IEEJ e-NEWSLETTER

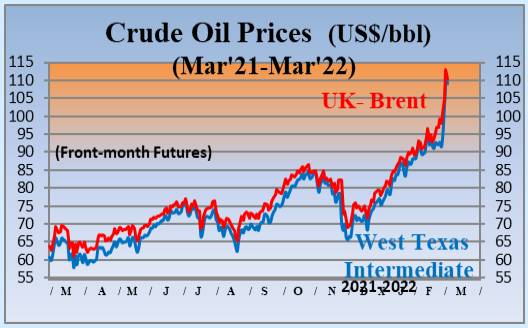
No. 228

(Based on Japanese No. 222)

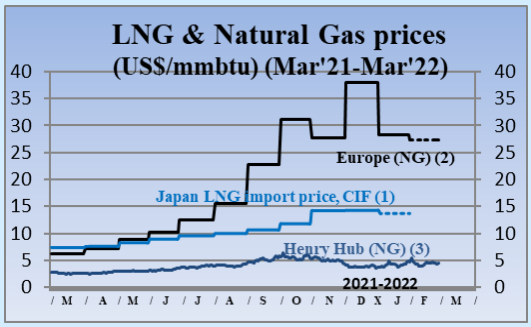
Published: March 9, 2022

The Institute of Energy Economics, Japan

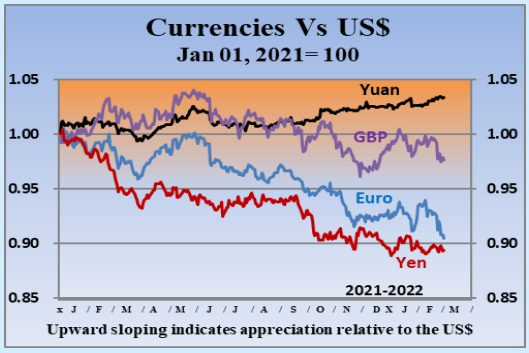
(As of March 3, 2022)



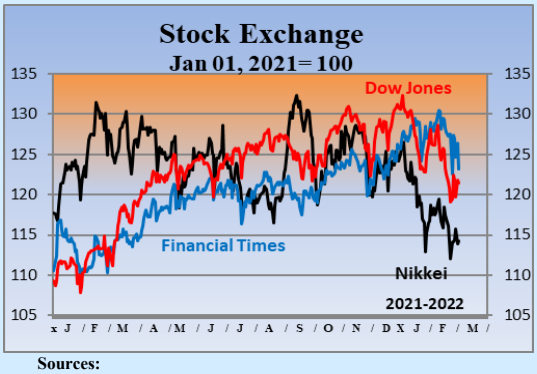
Sources:
(1) DOE-EIA
(2) Investing.com



Sources:
(1) Ministry of Finance "Japan Trade Statistics"
(2) Ministry of Economy, Trade and Industry (arrival month basis)
(3) Estimated by World Bank (Netherland Title Transfer Facility)
(4) DOE-EIA, NYMEX (Front-month Futures)



Source: x-rates.com



Sources:
(1) Finance. Yahoo.com
(2) Investing.com

Contents

Summary

1. Developments in Nuclear Energy

On February 10, French President Emmanuel Macron announced plans to extend the lifetime of all the country's 56 reactors and build up to 14 new ones as part of a new energy strategy. The actual plans that will be formulated are keenly awaited.

2. Recent Developments in the Oil and LNG Markets

Rising tensions over Ukraine are fueling concern over disruptions to oil and natural gas supplies to EU countries and the market remains unpredictable. Meanwhile, the Iran nuclear deal, if agreed, will help ease the oil supply-demand balance.

3. Update on Policies Related to Climate Change and Energy Conservation

In Europe, the surge in gas prices is highlighting the importance of enhancing energy efficiency by improving the insulation performance of buildings. In Japan, a report was issued on the next energy efficiency standards for residential air conditioners.

4. Update on Renewable Energies

Moves to spur the use of domestic forest resources are accelerating under partnerships between private corporations and municipalities. The aim is to help achieve carbon neutrality, improve energy and economic security, and boost domestic industry.

