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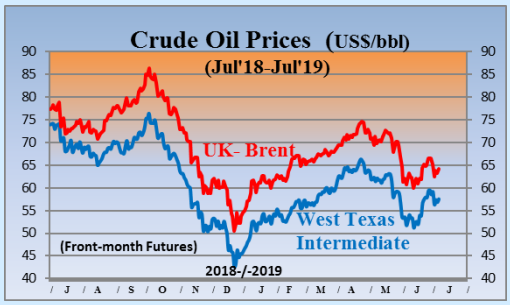
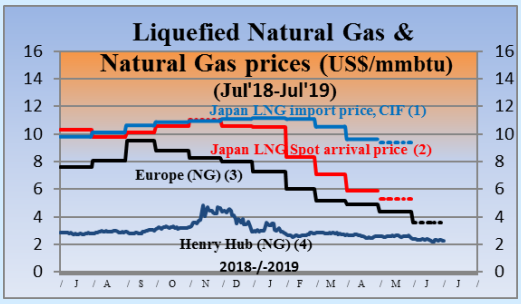
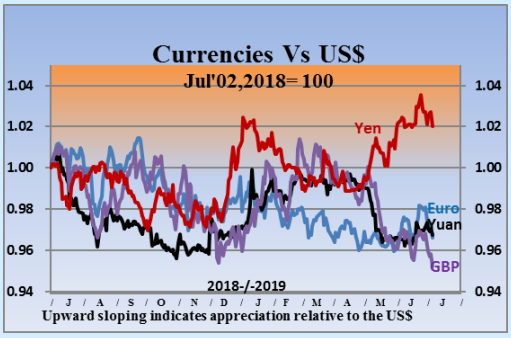


Sources:
(1) DOE-EIA
(2) Investing.com



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)
(5) Investing.com and Finance.Yahoo.com



Source: x-rates.com

Source: Investing.com and Finance.Yahoo.com

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As the gap between long-term contract and spot prices is so evident in the first half of 2019, it is becoming even more critical to secure better terms and conditions in term LNG contracts.

4. Update on Policies Related to Climate Change

The Cabinet decided Japan's long-term strategy under the Paris Agreement as a growth strategy. Further, the G20 Ministerial Meeting on Energy Transitions and Global Environment for Sustainable Growth was convened and stressed the importance of innovation and energy efficiency.

5. Update on Renewable Energies

The G20 Ministerial Meeting on Energy Transitions and Global Environment for Sustainable Growth and related events saw a series of achievements including the release of a Japan-EU-US joint statement on cooperation in hydrogen and fuel cell technologies, the release of an IEA hydrogen report, and a Hydrogen Council meeting.

6. ME: US-Iran Tensions Escalating

In addition to an attack on a tanker in the Gulf of Oman, a US drone was shot down by Iran, causing escalating tensions in the Persian Gulf. Japan and other countries must continue making all possible mediation efforts. (As of June 26)

1. Developments in Nuclear Power

Tomoko Murakami, Senior Economist, Manager
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On May 29, the Nuclear Regulation Authority (NRA) ordered Kansai Electric to change the design of its Ohi, Mihama, and Takahama Nuclear Power Stations based on its new finding about the scale of the Daisen Namatake pumice (DNP) tephra, one of the historical volcanic fallouts of Mount Daisen in Tottori prefecture. The NRA gave Kansai Electric an opportunity to explain based on the Administrative Procedure Act, but on June 11, Kansai Electric declined to do so and announced that they will change the design based on the new finding, and apply for a reactor installation and modification permit by December 27, 2019. Based on this response from Kansai Electric, at the 13th regular meeting on June 19, the NRA officially ordered the company to apply for a reactor installation and modification permit by December 27. Incidentally, the NRA did not require Kansai Electric to shut down the reactors at the May 27 meeting as "an eruption of Mount Daisen is not imminent and there is no urgent risk of a significant impact from erupted tephra on the reactor facilities." Kansai Electric will change the design of the three stations based on an expanded estimation of the DNP than before and undergo a review while continuing operations.

The NRA's order originates from a survey on the volcanic history of Mount Daisen that they were conducting to improve their methodology of assessing volcanic activity, during which they came across a new finding on the scale of DNP fallout in the Bulletin of the Geological Survey of Japan, a magazine published by the Geological Survey of Japan, AIST in 2017. Needless to say, Japan has numerous mountains other than Mount Daisen and has suffered countless typhoons, tornadoes, and other natural disasters throughout its history. Many researchers discover new findings about them every day and hundreds of papers are published every year. Utilities' efforts to incorporate new findings on natural disasters into their reactor designs are desirable in light of voluntary efforts to improve safety. However, it is not rational to require utilities to apply for a reactor modification permit each time a new finding is made. It is necessary to set certain criteria and requirements to decide which new findings should be considered in actual regulatory activities, such as the revision of the standards by the Geological Society of Japan.

