



IEEJ e-NEWSLETTER

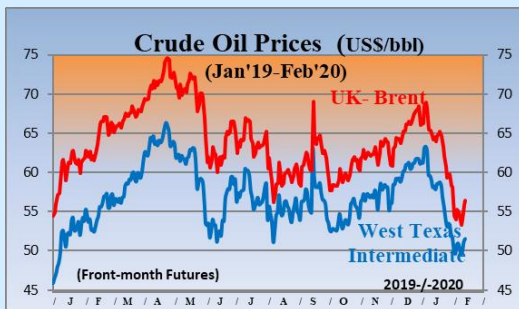
No. 178

(Based on Japanese No. 197)

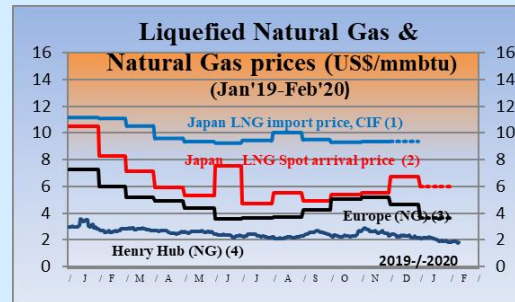
Published: February 12, 2020

The Institute of Energy Economics, Japan

(As of February 12, 2020)

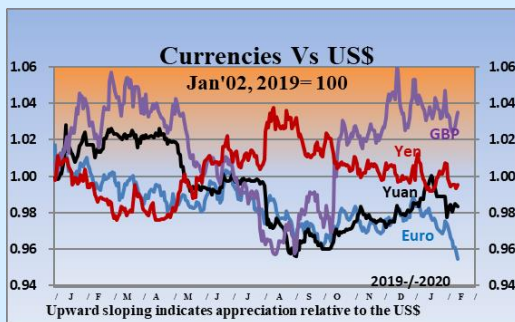


Source: DOE-EIA, Financial Times, NASDAQ

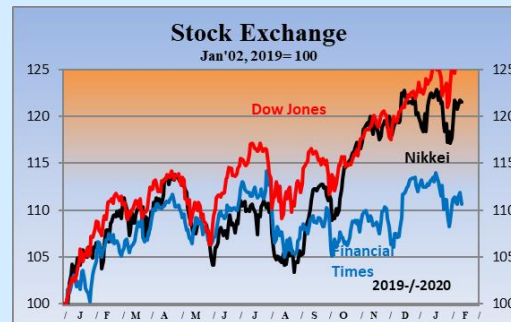


Sources:

- (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)
- (5) Investing.com



Source: x-rates.com



Source: Financial Times

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Summary

【Energy Market and Policy Trends】

1. Developments in Nuclear Power

On January 17, the Hiroshima High Court ordered the suspension of Ikata Unit 3. So long as litigations can be filed without any risk of a damages lawsuit, more temporary injunctions to halt operations are likely to follow.

2. Recent Developments in the Oil Market

High oil price volatility at the beginning of the year not only indicate the impact of the Middle East risk, but also reflect pessimistic views on supply-demand fundamentals despite tougher production cuts.

3. Recent Developments in the LNG Market

Federal agencies of the United States revealed additional measures to support LNG exports from the country that expanded its presence in LNG trades and investment activities.

4. Policies Related to Climate Change

The EU once again failed to agree on the 2050 climate neutrality objective. In the US, can any Democratic candidate leave the rest of the pack behind at the Iowa Caucus?

5. Update on Renewable Energies

In Europe, in addition to fossil fuel-sourced zero-carbon hydrogen, which has already been announced, there are plans to produce and utilize renewables-sourced hydrogen due to constraints in two areas: the power grid and fossil fuel usage.



1. Developments in Nuclear Power

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On January 17, the Hiroshima High Court issued a temporary injunction to suspend Ikata Unit 3 of Shikoku Electric Power Company. The decision came after residents of Yamaguchi Prefecture, whose petition for a temporary injunction to shut down the unit had been rejected by the Iwakuni Branch of the Yamaguchi District Court on March 15, 2019, made an immediate appeal. Shikoku Electric has abandoned to appeal against the injunction and to file an objection to the temporary restraining order to the Hiroshima High Court after the troubles in Ikata Power Station occurred soon after the injunction.