1. Developments in Nuclear Energy

Tomoko Murakami, Senior Economist, Manager
Nuclear Energy Group, Strategy Research Unit

On February 2, the European Commission unveiled the EU Taxonomy Climate Delegated Act, which prescribes technical screening criteria for classifying certain economic activities as sustainable. The Act specifies the conditions for natural gas and nuclear to be included in the EU Taxonomy as "transitional activities." The conditions for nuclear are as follows.

Newly built plants must:

- Obtain a construction permit by 2045.
- Use best available existing technologies.

Existing nuclear installations must:

- Obtain a permit for lifetime extension by 2040.
- Have a safety goal and safety culture in place, and have facilities for responding to a severe accident.

Both new and existing plants must:

- Have final disposal facilities for very low-, low-, and medium-level radioactive wastes in operation.
- Have a detailed plan for a disposal facility for high-level radioactive waste in place by 2050.
- Use accident tolerant fuel from 2025.

Can EU nuclear user countries satisfy all these conditions? The hurdle is very high. The status of installing safety facilities varies by country. Also, opinions may differ over exactly what constitutes "best available existing technologies"—for example, whether they include the EPR, the large PWR currently under construction in the UK and elsewhere. It is not yet clear how these conditions will be discussed and interpreted by the Council of the European Union and the European Parliament.

On February 10, French President Emmanuel Macron unveiled France's new energy strategy, setting renewable energy and nuclear as the two pillars, in Belfort, France (published on the official government website on February 11). In the speech, he said that no existing nuclear reactor will be closed, unless necessary for safety reasons, and that they will remain in operation beyond their current operational lifetime of 50 years following a review by the French Nuclear Safety Authority (ASN). He also shared plans to build six EPR2 (improved EPR) plants by 2050, starting construction of the first one in 2028 aiming to commence operation in 2035, and stated that the construction of eight more is being considered. He also revealed plans to allocate a total of one billion euros to the development of innovative reactors—500 million euros each to SMRs called NUWARDs and innovative reactors that produce less waste—as part of France 2030, a strategic investment program to strengthen the French economy. The plan to build up to 14 new reactors underlines France's status as a nuclear powerhouse, but it is the plan to extend the lifetime of all 56 existing light-water reactors that deserves attention. Japan's regulation currently allows one 20-year lifetime extension after operating for 40 years. It is important to consider this regulation in light of the developments in other countries.

2. Recent Developments in the Oil and LNG Markets

Tetsuo MORIKAWA, PhD
Senior Economist, Manager
Oil Group
Fossil energies & International Cooperation Unit

Tensions are rising higher over Ukraine. As the likelihood of Russia invading Ukraine increased, the Brent price temporarily surpassed $96 on February 16. The price fell back to $93 on the 17th as the US' return to the Iran nuclear deal became more likely, but upward pressure on prices is sure to rise as President Biden said on the 18th that he is "convinced that President Putin has made the decision" to invade Ukraine. Natural gas prices had climbed to as high as $30/Mbtu for the Dutch TTF market at the end of January and to $29/Mbtu for spot LNG prices for Asia in early February. Both are trending at around $25 as of late February.

Currently, Russia exports 2.35 mb/d of oil and 148.4 bcm of natural gas to the EU. The EU depends on Russia for as much as 30% of its oil and 40% of its natural gas supply. Of these amounts, 0.25 mb/d of oil and 1.1 bcm of natural gas are supplied via pipelines through Ukraine. If Russia invades, these supplies through Ukraine are likely to be cut off. The EU has sufficient oil stocks as of November 2021 to cover 170 days of consumption and has yet to start securing alternative sources. However, stocks of natural gas are only enough for around 20 days of consumption and a supply disruption would likely have a greater impact, and so the EU is working with the US and others to secure alternative supplies. The EU imported 11 million tonnes of LNG in January, four times more than in the same month in the previous year. The US has discussed increasing supplies for the EU with Qatar and other LNG exporters and has asked LNG importers including Japan to send some of their supplies to the EU. Japanese companies have reportedly diverted several LNG cargoes to the EU in response.