Based on the policy announced at the fifth regular meeting on April 24 to take a reactor out of service if specific safety facilities cannot be constructed for it within the required period, at the 12th meeting on June 12, the NRA decided to request the shutdown of a reactor if its specific safety facilities do not pass the pre-service inspection by at least six weeks before the deadline, give the utility an opportunity to explain, and issue a shutdown order if the inspection is not passed by one week before the deadline. There are currently no plans to consider any alternatives to constructing the facilities. It will be interesting to see whether utilities decide to comply with the shutdown order.

On May 29, the International Energy Agency released a report titled "Nuclear Power in a Clean Energy System." The report is an objective and comprehensive analysis of the contribution of nuclear energy to national security, climate change prevention, and reduction of electricity tariffs, and its challenges going forward. For details, please visit the IEA website as well as the report "Nuclear Energy as a Clean Energy: Developments in International Discussions" by Kenji Kimura published on the IEEJ website on June 11.

2. Recent Developments in the Oil Market

Tetsuo Morikawa, Senior Economist, Manager
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After rising to around $74 following the US announcement to end the sanctions waivers on Iranian oil, Brent is in the mid-$60 range as of late June. In the interim, Saudi tankers and pipelines were attacked in mid-May and a Japanese tanker was attacked on June 13. Further, a US military drone was shot down by Iran on June 20. Iranian oil exports have presumably dropped significantly since the beginning of June. The United States also strengthened the sanctions against Venezuela on June 6, banning the export of diluents which are vital for the production of heavy oil.

Nevertheless, oil prices declined in the first half of June, with Brent temporarily falling below $60/bbl in mid-June. This trend is driven by uncertainty about the future. The International Monetary Fund has revised its 2019 global economic outlook downward to 3.3% and the US Federal Reserve Board is expected to cut interest rates twice within this year. In its monthly report released on June 14, the International Energy Agency dropped its 2019 demand forecast by 0.1 mb/d to 100.3 mb/d. Prices recovered after announcement for talks between President Trump and President Xi at the G20 and tensions in the Strait of Hormuz.

While Saudi Arabia maintains its policy of extending the production cut, in Russia, Deputy Prime Minister Igor Sechin, chairman of Rosneft, is said to be calling for a production increase to maintain Russia's market share. US crude production is increasing strongly, and the US Energy Information Administration foresees an increase of 1.36 mb/d from 2018 to 2019 and of 0.94 mb/d from 2019 to 2020. OPEC Plus is arranging a meeting in early July, and the most probable scenario is that the joint production cut will continue. However, any easing of the scale of the cut would be a bearish factor for oil prices. The market is facing conflicting, counteracting forces, such as geopolitical risks and the risk of recession.

The 27th meeting of the Natural Resources and Fuel Committee, Advisory Committee for Natural Resources and Energy was held on June 6 to discuss the draft report on the natural resources and fuel policies, resilient fuel supply in disasters, biofuels, and stockpiling target for oil and LPG from FY2019 to FY2023. The draft report also refers specifically to natural resource diplomacy as an initiative. The IEEJ Chairman commented: "It is important to not only approach resource countries in view of upstream development projects but also to work jointly with them in mid and downstream projects and carbon recycling. Further, in addition to conducting joint stockpiling with oil producing countries, Japan should also lease domestic stockpiling facilities to Southeast Asian countries that need to establish a stockpiling system, which would benefit both sides."

3. Recent Developments in the LNG Market

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Low spot LNG prices, notably in Northeast Asia, attract attention in in the first half of 2019, in addition to investment activities in LNG production projects. Assessed spot LNG prices in Northeast Asia declined from around USD 10 per million Btu for January delivery to the middle of USD 4s for July delivery, a historically remarkable decline to also a historically low level. Those spot LNG prices in Northeast Asia, which in recent years moved in the range between European spot gas prices as the lower end and crude oil equivalent as the higher end, have stayed near the lower end so far this year. In contrast, the average price of overall LNG imports in Northeast Asia dropped from around USD 11 in January to USD 8-9s in May, although it still stays at a much higher level compared with the plummeted spot LNG prices in the region.

The apparently persistent gap between spot and term contract LNG prices has been caused by steady built-up of production capacity and slower demand development. Australia exported nearly 31 million tonnes of LNG in the first five months of 2019, or 18% more than it did one year earlier, after exporting 70 million tonnes in the year 2018 or 22% more than it had done in 2017.

The United States exported 10.14 million tonnes of LNG in the first four months of 2019, 51% more than the same period in 2018, after exporting 22.52 million tonnes in the year 2018 or 53% more than it had done in 2017. After the Cameron LNG project shipped out its first LNG cargo by the end of May 2019, yet two additional LNG export projects have been under commissioning stages in the country.

