of influence on the international energy market. The influence of the United States on the international energy situation is partly exerted through the political, economic, and military power of the superpower. On the other hand, it should not be overlooked that U.S. energy supply and demand have a direct influence on the global energy market. In 2023, U.S. primary energy consumption totaled 94.3 exajoules, accounting for 15% of global consumption. It was the world's second-largest energy consumer after China. U.S. primary energy consumption, though declining by a slight 1.2% year on year in 2023, has remained almost flat since 2000. Of primary energy consumption in 2023, oil accounted for 38%, natural gas for 34%, and coal for 9%. Fossil fuels, including domestic oil and gas, commanded 81% of primary energy consumption. Gas captured the largest share, at 43%, of electricity generation, followed by 18% for nuclear, and 17% each for renewable energy and coal.

The importance of the United States for the global energy market stems from its preeminent presence in both the production and consumption of oil as the most tradable commodity in the world and natural gas as the second-most. The United States commanded the world's largest share, at 18.98 million barrels per day or 18%, of global oil consumption and, at 19.36 million bpd or 20%, of global oil production. It also accounted for the world's largest share, at 887 billion cubic meters or 22%, of global gas consumption and, at 1,035 BCM or 26%, of global gas production. Its oil and gas consumption and production expanded in 2023. Production growth was as high as 8.5% for oil and 4.2% for gas. Supported by increased production, U.S. oil exports increased by 6.5% to 9.11 million bpd, ranking first in the world (but net exports were about 600,000 bpd). U.S. LNG exports also expanded by 9.4% to 114 BCM, accounting for the world's largest share. In the year 2023, the importance of the United States in international energy trade was thus distinguished.

The EU saw a 2.5% decline in primary energy consumption in 2023, following a 3.9% decrease in 2022 when the outbreak of the Ukraine crisis shook Europe. EU energy consumption has been on a downward trend due to economic maturation and other factors and accelerated since 2022. In 2023, oil accounted for 38% of EU primary energy consumption, gas for 20%, and coal for 10%. Fossil fuels thus captured 68% of energy consumption in 2023, against 71% in the previous year. The

fossil fuel share slipped below 70% at last. Renewable energy was the third-largest energy source after gas, accounting for 17% of the total. Of power generation, renewable energy commanded the largest share, at 32%, followed by 23% for nuclear, 16% for gas, 13% for coal, and 12% for hydro, indicating a well-balanced power generation mix.

Of EU energy consumption in 2023, oil decreased by 1.9%, gas by 7.1%, and coal by 20.1%. Gas and coal; consumption declined significantly, reflecting the acceleration of efforts to phase out coal consumption and dependence on Russian gas. Renewable energy consumption posted a significant increase of 8.1%, despite the substantial decrease in overall energy consumption. Europe's efforts to phase out dependence on Russia in the face of the Ukraine crisis and accelerate decarbonization continued to affect the EU's energy supply and demand in 2023.

China, the world's largest energy consumer, continued to expand energy consumption in 2023. In that year, China's primary energy consumption posted a rapid increase of 6.5% from the previous year to 170.7 EJ, accounting for 28% of global consumption. Coal was the largest energy source to support this enormous energy consumption, accounting for 54% of primary energy consumption, followed by 19% for oil and 9% each for renewables and gas. While the coal share fell gradually from a level close to 80% in the 1980-1990s, China has remained heavily dependent on coal. Coal also accounted for a dominant share, at 61%, of power generation, followed by 18% for renewables, which underwent rapid growth.

While overall primary energy consumption increased robustly, renewable energy consumption posted an attention-attracting rise of 20.7% in China. At the same time, fossil fuel consumption posted steady growth. Consumption increased by 10.9% for oil, by 7.2% for gas, and by 4.7% for coal. While the consumption of coal, the largest energy source in China, increased steadily, coal production grew 2.0%, indicating that China gives priority to domestic coal production from the perspective of energy security. Supported by the expansion of coal consumption and production, China accounted for 56% of global coal consumption and 52% of global production. China also commanded the largest share of renewable energy consumption, at 32%. The country's presence was remarkable in nuclear energy consumption as well as renewable energy consumption.

As a representative of the Global South, India significantly increased its presence in the international energy market in 2023. India's primary energy consumption in that year increased by 7.3% from the previous year to 39.0 EJ. Accounting for 6% of global consumption, India was the world's third-largest energy consumer after China and the United States. India, like China, was highly dependent on coal, with coal accounting for 56% of its primary energy consumption in 2023, followed by 27% for oil, and 6% each for renewable energy and gas. Of the power generation mix, coal commanded an even more remarkable share of 75%. In 2023, renewable energy scored the largest consumption increase, at 13.6%. India's energy situation in 2023 also featured a 9.8% increase in coal consumption and an 11.3% rise in coal production, indicating its priority given to energy security.

In the Middle East, known as the gravity center of the world's energy supply, both oil production and exports declined in 2023 in the midst of the OPEC-plus group of oil-producing countries enhancing its coordinated production cuts to support crude oil prices. In that year, oil production in the Middle East decreased by 1.6% from the previous year to 30.36 million bpd, accounting for 32% of global production. Saudi Arabia, the leader of the Organization of the Petroleum Exporting Countries, led the production cuts, reducing its production by 6.6% to 11.39 million bpd. OPEC oil production in the year fell by 0.6% to 34.05 million bpd. While global oil demand increased slightly, the OPEC-plus group enhanced its production cuts in response to a non-OPEC production

increase including the abovementioned substantial U.S. production rise, leading to the drop in the Middle East's oil production. In line with the abovementioned production trend, the Middle East's oil exports in 2023 fell by 3.3% to 23.3 million bpd. Nevertheless, the Middle East accounted for 34% of global oil exports, remaining the largest oil-exporting region in the world. The Middle East's LNG exports in 2023 fell by a slight 1.9% to 131 BCM. However, the Middle East remained a major LNG exporter, rivaling the United States, and ranking second after the Asia-Pacific region.

In 2023, various developments were seen in the EI statistics regarding energy production and exports of Russia, which faced Western economic sanctions amid the Ukraine crisis. Russia's oil production in 2023 fell by 1.1% to 11.08 million bpd. Oil exports dropped by 13.9% to 6.73 million b/d. Crude oil exports decreased by 0.44 million bpd and petroleum product exports by 0.65 million bpd. Russian gas production also fell by 5.2% to 586 BCM. In 2023, LNG exports fell slightly to 43 BCM. However, total gas exports plunged by 18% to 138 BCM due to a significant decline in pipeline gas exports mainly to Europe. From 2021 before the Ukraine crisis, gas exports posted a sharp decrease of 43%. Despite the decline, however, Russia remained the third-largest oil producer and exporter in the world and the second-largest gas producer and exporter, retaining its position as an important energy exporter.

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