Needless to say, the Ukraine crisis is threatening the very foundation of Europe's energy security. Reducing dependence on Russia emerged as the EU's priority energy policy especially after the Ukraine crisis in 2009. In fact, reducing its dependence on Russian oil and gas had partly motivated the EU to increase renewable energy even before the Paris Agreement, though the current crisis has revealed that such efforts were insufficient. Accordingly, the EU is expected to pursue renewable energy even more fervently and, like France, revert to nuclear power to satisfy the dual goals of energy security and decarbonization.

Meanwhile, the US is expected to ease its sanctions on Iran's oil industry if an agreement with Iran on the nuclear deal is reached. Iran had an estimated oil output of 2.5 mb/d in January, of which 1.0 mb/d was exported. Exports will increase if the US lifts the ban on Iranian oil. When it did so in January 2016 based on the Iran nuclear deal (JCPOA) of July 2015, Iran's oil output increased by about 1.0 mb/d in a year or so. If the Iran nuclear deal is agreed and Iran's output increases at the same pace as 2015 to 2016, it could ease the ongoing oil supply crunch.

3. Update on Policies Related to Climate Change and Energy Conservation

Naoko DOI, PhD
Senior Economist, Manager
Energy Efficiency Group
Climate Change and Energy Efficiency Unit

In Europe, the surge in gas prices is strengthening awareness that higher insulation performance for houses and buildings and curbing space heating demand are important for energy security as well as climate change. At the end of last year, the European Commission proposed revisions to the Energy Performance of Buildings Directive, whose top priority includes accelerating the renovation of buildings with the lowest energy efficiency. Specifically, the law categorizes the 15% worst-performing buildings in the member countries' national housing and building stocks as EPC (energy performance certificate) class G, and requires that these properties be renovated and improved to at least energy performance class F by 2027 for houses and by 2030 for other buildings.

The aim of these measures is to improve the heating environment for energy-poor households living in poorly insulated housing and to save electricity and gas tariffs by setting mandatory energy efficiency renovation requirements for owners of leased property. EU member states are already implementing short-term measures for houses and small enterprises including energy tax payment waivers and subsidy programs, but it is hoped that they will act promptly to encourage renovations to raise energy efficiency.

On February 10, the US Department of Transportation and the Department of Energy released a guidance on the National Electric Vehicle Infrastructure Formula Program for EV chargers. The federal government has designated key highways in each state as "Alternative Fuel Corridors" with the aim of developing EV and FCV charging and refueling infrastructure, and will provide subsidies worth $5 billion over five years to its development. Each state will need to submit an EV infrastructure development plan to the federal government in line with this guidance. In the second half of this year, subsidy programs for boosting EV charging infrastructure will be announced around the country, including in those regions where EV user services are not yet fully available.

On February 17, the Asia Development Bank approved $150 million in loans to Indonesia to fund the country's clean energy transition and fulfillment of the SDGs targets. This facility, called SIO-GEF, funds ten projects in Indonesia and aims to catalyze private investment and improve the projects' financing capability. There is an estimated annual gap of $51 billion between the investments necessary for achieving a clean energy transition by 2030 and the public funds the country can spend (investment gap), and it is hoped that the ADB's contribution will help solve this issue.

In Japan, preparations were under way to pass a bill requiring all new houses and small buildings to comply with energy efficiency standards starting from FY2025 during the current Diet session. However, in early February, the media reported that the government has decided to postpone the legislation process until at least this autumn. Some experts have expressed concern over the postponement as Japan is already trailing Europe which is implementing innovative policies in energy-efficient houses and buildings. Meanwhile, on February 8, a council of the Agency for Natural Resources and Energy on energy efficiency standards published a report on the next energy efficiency standards for residential air-conditioners. The target fiscal years for their introduction are (1) FY2027 (wall-mounted type) and (2) FY2029 (other than wall-mounted type, multi-split type). The FY2027 target for a wall-mounted A/C with a cooling capacity of 4.0 kW, for example, will be to improve efficiency by up to 34.7%.

