Special Bulletin

A Japanese Perspective on the International Energy Landscape (461) January 1, 2020

2020 Energy Outlook in Japan and World

Ken Koyama, PhD
Chief Economist, Managing Director
The Institute of Energy Economics, Japan

The New Year 2020 opened after various changes shook the world last year. In the following, I would like to forecast the Japanese and international energy situations in 2020 while referring to a short-term energy outlook published by the Institute of Energy Economics, Japan, on December 23, 2019.

First, the enhancement of joint oil production cuts by the Organization of the Petroleum Exporting Countries and some non-OPEC oil-producing countries at the beginning of the year is the key to forecasting the supply-demand balance in the international oil market. While global oil demand increases moderately, non-OPEC oil production including U.S. output will grow even faster. As the enhanced joint production cuts are designed to respond to such oil supply-demand situation, the OPEC-plus group's production policy is attracting attention. In such situation, the benchmark Brent crude oil price will average $65 per barrel in 2020. Depending on developments regarding the U.S.-China trade war, U.S. shale oil production expansion and the Middle East, however, the oil market could become volatile. As the International Maritime Organization begins to toughen its regulation on the sulfur content of ship fuel this year, we must pay attention to how price gaps between petroleum products, gaps between heavy and light crude oil and sulfur content gaps between crude oil varieties would affect the oil industry and oil flow.

Second, demand in the global liquefied natural gas market will expand to 369 million tons, driven by growing Chinese and Indian demand. However, supply capacity will increase in such countries as the United States to 381 million tons, surpassing demand. Reflecting such supply-demand balance, the spot LNG price will slip below $6 per million British thermal units. Meanwhile, LNG prices under long-term contracts covering most of LNG supply are basically indexed to crude oil prices. Reflecting the abovementioned oil price forecast and a decline in the rate of LNG prices indexed to oil prices, Japan's average LNG import price will fall from around $10/Mbtu in 2019 to less than $9/Mbtu in 2020. While the LNG market is being globalized, attention must be paid to LNG imports in China and other Asian emerging market countries and in Europe. On the supply side, attention must be paid to how far final investment decisions for new LNG projects would increase over a medium term. Given the deviation between long-term contract and spot LNG prices, it would be interesting how LNG suppliers and buyers would negotiate terms and conditions for long-term contracts.

Third, coal market prices are forecast at around $70 per ton for steam coal and $140-150/t for coking coal, remaining close to current levels. Although the world is growing more critical of coal because of climate change and air pollution countermeasures, coal consumption will continue to expand mainly in Asian emerging market countries at least in 2020, reflecting the reality that coal is very important as a competitive energy source for Asian emerging market countries. On the supply

side, Australia and Russia have ample supply capacity, indicating a relatively stable coal market in 2020.

Fourth, attention regarding climate change will be paid to young people's growing interest in climate change as symbolized by the "Greta Thunberg phenomenon", ESG (environmental, social and governance) investment initiatives, and trade and financial policies' growing relations with climate change. Policy side developments including the European Commission policy trend and the U.S. presidential election would also be worthy of close attention. The 25th Conference of Parties to the United Nations Framework Convention on Climate Change produced an outcome document encouraging all countries to advance their climate change countermeasures in line with their respective conditions and set ambitions as high as possible, but indicated that it was very difficult to coordinate national interests and stances. We should take note of whether major countries would submit tougher emission reduction targets for 2030 as nationally determined contributions in 2020.

Fifth, renewable energy power generation will continue global expansion in 2020. Particularly, renewable energy power generation capacity will increase by some 8% during 2020 to 2,900 gigawatts (1,300 GW in hydro capacity and 1,600 GW in non-hydro capacity) at the end of the year. Renewable energy expansion will be led by China, Europe, the United States and India, and driven by growth in solar photovoltaics power generation. As of 2018, renewable energy accounted for 25% of global power generation. The share consisted of 16 percentage points for hydro and 9 points for non-hydro renewables, indicating that solar PV and wind power accounted for only a small share. As renewable energy power generation costs decline, policy support and business corporations' enhancement of renewable energy procurement will back up overall renewable energy expansion. As intermittent renewable energy power generation expands, new challenges will emerge, including costs for integrating such intermittent electricity into the grid, as well as the so-called "cannibalism phenomenon" in which very large-scale introduction of solar PV capacity generates massive electricity on sunny days to cause a substantial fall in electricity prices to its own disadvantage. Japan in particular will have to revise policies and enhance measures to develop renewable energy into an economically independent major power source.

Sixth, nine nuclear power plants restarted operation in Japan by the end of 2019. Attracting attention will be whether the nuclear plant restart would make progress through examinations by the Nuclear Regulation Authority and plant operators' talks with relevant local governments. At the same time, however, some plants now in operation could be forced to suspend operation due to a delay in the completion of counterterrorism facilities beyond the respective deadlines set be NRA. We must keep close watch on developments regarding the restart and use of nuclear power plants that exert great influence on Japan's 3Es – energy security, economic efficiency and environmental friendliness. While the utilization and construction of nuclear power plants face more complex and challenging situations in developed countries, China and Russia are proactively developing nuclear power plants both domestically and internationally. Meanwhile, the U.S. Nuclear Regulatory Commission permitted a nuclear power plant in December to operate until they are 80 years old, attracting global attention.

Seventh, spot electricity prices are exerting increasing influence on power generation facilities' profitability and power retail competition in Japan's electric power industry as spot electricity trading is expanding. Attention should also be paid to renewable energy expansion's downward pressure on spot electricity prices. Last year, trading was launched in baseload, indirect

power transmission right and non-fossil value certificate markets. In the future, Japan plans to start delivery in the baseload market and trading in non-FIT non-fossil value certificates and set intermediate targets under the Energy Supply Structure Sophistication Act. Attention should be paid to how such trading or prices would be. As surplus electricity supply capacity declines generally, how best to secure capacity for stable electricity supply is a future challenge.

Eighth, Japan's primary energy supply will decrease by 0.4% for the second straight year as GDP growth decelerates from 0.7% in FY2019 to 0.6% in FY2020. Supply will increase for coal, renewable energy and nuclear energy while decreasing for natural gas and oil, indicating a moderate shift to non-fossil energy. Coal supply will expand as new coal-fired power plants go on stream. Carbon dioxide emissions in Japan in FY2020 will decrease by 15.1% from FY2013 to 1,048 million tons. Electricity sales will increase slightly through FY2020. City gas sales will also rise due to an increase in those for power generation. Petroleum products sales in FY2020 will decrease for the eighth straight year, posting a fall of one-third from the peak in FY1999. Japan's LNG imports in FY2019 will slip below 80 million tons for the first time after the March 2011 Great East Japan Earthquake. If all renewable energy power generation capacity approved under the FIT system is in operation, cumulative burdens on consumers by surcharge may reach as high as 60 trillion yen to push up power bills.

While watching the 2020 Japanese and foreign energy situations including the abovementioned points, I would like to follow up on these situations through this bulletin.

Contact: report@tky.ieej.or.jp
The back issues are available at the following URL
http://eneken.ieej.or.jp/en/special_bulletin.html