This is the second time since December 2017 that the Hiroshima High Court has issued a temporary injunction to halt Ikata Unit 3. The first order had been revoked in September 2018 after an objection was examined by the Hiroshima High Court. Including this one, all similar temporary injunctions have either been revoked afterwards based on an objection from the power company or reversed at a court of second instance. However, no power company has sued the plaintiff for damages caused by the plant shutdown under a temporary injunction in any of these cases. So long as litigations can be filed without any risk of a damages lawsuit, more temporary injunctions to halt operations are likely to follow in the future.

In Europe, two power plants ended commercial operation on the last day of December 2019: Germany's Philippsburg Unit 2 (1,468 MW PWR, started commercial operation in 1985) and Sweden's Ringhals Unit 2 (900 MW PWR, started commercial operation in 1975). The closure of Philippsburg 2 was pre-scheduled in accordance with the 2011 amendments to the country's Atomic Energy Act, while that of Ringhals was due to worsening profitability after the Swedish Parliament raised the nuclear power tax. Another factor behind the closures was the severe environment for the entire power generation business due to slumping wholesale electricity prices in the European power market. However, the business situation varies by country and there are plants such as Switzerland's Beznau Units 1 and 2 (two 380 MW PWRs, started commercial operation in 1969 and 1972) which are older and smaller than the closed plants but are still operating.

In contrast, in Russia, five plants were given permission by the national nuclear regulator ROSTECHNADZOR between December 2019 and January 2020 to extend their operating lives. Among those plants, Smolensk Unit 3 (1000 MW, started commercial operation in 1990) is a light-water cooled and graphite-moderated reactor, the same type as Chernobyl Unit 4 which caused a disaster in 1986. The cause of the Chernobyl 4 accident was not only a breach of operating rules but also design defects. Although Smolensk 3 has had an upgrade after the accident, the fact is that Russia is allowing a reactor with the same design as Chernobyl 4 to continue to operate for 45 years after the accident until 2034. What does this imply? Smolensk 3 has had a capacity factor of 80% to date and has contributed greatly to stabilizing Russia's electricity supply. Smolensk's case is an excellent example of how energy policies, market conditions, and the business environment can play a decisive role in determining the power plant life cycle, perhaps more so than the design or technological issues whose importance is undisputed.



2. Recent Developments in the Oil Market

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The Middle East situation caused oil prices to fluctuate wildly in the first few days of the year. On January 3, the day on which Major General Qasem Soleimani of the Islamic Revolutionary Guard Corps was assassinated by the US military, the Brent price jumped by \$2.35 or 3.5% from the previous day, closing at \$68.60/bbl. It then temporarily surpassed \$70/bbl on the next business day, January 6, and closed at \$68.91, the highest in three months. However, President Trump's restrained response to Iran's attacks on a US airbase in Iraq on the 8th was taken by the market as a sign that a military clash is unlikely, sending down the Brent price by \$2.83 or 4.1% to \$65.54. As of the end of January, the Brent price has fallen to below \$60, lower than the price before the assassination, due to growing concerns over a global economic recession as the novel coronavirus-infected pneumonia spreads in China.

These fluctuations not only indicate the impact of the Middle East risk, but also reflect the pessimistic views on supply-demand fundamentals. Neither the US nor Iran wants an all-out war. However, as tensions over Iran persist, supply disruption events like the attacks on and capturing of tankers and attacks on Saudi oil plants in 2019 could happen at any time. As well as in the Middle East, production also remains vulnerable in Libya where a civil war could re-ignite even after peace talks.

Meanwhile, supply-demand fundamentals show no sign of improvement despite OPEC Plus stepping up its joint production cut. In its World Economic Outlook released on January 20, the IMF downgraded its forecast for global growth for 2020 to 3.3% from 3.4%. Worsening trade relations such as that between the US and China despite having signed the "Phase One" trade deal in their negotiations, and escalating geopolitical tensions are major economic risks. Should such risks materialize, the economic growth rate could even fall below 3.3%. Needless to say, such economic slowdown would weaken the demand for oil and put downward pressure on prices.

