

# IEEJ e-NEWSLETTER

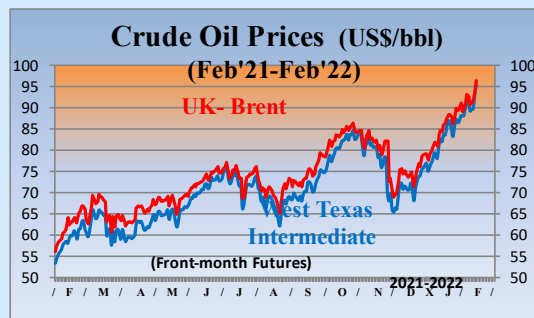
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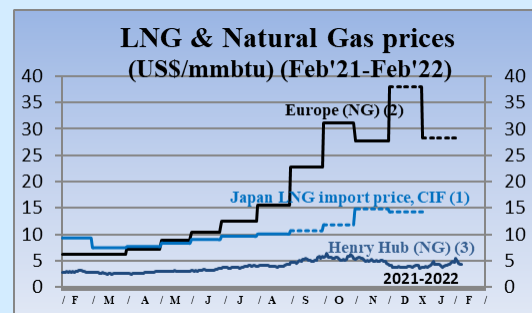
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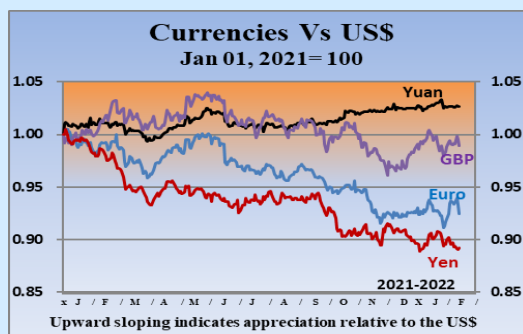
(As of February 14, 2021)



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 (Netherlands Title Transfer Facility)  
(4) DOE-EIA, NYMEX (Front-month Futures)



Source: x-rates.com



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

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### Summary

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1. Developments in Nuclear Energy
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## **Summary**

### **1. Developments in Nuclear Energy**

The European Commission began consultations on including nuclear energy in the EU Taxonomy. New developments in nuclear investment must be closely monitored. The excessive concentration of uranium production in Kazakhstan has emerged as a risk.

### **2. Recent Developments in the Oil and LNG Markets**

International natural gas and crude oil prices stay high, with LNG prices bipolarized between term contracts and expensive spot cargoes, although Japan's import prices have been lower than others.

### **3. Update on Policies Related to Climate Change**

In December 2021, as part of the enhanced efforts for decarbonization, a green finance roadmap was released in China and an ocean-based carbon dioxide removal and sequestration roadmap was announced in the United States.

### **4. Update on Renewable Energies**

Efforts to support the transition towards decarbonization through transition bonds are spreading. Development of the bond market, such as by establishing a system to help investors properly understand the impact of a transition project, needs to be established.



## 1. Developments in Nuclear Energy

**Emiri YOKOTA**, Senior Researcher  
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On January 1, the European Commission announced that it had begun consultations on including certain gas and nuclear activities in the draft text of the Taxonomy Complementary Delegated Act, which stipulates the technical screening criteria (TSC) to determine whether a technology is sustainable under the EU Taxonomy. The Delegated Act is slated for official adoption following deliberations by two advisory bodies, after which it will go through screening by the European Parliament and the European Council.

The start of application of the Delegated Act will endorse the sustainability of nuclear- and natural gas-related corporate activities under the proprietary framework set up by the EU, aiming to transition to a decarbonized society. According to media reports, a nuclear new build investment will be certified as sustainable provided that: (1) the latest technology is used, (2) a construction license is obtained by 2045, and (3) a plan for high-level radioactive waste treatment is submitted by 2050.

The EU member states are divided over whether to include nuclear energy in the Taxonomy. In October 2021, ten member states supporting its inclusion, including France and the Czech Republic, declared in a joint statement that “if Europe is to win the climate war, it needs nuclear energy. It is a vital and reliable source for everyone to secure a low-carbon future.” The Netherlands and Sweden are also reported to be positive toward including nuclear. On the other hand, five member states including Germany and Australia have shown a negative stance, stating in a joint letter that “nuclear has the risk of accidents and is not suitable for inclusion in the Taxonomy.” Attention must be paid to investments in nuclear power by each EU member state going forward.

