



# IEEJ e-NEWSLETTER

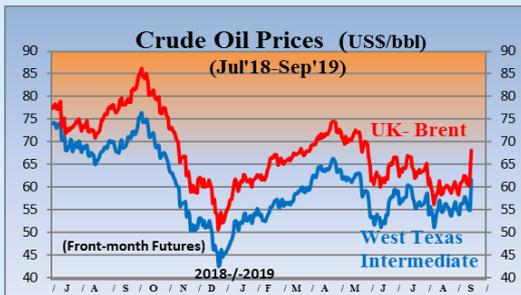
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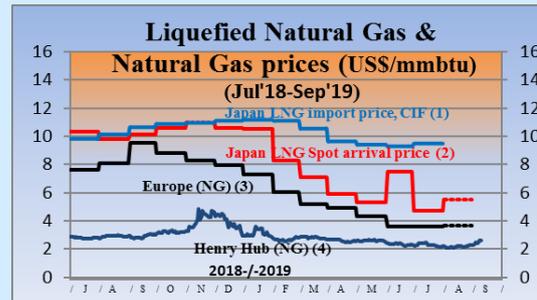
The Institute of Energy Economics, Japan

(As of September 16, 2019)



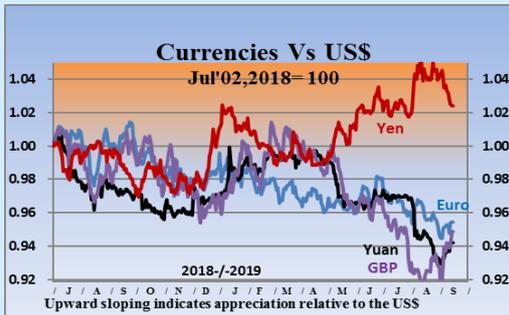
Sources:

- (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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## Summary

### 1. Developments in Nuclear Power

TEPCO officially announced the decommissioning of all reactors of the Fukushima Daini Nuclear Power Station. TEPCO aims to contribute to the local industry through the decommissioning project which will take more than 40 years. The efforts need to be monitored for a long time. (As of August 28)

### 2. Recent Developments in the Oil Market

Oil prices are struggling to rise because it is not clear whether there is sufficient progress in the US-China trade negotiations to restore the macroeconomy, which is already showing signs of weakness, and to prop up oil demand and prices.

### 3. Recent Developments in the LNG Market

The ongoing global LNG production capacity expansion and slower LNG demand in Northeast Asia meant a significant increase of LNG imports into Europe in the first half of 2019, as well as a widening gap between contract and spot prices in the Asian LNG market.

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

It is now less likely that major countries will update their nationally determined contributions for 2030 at the UN Climate Action Summit in September. Japan expects several major international climate change conferences to be convened in autumn.

### 5. Update on Renewable Energies

There are many institutional and technological challenges to overcome for integrating renewable energy into the electricity market, which are being discussed in a government council. Attention must be paid to the increasing discussions on introducing the Feed-in-Premium (FIP) system.

### 6. ME: Turmoil Deepens over Yemen (As of August 30)

Tensions remain over the Persian/Arabian Gulf, and a rift could develop in the Saudi-UAE relationship over Yemen. Yemen launched drone attacks on Saudi oil fields, but oil production was unaffected.



## 1. Developments in Nuclear Power

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

On July 31, Tokyo Electric Power Company made the decision to decommission all of the reactors (four 1100 MW units) at its Fukushima Daini Nuclear Power Plant. Fukushima Daini NPP had been hit by the tsunami that followed the Great Earthquake in March 2011 and so had been put in cold shutdown like the Onagawa Nuclear Power Plant and the Tokai Daini Nuclear Power Plant. The plant was technically eligible for a safety assessment as it had completed a stress test, but TEPCO had already announced in June last year that it would “consider specific steps toward decommissioning all units in line with regional safety.”