According to the IEA's monthly Oil Market Report released on January 16, demand increased by 1.9 mb/d (1.9%) to 101.4 mb/d and production decreased by 1.1 mb/d (1.1%) to 101.2 mb/d in the fourth quarter of 2019, causing demand to remain slightly in excess of supply due to increased demand and production cuts. In the short-term outlook released at the end of last year, the IEEJ forecasted the average Brent price at \$65 for 2020. However, factors which could hit prices such as rising tensions in the Middle East at the start of the year, supply disruptions, and the second phase of the fraught US-China trade talks must all continue to be watched in 2020. OPEC Plus will meet in March to discuss an extension of the cut, but given the weak supply-demand fundamentals, the cut is likely to be extended. As the US presidential elections in November approach and as Democratic candidates become short-listed and their policies become clearer toward the second half of 2020, a possible change of government policies on economy and energy could also affect the oil market.



3. Recent Developments in the LNG Market

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In late December 2019, Nigeria LNG (NLNG) announced a final investment decision on the Train 7 project, which targets LNG production in 2024. The expansion project will increase the annual production capacity by 7.6 million tonnes per year, including 4.2 coming from one new liquefaction train, and 3.4 coming from the debottlenecking of existing trains. As was widely expected from the outset to be a record year of FIDs, the year 2019 saw FIDs for annual production capacity of 71 million tonnes, the highest in the history.

The year also experienced one of the the largest growths of LNG trades in the history, although more accurate numbers are to be confirmed later. The growth was driven by production capacity expansion in Australia, the United States, and Russia. Among them, Australia came close to the position of the largest exporter of LNG in the world, producing almost as large volumes as Qatar.

The United States emerged as the third largest exporter within five years after starting LNG export from the Lower 48, with five LNG export projects in operation by the end of 2019. During the year, one liquefaction unit at Cameron LNG in Louisiana and two at Freeport LNG in Texas began operation, as well as five small liquefaction units out of ten at Elba Island LNG in Georgia in December. As for a next generation of LNG investment activities, in early 2020, Sempra Energy signed with Saudi Aramco an Interim Project Participation Agreement for the Port Arthur LNG project in Texas to advance the latter's purchase of 5 million tonnes per year of LNG and a 25% equity investment in the project.

In early 2020, as well, the federal government revealed ideas to further support LNG exports. The Department of Energy (DOE) reiterated its idea on Life Cycle Greenhouse Gas Perspective on Exporting LNG (LCA GHG Update) that - with many LNG-importing nations reliant heavily on fossil fuels for power generation - exports of LNG from the United States may decrease global GHG emissions. DOE confirmed that it will consider further non-FTA applications as required under the laws assuming consistency with the public interest. The White House revealed a proposed rule to streamline NEPA (National Environmental Policy Act) reviews by Federal agencies, including a one-year time limit for environmental assessments and a two-year limit for environmental impact statements.

Meanwhile, Japan imported 6.81 million tonnes of LNG in December 2019 following 6.27 million tonnes in November, and 77.33 million tonnes during the 2019 calendar year, or 6.7% less than it did in 2018. The three figures were the lowest for the respective periods of the year since 2010. On the other hand, China imported more LNG than Japan on the monthly basis in November 2019 for the first time. Although Japan was still the largest importer in the world for the year, China's natural gas and LNG market developments should be watched, including impacts of the recently commenced pipeline import of Russian gas.



4. Update on Policies Related to Climate Change

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On December 11 last year, the European Commission unveiled the European Green Deal. The Deal says the Commission will propose by March 2020 the first European ‘Climate Law’ that will enshrine the 2050 climate neutrality objective in legislation. However, on December 13, the European Council comprised of leaders of the EU Member States failed to endorse the objective of achieving a climate-neutral EU by 2050 due to opposition from Poland. The European Green Deal also states that the European Commission will propose a carbon border adjustment mechanism for selected sectors by 2021. At the Business Europe meeting convened in Brussels on January 20, EU trade commissioner Phil Hogan said that it will be 2021 or later this year before we see a paper or some conclusions on how the carbon border tax will work. EU officials also explained that the tax would only be implemented as a last resort and would include early warning signals in a gradual step-by-step approach.

On December 17, the European Parliament and the EU Council of Ministers from the EU Member States agreed on a new classification system (taxonomy), which determines whether an economic activity is environmentally sustainable. According to the agreed Taxonomy Regulation, the Commission will adopt technical screening criteria for determining under which conditions a specific economic activity is considered to contribute significantly to one or more of environmental objectives by December 31, 2020. Coal-fired power was determined not to be an environmentally sustainable economic activity by the Taxonomy Regulation itself. Meanwhile, gas-fired power and nuclear power are due to be classified as environmentally sustainable economic activities in the technical screening criteria, but a review will be conducted by the end of 2021.