4. Update on Renewable Energies

Yoshiaki SHIBATA, Senior Economist, Manager
New and Renewable Energy Group
Electric Power Industry & New and Renewable Energy Unit

Interesting joint projects are emerging in which private corporations team up with municipalities for effectively using Japan's forest resources. At the end of last year, Shunan city of Yamaguchi prefecture, Idemitsu Kosan, Marubeni, and others signed a partnership agreement aiming to enhance the use of wood biomass and maintenance of forests. Also, Shiso city in Hyogo prefecture and Green Power Fuel (part-owned by Osaka Gas) signed an agreement to cooperate on the use of fast-growing trees, to spur the local consumption of locally-produced biomass fuel and the sustainable growth of the domestic forestry business. In February this year, Shibushi city in Kagoshima Prefecture and Sumitomo Forestry signed an agreement to discuss the construction of a processing plant for domestic wood and a biomass power plant.

The goals set in these enterprises such as the use of lumber for wood products and biomass fuel, local consumption of locally-grown produce, maintenance of forests and development of related industries are all crucial for Japan, which is trailing other countries in using domestic forest resources effectively. While the area of woodland, which accounts for 70% of Japan's land area, has remained largely unchanged for the past 50 years at 250,000 km^2, Japan's forest stocks, or the amount of forest resources, have almost tripled in the same period to 5.2 billion m^3 and are growing by 70 million m^3 each year. Meanwhile, Japan's annual harvesting rate is only 0.5%, the lowest among OECD countries which generally have a rate of 1–2%. The stocks of natural forests have remained mostly unchanged; however, the man-made forests planted after World War II by government policy have remained unharvested after reaching maturity, causing problems for preserving healthy forests. It is necessary to make use of the man-made forests that are ready for harvesting and systematically redevelop them for cyclic use. Thanks to the Basic Plan for Forest and Forestry revised every five years, the self-sufficiency rate of lumber has been recovering after bottoming out at less than 20% in 2002, but is still only 40%. This is because Japan relies on cheap imported lumber and does not properly use its own forest resources.

Inexpensive imported lumber has its advantages, but it also has risks. The prices of many internationally-traded products have soared due directly and indirectly to the pandemic, and lumber, being import dependent, is no exception. There is currently a "wood shock" in Japan, with wood prices soaring as a result of an imported lumber shortage caused by increased demand for housing construction in the US and growing consumption in China, as well as the fall in the operating rate of wood processing plants overseas and delays in international logistics.

The uses of forest resources are not limited to wood products and biomass fuel; the CO_2 generated by combustion can also be used effectively. There are efforts under way to utilize the CO_2 from waste incineration plants that use large amounts of biomass, as shown by the methanation demonstration project of the Environment Ministry carried out by Hitachi Zosen and Odawara City since a few years ago, and the plan for a methanation demonstration project by Yokohama city and Tokyo Gas announced in January. Utilization of CO_2 from burning biomass is indeed a possibility.

With appropriate maintenance, domestic forest resources, with a wide variety of uses, could make a sustainable contribution to carbon neutrality efforts and help improve the energy and economic security and develop the industry of Japan as a valuable domestic resource. It is hoped that efforts will continue to be strengthened.

Past IEEJ Events

Energy and Economy Indicators of Japan

IEEJ Homepage Top

Back Numbers of *IEEJ e-Newsletter*

Back Numbers of *IEEJ Newsletter* (Original Japanese Version - Members Only)

***IEEJ e-Newsletter* Editor: Yukari Yamashita, Managing Director**
***IEEJ j-Newsletter* Editor: Ken Koyama, Senior Managing Director**
The Institute of Energy Economics, Japan (IEEJ)
Inui Bldg. Kachidoki, 13-1 Kachidoki 1-chome, Chuo-ku, Tokyo 104-0054, Japan
Tel: +81-3-5547-0211 Fax: +81-3-5547-0223

IEEJ：March 2022　©IEEJ 2022