On the other hand, LNG imports into Northeast Asia have not shown signs of growth so far this year, except for that of China. Japan, Korea, and Chinese Taipei decreased their respective LNG imports by 8.5%, 12%, and 5.5% year-on-year respectively in the first five months of the year to 33.39 million tonnes, 16.74 million tonnes, and 6.77 million tonnes, leading to bearish sentiments in the spot LNG prices.

According to the latest annual report from GIIGNL (International Group of Liquefied Natural Gas Importers), the share of spot and short-term (contracts of four years or less) volumes of in the total LNG trades in the world was 32% with 99.30 million tonnes in 2018, both the highest ever. While Japan was the largest spot and short-term LNG importer from 2007 until 2017, in addition to its title of the largest overall LNG importer in the world, its spot and short-term LNG import decreased each year from its peak at 25.81 million tonnes in 2014 to 14.67 million tonnes in 2018. On the other hand, China increased its spot and short-term LNG import to 17.71 million tonnes in 2018 to become the largest spot and short-term LNG importer, from 8.26 million tonnes in 2017, adding to its position as the second largest overall LNG importer for two years in a row with 54 million tonnes of total LNG imports in 2018.

In order to take advantage of availability of volumes in the spot and short-term LNG market, it is critical to secure better terms and conditions in term contracts.

4. Update on Policies Related to Climate Change

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Based on the recommendations decided by the Meeting on Long-Term Strategy under the Paris Agreement as Growth Strategy on April 2 (refer to the May edition of this Newsletter), on June 11, the long-term strategy under the Paris Agreement as a growth strategy was presented at the Global Warming Prevention Headquarters and subsequently decided by the Cabinet. The strategy was submitted to the secretariat of the UN Framework Convention on Climate Change on June 26 before the G20 summit.

On June 15 and 16, the G20 Ministerial Meeting on Energy Transitions and Global Environment for Sustainable Growth was convened. In its communique, the G20 Energy and Environment Minisiters adopted the G20 Karuizawa Innovation Action Plan on Energy Transitions and Global Environment for Sustainable Growth. The G20 Energy Ministers stressed the need to accelerate energy innovation including advanced nuclear, and advanced and cleaner fossil fuel technologies. They also noted the energy efficiency analysis such as the Global Energy Efficiency Benchmark work undertaken by the IEA, which aims at identifing the energy consumption efficiencies of industries and products in the G20 countries.

Furthermore, the G20 Karuizawa Innovation Action Plan proposed that international and regional organizations may (1) collect innovation policy information of the G20 members, (2) expand their analysis to better identify “innovation gaps” and actions that support energy transitions and help achieve a cleaner environment, and (3) report to the G20 on their findings. International cooperation will be promoted through opportunities such as the Hydrogen Energy Ministerial Meeting 2019 (autumn) and the International Conference on Carbon Recycling to be held in September 2019.

On June 7, Japan’s Energy White Paper 2019 was approved by the Cabinet. In “Chapter 2: Climate and Energy Policy under the Paris Agreement” under the Part 1 of the White Paper, the report attempts to assess the progress of emission reductions toward the GHG targets of major developed countries by decomposing their underlying factors into the decarbonization of energy supply and the improvement of energy efficiency. Japan and the United Kingdom are following the lines connecting the emissions in the base year and the target levels, while the emissions of the United States, France, and Germany deviate from their lines.

The White Paper also conducts a comparative analysis of major countries in terms of the “three Es,” which are energy security, economic efficiency, and the environment, using several indicators. Furthermore, the Paper introduces the efforts in reducing GHG emissions by global companies such as thyssenkrupp (iron and steel), BASF (chemicals), and Signify (electric appliances), including on the procurement of renewable electricity, hydrogen, and carbon recycling.

On May 28, the UN Secretary-General's Special Envoy for the 2019 Climate Summit Mr. Luis Alfonso de Alba said that at least 80 countries have signaled to the United Nations that they want to announce new climate pledges. However, it is not clear whether the number includes China and the EU countries, and “it doesn’t mean (the 80 countries) are ready to do that in the scale we need and by September,” Mr. de Alba said.

5. Update on Renewable Energies

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Electric Power Industry & New and Renewable Energy Unit

The G20 Ministerial Meeting on Energy Transitions and Global Environment for Sustainable Growth held in Karuizawa, Nagano prefecture on June 15 and 16 shared the importance of innovation in areas including hydrogen, CCUS, and carbon recycling.