In the wake of massive protests in Kazakhstan, on January 6, Canada’s Cameco, one of the world’s top uranium producers, stated that it might resume production at its North American uranium mines where operations are currently suspended. This is the first official announcement from Cameco regarding the reopening of multiple mines, including McArthur River whose operation is suspended due to low prices, and underscores the magnitude of Kazakhstan’s influence as a uranium producer. Kazakhstan is the world’s top uranium producer, accounting for about 41% of global output (as of September 2020). The Kazakh state firm, Kazatomprom, announced on January 13 that the mines are ready to operate as usual and there are no issues with the railway infrastructure that provides transportation. Since most uranium trades are based on long-term contracts, the current rise in spot prices is unlikely to drive up electricity tariffs immediately. Meanwhile, the protests revealed that the world’s high dependence on Kazakhstan’s cheap and abundant uranium resources is a potential risk. It will be increasingly important to diversify the sources and means of access to uranium not only for the sake of prices but also for energy security.



## 2. Recent Developments in the Oil and LNG Markets

**Hiroshi HASHIMOTO**

Head of Gas Group

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International natural gas and crude oil prices started the year 2022 at extremely high levels. The European TTF front-month futures shot up close to USD 60 per million Btu on 21 December 2021. The surge was caused by higher gas demand in Russia due to cold weather, low wind-power outputs in Europe, German regulator's suspension of approval process of the Nord Stream 2 pipeline, and concern over the Russia-Ukraine conflict. Only ten days later the spot price sled back down to the low of USD 20s to conclude the dramatic year, thanks to the influx of LNG cargoes from the United States and relatively mild weather in Europe toward the end of the month.

Volumes of natural gas stored in underground gas storage facilities in Europe (including the United Kingdom) decreased from 50 to 41 million tonnes of LNG equivalent during December 2021. High gas prices do not give market players incentives to increase inventories. As uncertainty continues over pipeline gas supply, prices are expected to stay in the high levels.

Landed LNG prices in the four big markets in Northeast Asia in November and December 2021 showed a persistent upward trend and bipolarization of prices. As front-month spot LNG price assessments and crude oil prices applicable to contracted LNG prices had kept their high levels since October, the average LNG import prices in the four markets shot up significantly in November and December. In December they were USD 18.88 in China, USD 17.20 in Korea, USD 17.26 in Chinese Taipei, making Japan's USD 14.36 per million Btu the lowest in the region. Among different supply sources delivered to Japan, LNG cargoes from the United States were notably expensive on average, indicating that low costs of feedgas and liquefaction do not always result in low delivered prices. China was officially the number one LNG importer in the world in 2021 with 78.93 million tonnes compared to Japan's 74.32 million tonnes.

The oil market also braces a bullish sentiment, as Brent crude futures price had risen to the high of USD 80s by the end of January from USD 79 at the beginning of the year. Behind the high prices, there are concern over deteriorating tensions in the Middle East and the Former Soviet Union, shrinking spare capacity in oil producing countries, as well as prospects of recovering oil demand thanks to relatively limited aggravation risks from the Omicron variant.

The International Energy Agency (IEA) raised its estimate of global oil demand in 2022 by 200 thousand barrels to 99.7 million barrels per day in its latest monthly Oil Market Report on 19 January. On the supply side, although the OPEC-plus group agreed to stick to its planned 0.4-million-b/d output increase for February on 4 January, some producers fail to fulfil their production quota. U.S. Energy Information Administration (EIA) forecasts 0.6-million b/d year-on-year increase of the country's oil production for 2022. The market does not apparently anticipate a relaxed balance even with those increases in production.



### 3. Update on Policies Related to Climate Change

**Takahiko TAGAMI**, Senior Coordinator, Manager  
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Climate Change and Energy Efficiency Unit

In December 2021, two roadmaps on decarbonization initiatives were released, one in China and the other in the US.

On December 3, the research group (led by Dr. Ma Jun, President of the Institute of Finance and Sustainability and former Chief Economist of the People's Bank of China) of the China Green Finance Committee of China Society for Finance and Banking, released the report "Roadmap for Financing China's Carbon Neutrality." The report discusses paths for economic transition under the carbon neutrality goal and stated that China's cumulative demand for green low-emission investment will amount to 487 trillion yuan (at constant 2018 prices, approximately 8,700 trillion yen) over the next 30 years on the way to reaching carbon neutrality. It also considers how the financial sector can capture opportunities arising from the efforts to reach carbon neutrality and prevent risks associated with climate change.

The report presents seven proposals for improving the Chinese green finance policy system: (1) revise green finance standards (exclude fossil fuel energy-related high-emission projects), (2) instruct financial organizations to calculate and disclose the extent of their involvement with high-emission assets and the carbon footprint of major assets, (3) encourage financial institutions to conduct environmental and climate risk analysis, (4) implement the "carbon emission reduction support tool," which contains the definition of loan purposes, measurement methods and disclosure processes, and standards for and the list of third-party organizations that verify the measurement results, (5) encourage sovereign wealth funds to conduct ESG investments, (6) improve the level of environment/climate risk management of financial institutions related to foreign investments, and (7) improve a supervisory mechanism for carbon market.