The US presidential election starts with the Iowa Caucus, the first of all the preliminaries and caucuses, on February 3, with 12 Democratic candidates remaining. In June 2019, former Vice President Joe Biden laid out his climate plan. In the plan Biden said he believes the Green New Deal as a crucial framework, and he will ensure the U.S. achieves a 100% clean energy economy no later than 2050 and make a federal investment of \$1.7 trillion over the next ten years. He will also make large investments in clean energy research and innovation such as carbon capture sequestration technology and nuclear energy. He also mentioned imposing carbon adjustment fees or quotas on carbon-intensive goods from countries that are failing to meet their climate obligations. Bernie Sanders (Sen., VT) announced his climate platform in September 2019. As an original co-sponsor of the Green New Deal, his platform includes the goal of reaching 100 percent renewable energy for electricity and transportation (100 percent electric vehicles) by no later than 2030 and \$16.3 trillion public investment over a decade. He considers nuclear power and carbon capture and sequestration as non-sustainable sources and plans to phase out the use of such resources. He has not mentioned carbon adjustment. Both candidates have made almost no changes to their climate platforms since their release. Since the US environmental policies may change drastically if the Democrats win, close attention must be paid to whether any Democratic candidate can break away from the pack at the Iowa Caucus.



5. Update on Renewable Energies

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There are two symbolic moves under way in Europe regarding hydrogen. One of them is from a country where large amounts of renewable energies have been introduced by reducing costs, and the other is from a fossil fuel-rich country.

Regarding the former, in December 2019, Dutch distribution system operator (DSO) Enexis announced plans for a project to produce hydrogen from surplus renewable energy jointly with gas and oil companies. The project is located in the Drenthe province, which, like its neighbor Groningen, has problems connecting renewables to the grid due to capacity constraints and so large supplies of surplus renewables are expected to be available for producing hydrogen.

In Europe, various moves to produce hydrogen from surplus renewables and in turn improve grid flexibility have long been under way. In 2018, electricity and gas system operator networks ENTSO-E and ENTSO-G announced collaboration on Sector Coupling through power-to-gas to achieve energy transition and decarbonization. Germany is working on implementing this concept. Electricity TSO Amprion and gas TSO Open Grid Europe have jointly announced a plan to produce hydrogen and synthetic methane from renewables where the electric main power grid intersects a gas main pipeline in the Emsland region. Renewable-sourced hydrogen and synthetic methane still have cost issues, but there are also many other power-to-gas projects running or being planned in Europe. Behind such movement lies the established concept of decarbonizing the entire energy system through Sector Coupling by injecting synthetic methane and hydrogen into the existing gas grid, since there are limits to the integration of large amounts of renewables through electricity grids alone.

Meanwhile, among fossil fuel-rich countries, aside from the plan to produce hydrogen from natural gas by combining CCS by Equinor, which has gained a head start, Poland is becoming more and more active. In March last year, major coal company JSW announced they will participate in Hydrogen Europe, a hydrogen and fuel cell association of Europe, and aim to separate hydrogen from gases emitted by coke ovens and supply them to fuel cell buses. At the end of November, oil and gas refinery and petrochemical company PKN Orlen announced a plan to produce hydrogen from offshore wind power. The company has been focusing recently on developing offshore wind power in the Baltic Sea and aims to use hydrogen from offshore wind power in oil refining and petrochemical processes instead of the fossil fuel-sourced hydrogen it is currently using. In the same month, major oil company Grupa Lotos announced that it will team up with Toyota Motor in building hydrogen refueling stations around the country. Poland is the second largest coal producer in Europe after Germany and covers about 50% of its primary energy supply with coal. The country's moves reflect its intention to switch to hydrogen energy, driven by a sense of crisis over the recent trend toward decarbonization. The country has yet to work on producing carbon-free hydrogen by gasifying domestic coal being tied with CCS, but its shift toward hydrogen has similarities with Middle East oil producers, who are also facing constraints over the use of fossil fuels.

It is interesting that the constraints in the existing energy system have highlighted the significance and value of hydrogen usage in Europe, though the constraints themselves vary, some in the electric power system and some on fossil fuel usage. With so many possible combinations of hydrogen supply chain, from production to usage, the ideal form of the hydrogen energy society requires further study.



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