

2019 Global Energy Situation Indicated by BP Statistics

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On June 17, international oil company BP PLC released its “BP Statistical Review of World Energy 2020.” As noted in eight past editions of this report, the BP statistics are one of the world’s most representative annual energy supply and demand statistics. Energy stakeholders in the world refer to the BP statistics known for comprehensive coverage of the latest data. In the following, I would like to review the 2019 international energy situation based on the data.

First, global primary energy consumption in 2019 increased by 1.3% from the previous year to 583.9 exajoules (EJ)¹. The growth rate was lower than the past 10-year average of 1.6% and less than half of the previous year’s growth at 2.8%. Among various factors for the relatively lower growth, the most important one was a slower global economic growth rate. According to the International Monetary Fund, the global economy posted a growth rate of 2.9% in 2019, slower than 3.6% in 2018 and 3.9% in 2017. Compared with around 3.5% between 2012 and 2018 and the earlier 10-year (2002-2011) average of about 4%, the 2019 growth was relatively lower. Economic growth decelerated globally. Remarkably, growth decelerated to 1.7% in the United States, down 0.6 points from the previous year, and to 1.2% in the eurozone, down 0.7 points.

Second, U.S. primary energy consumption in 2019 decreased by 1.0% from the previous year to 94.7 EJ. European Union consumption also dropped by 1.4% to 68.8 EJ. The United States, though having been replaced by China as the world’s largest energy consumer, was still the second largest, while the EU accounted for 11% of global consumption. Their energy consumption drops were a main contributor to the deceleration of global energy consumption growth in 2019. In contrast, China, India and other Asian emerging market economies logged relatively robust energy consumption growth. China’s primary energy consumption in 2019 swelled by 4.4% (or by 5.9 EJ) to 141.7 EJ, accounting for 24% of the global total. Primary energy consumption growth came to 2.3% (0.8 EJ) in India, 8.3% (0.7 EJ) in Indonesia and 10.7% (0.4 EJ) in Vietnam. These remarkable growth rates led Asia-Pacific primary energy consumption to rise by 3.3% to 257.6 EJ in 2019, capturing 44% of the global total. The Asia-Pacific region thus increased its presence as the gravity center of global energy consumption. A similar trend was seen in the comparison between the Organization for Economic Cooperation and Development (OECD) and non-OECD countries. OECD primary energy consumption shrank by 0.8% to 233.4 EJ, accounting for 40% of the global total, while non-OECD consumption expanded by 2.8% to 350.5 EJ, commanding 60% of the total. Compared with the OECD share at 70% and the non-OECD share at 30% for 1965, the first year covered by BP statistics for primary energy consumption, the latest data indicate a dramatic energy market change in the past half century.

Third, renewable energy scored the highest consumption growth among energy sources of

¹ The BP Statistical Review for 2020 characteristically switched to exajoules from tons of oil equivalent in measuring primary energy consumption.

12.2%, followed by 3.2% for nuclear and 2.0% for natural gas. The three energy sources posted faster growth than the overall primary energy consumption growth of 1.3%. Consumption was slower at 0.9% for oil and 0.8% for hydro. Coal consumption suffered a 0.6% decrease. Consumption growth in volume was as high as 3.2 EJ for renewable energy and 2.8 EJ for natural gas. The two energy sources alone accounted for 78% of primary energy consumption growth. Oil still posted the largest share of total primary energy consumption at 33%, followed by 27% for coal, 24% for natural gas, 6% for hydro, 5% for renewable energy and 4% for nuclear. Although renewable energy and nuclear registered high consumption growth, fossil fuels retained the dominant share at 84%.

In such situation, global energy-related CO₂ emissions in 2019 recorded a low growth rate of 0.5% to 34.17 billion tons. The growth rate was less than half the past 10-year average of 1.1% and far lower than over 2% in 2018. Contributing to the deceleration of global energy-related CO₂ emission growth were the relatively lower global primary energy consumption growth of 1.3% and the low-carbonization of global energy consumption as indicated by high consumption growth for renewable energy, nuclear and natural gas and a consumption decline for coal. In the future, the global energy consumption growth pace and structural energy consumption changes will continue to greatly influence energy-related CO₂ emissions.

Fourth, I would like to check energy supply and demand trends by major economy. The United States, though being the world's second largest energy consumer after China, remained the largest oil and natural gas consumer in 2019. U.S. oil production in the year scored an amazing increase of 1.6 million barrels per day or 11% from the previous year. U.S. natural gas production soared by 85 billion cubic meters or 10%. The year thus symbolized the powerfulness of the U.S. shale revolution. The United States was the world's largest oil and natural gas producer, capturing 17% of global oil production and 23% of global natural gas production. It has retained its unshaken position as the largest consumer and producer of oil and natural gas, the first and second most important goods in international energy trade. In 2019, the United States further increased its presence in the international energy market, particularly in international energy trade.

The EU indicated a more remarkable trend of energy consumption's low-carbonization than a global trend. While cutting primary energy consumption by 1.4%, the EU increased renewable energy consumption by 8.2% and natural gas consumption by 2.7% and reduced other energy consumption substantially. Particularly, its coal consumption plunged 17.8%. Although fossil fuels still accounted for 74% of primary EU energy consumption in 2019, how fast the EU's energy consumption structure will change will attract much attention.

As the world's largest energy consumer, China drove global energy demand growth in 2019 as well. Its primary energy consumption growth of 5.9 EJ accounted for 77% of the global growth at 7.7 EJ in the year. China boosted consumption of all energy sources. Of Chinese energy consumption, nuclear posted the highest growth of 17.8%, followed by 14.2% for renewable energy and 8.6% for natural gas. While expanding total primary energy consumption, China was going in the direction of cleaner, lower-carbon energy consumption. While global oil consumption declined in 2019, China expanded oil consumption by 2.3% in the year. China's energy consumption will remain one of the largest factors influencing the supply-demand balance in the international energy market.

The Middle East, the world's largest oil-producing region, limited oil production in 2019 to 30.38 million bpd, down 4.8% from the previous year. The Organization of the Petroleum Exporting Countries cut oil production by 5.3% to 35.57 billion bpd as U.S. oil production scored a far faster increase than a global oil consumption rise of 0.92 million bpd or 0.9%. OPEC's share of global oil

production came to 37% in 2019, falling for the third straight year from 41% in 2016. The oil cartel's production cut to cope with global oversupply greatly affected its share in 2019.

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