On December 8, the National Academies of Sciences, Engineering, and Medicine of the United States released a report titled "A Research Strategy for Ocean-based Carbon Dioxide Removal and Sequestration." This report builds on the report "Negative Emissions Technologies and Reliable Sequestration" which was published in 2019 and which considered various CO<sub>2</sub> removal technologies. While the ocean has huge potential for the uptake and longer-term sequestration of CO<sub>2</sub>, the benefits, risks, and potential scale of ocean-based CO<sub>2</sub> removal and sequestration are largely unknown. The report examines the following six ocean-based CO<sub>2</sub> removal approaches: (1) Nutrient (iron, nitrogen, or phosphorus) fertilization to increase photosynthesis, (2) Artificial upwelling (nutrient-rich water from depths is pumped up to the ocean surface to increase localized primary production) and downwelling (transport of CO<sub>2</sub> to depths), (3) Seaweed cultivation, (4) Recovery of ocean and coastal ecosystems using kelp and *sargassum*, (5) Ocean alkalinity enhancement through enhanced mineral weathering and electrochemical reactions, to remove atmospheric CO<sub>2</sub>, and (6) Electrochemical approaches (by passing an electric current through sea water to change the pH to remove its CO<sub>2</sub>, and thereby enhance the capacity of sea water to store CO<sub>2</sub>).

As research priorities, the report pointed to the following: Among the biotic approaches, (1) research on ocean iron fertilization and seaweed cultivation offer the greatest opportunities for evaluating the viability of possible biotic ocean CDR approaches; and (2) research on the potential CO<sub>2</sub> removal and sequestration permanence for ecosystem recovery would be beneficial. The report stated that among the abiotic approaches, research on ocean alkalinity enhancement (including electrochemical alkalinity enhancement) has priority.





## 4. Update on Renewable Energies

**Akiko SASAKAWA, PhD**

New and Renewable Energy Group

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Efforts to support the transition towards decarbonization in the medium to long term through transition bonds are spreading. The issuance of ESG bonds, primarily green bonds (environment bonds), has been growing steadily, spurred by the trend of incorporating ESG (environment, society, and corporate governance) into investment decisions and the Paris Agreement and other international accords. While the purpose of green bonds is limited to funding environment-related projects, primarily renewable energy projects, transition bonds are issued to fund projects that accelerate the “transition” toward decarbonization. Transition bonds are expected to diversify the methods of financing for the decarbonization projects of issuers (companies) such as the shipping and steel industries, which do not necessarily qualify as green bond issuers, as described below.

The importance of the “transition” towards decarbonization is widely recognized internationally and active discussions are underway. The EU’s draft report on taxonomy extension options released in July 2021 classified all economic activities into green, red, amber, or other, and defined transition as the change from red or amber to green. Furthermore, the revised guidance, released by the Task Force on Climate-related Financial Disclosures (TCFD) in October 2021, newly requires that transition plans be disclosed.

With a focus on transition, transition bonds are expected to be actively utilized particularly in shipping, air transport, steel, chemicals, cement, and energy areas that have high carbon emissions. Nippon Yusen, which was the first in Japan to issue transition bonds in July last year, issued approximately 20 billion yen in bonds with a term of five, seven, or ten years. The company described the purpose of the bonds as funding the company’s entry into the offshore wind power and hydrogen/ammonia supply chain businesses, as well as introducing vessels, including offshore wind support, ammonia fuel, hydrogen fuel cell, LNG fuel, and LPG fuel vessels. Further, according to media reports, on January 19, JFE Holdings is expected to become Japan’s first manufacturer to issue transition bonds in FY2022, aiming to improve the energy efficiency of its steel production process and invest in steel plates for EV motors.

Outside of Japan, airlines, power companies, gas companies and others have been issuing transition bonds since 2017 in various regions including Hong Kong, Italy, Spain, the UK, the UAE, and Australia. In 2019, French asset management company AXA Investment Managers and European financial institutions released guidelines on transition bonds. In 2020, the International Capital Market Association published the Climate Transition Finance Handbook.

While the transition bond scene is gathering momentum, there are still no unified international rules on these bonds. For the transition bond market to develop and prosper, a system needs to be established for issuers to concretely present their “transition” plans to ensure that investors are properly informed on the contribution and impact of a transition project on decarbonization.



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