Regarding hydrogen, a joint statement was released by the Japanese Ministry of Economy, Trade and Industry, ENER of the European Commission, and the US Department of Energy. The joint statement confirmed that the three countries/regions will strengthen cooperation regarding hydrogen and fuel cell technologies, specifically in (1) promoting technological cooperation; harmonization of regulations, standards, and criteria; and standardization, (2) sharing information on safety and the hydrogen supply chain and promoting international joint research and development, (3) studying and evaluating the potential of hydrogen in reducing CO_2 and other emissions, and (4) communication, education, and outreach. There are plans to issue a Memorandum of Cooperation (MoC) heading toward the second Hydrogen Energy Ministerial Meeting scheduled for September 25 this year.

On June 14, the day before the G20 meeting, the IEA published "The Future of Hydrogen, Seizing Today's Opportunities." This is the first report on hydrogen created by the IEA at the request of the Japanese government. The report defines the hydrogen produced from water electrolysis or from fossil fuels tied with CCUS as "clean hydrogen," and the synthetic methane, synthetic liquid fuel, ammonia, methanol, and so on produced from clean hydrogen as "hydrogen-based fuels/feedstocks," and provides a comprehensive explanation and analysis of the current status and future outlook of the production, transportation, storage, and application of the clean hydrogen and the hydrogen-based fuels/feedstocks. The report also makes proposals for promoting the use of hydrogen, including clarifying the role of hydrogen in the Long-Term Energy Strategy, creating demand for hydrogen, financial support, accelerating R&D for reducing costs, deregulation and standardization, international cooperation, and the early realization of four actions, which are: using industrial ports as logistics hub for hydrogen, utilizing existing natural gas networks, increasing FCEV among commercial vehicles and large vehicles and building the hydrogen refueling station infrastructure, and commencing the international trading of hydrogen.

Further, a Hydrogen Council meeting was held concurrently with the G20 meeting. The Council was started in January 2017 at the Davos meeting with 13 companies and has grown into a large group with more than 50 companies in the past two and a half years. The meeting was attended by more than 150 stakeholders including experts from the IEA and METI in addition to member companies. The meeting saw lively discussion on the creation of hydrogen demand particularly in the transportation sector, as well as dialogs with investors. While the significant role of hydrogen in the future energy mix was confirmed, the importance of public-private cooperation headed toward commercialization, such as for reducing costs and creating demand, was underlined. IEEJ Chairman and CEO Masakazu Toyoda participated in a panel discussion and pointed out that "to accelerate commercialization, in addition to technological innovation, it is necessary to lower costs quickly by using the existing supply chain."

6. ME: US-Iran Tensions Escalating

Sachi Sakanashi, Senior Research Fellow
Manager of Research Group
Acting President, JIME Center

Tension between the United States and Iran has escalated after Iran shot down a US military drone on June 20. When a tanker was attacked in the Gulf of Oman on June 13, the US stated that Iran was responsible, but many European and other countries asked for "more certain evidence." However, the Islamic Revolutionary Guard Corps then announced that it had shot down the drone and released alleged video footage of the incident, triggering calls in the US for some kind of retaliation.

The claims made by Iran and the US differ as usual, with Iran accusing the US drone of violating its airspace and the US claiming that the drone was flying over international waters. President Trump said the shooting-down may have been caused by some sort of error, while accusing Iran of a mistake. He also said that it is important to note that the incident did not cause any deaths.

It is believed that President Trump himself is against starting a new war in the Middle East. However, the administration's policy toward Iran is said to be led by National Security Advisor John Bolton and State Secretary Mike Pompeo, who have not ruled out the possibility of taking military action against Iran and even seem to support it. The outcome of the tensions between the US and Iran will likely be affected by which side has the louder voice in the Trump administration, the president or the hardliners against Iran.

Prime Minister Abe visited Iran from June 12 to 14 and completed the scheduled events smoothly, including talks with President Hassan Rouhani and Supreme Leader Ali Khamenei. However, the attack on the tanker in the Gulf of Oman occurred in the middle of the visit, once again highlighting the high level of tension in the region. Regardless of who was responsible for the attack, regional tensions are surely escalating, with the Houthi militants of Yemen, who the Saudi-led coalition has been attacking for more than four years, still carrying out sporadic attacks on Saudi airports and power stations.

Meanwhile, Iran has set a 60-day deadline for the JCPOA (nuclear deal), which was signed in 2015 to stop Iran from going nuclear, and declared that the country will step up its nuclear enrichment activities unless there is a change in the current situation in which only Iran is observing the nuclear deal due to the severe sanctions by the US. As Iran's demand of establishing a framework for exporting oil and conducting financial transactions even under US sanctions will not be easy to achieve, if it fails, Iran may add to tensions to the region by expanding the scope of its nuclear enrichment. Japan and other countries need to take all possible measures to avoid an accidental clash, which could spark a war that nobody wants. (As of June 26)

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