As for the time necessary for decommissioning, TEPCO said that “more than 40 years will be necessary as the plant will be decommissioned in parallel with Fukushima Daiichi.” If the decommissioning project can contribute to regional industry through the purchasing of materials and equipment and providing jobs for over 40 years, it could almost match an operating power plant in terms of contribution to local industry. TEPCO’s efforts need to be monitored for a long time.

Further, on August 26, TEPCO indicated its basic policy regarding restarting and decommissioning the Kashiwazaki-Kariwa Nuclear Power Plant, stating that decommissioning at least one of the five remaining units within five years after restarting Units 6 and 7 is an option.

On August 20, the Energy Ministry of Bulgaria announced that 13 entities have expressed an interest in the invitation of strategic investors for the country’s Belene nuclear new build project (VVER, two 1100 MW units). Of the 13 entities, seven including Russia’s Rosatom, China National Nuclear Corporation (CNNC), and South Korea’s Korea Hydro & Nuclear Power (KHNP) have clearly indicated their intention to become strategic investors; it is not clear whether the seven include any Japanese companies. Four other companies, namely one German and three Bulgarian companies, are apparently also considering a strategic investment. Plant vendors Framatome of France and General Electric of the US have also expressed an interest, although both are more interested in supplying plant equipment than in acquiring a stake. Aside from these 13, the Ministry also revealed that the Republic of North Macedonia, Bulgaria’s neighbor, has expressed an interest in becoming a minority stakeholder and purchasing electricity.

The Ministry of Energy plans to prepare a list of potential strategic investors within 90 days and decide the investors by May 22, 2020. Bulgaria’s state-run enterprise NEK, owner of the Belene power plant, intends to continue to hold a certain share of the company’s stock as a “blocking quota” to prevent decisions about the plant being made by outside parties.

The Belene project has been suspended since 2012 due to lack of funds and plans for restarting the project have come and gone several times in the past. The companies that have expressed an interest in the invitation have done so only because if they did not, they would not be able to acquire a stake. The negotiations between NEK and the Bulgarian government on the one hand, which want to retain the power to make decisions, and the strategic investors, who want to make decisions on the project they invest in themselves, provide a fascinating case study in investment. Developments in the project deserve attention. (As of August 30)



## 2. Recent Developments in the Oil Market

**Tetsuo Morikawa**, Senior Economist, Manager  
Oil Group  
Fossil Energies & International Cooperation Unit

Oil prices are struggling to rise, which is surely due to the uncertain prospects for the global economy. At the Federal Open Market Committee held on July 30-31, the Federal Reserve Board made the decision to reduce interest rates for the first time in almost ten years. At the time, however, Chair Jerome Powell said that the interest rate cut was a preventive measure against a recession and not a response, without promising to keep cutting rates. On August 1 and 23, the United States announced another round of increased tariffs on Chinese goods. The US-China ministerial trade talks have made little progress and the trade war is far from over. On August 14, US 10-year Treasury notes dipped below the 2-year note yield (yield inversion) for the first time since 2007, warning the market of a possible economic slowdown. Trade volumes are low, and there is concern that the weakening of the Argentine peso may spread to other emerging markets. Under such circumstances, the New York Dow Jones industrial average dropped by about \$1,200 (4%) in August from its peak in mid-July. With the growing risk of an economic slowdown, Powell has begun to signal the possibility of further rate cuts.

The pessimism about the economy is spreading also to the outlook for oil demand. In the monthly Oil Market Report released on August 9, the International Energy Agency lowered the outlook for oil demand in 2019 and 2020 by 0.1 mb/d and 0.05 mb/d, respectively, to 1.1 mb/d and 1.3 mb/d year-on-year. This outlook assumes that the global economy will recover in 2020, but if an economic recession occurs, the outlook for demand in 2020 would inevitably be lowered again. According to the Report, in June, the industry stocks of OECD countries exceeded the five-year average, which is the target for the joint production cut by OPEC Plus.

However, this does not mean that the supply risk has been resolved. Production continues to decline in Iran and Venezuela, with Iran's exports estimated to have dropped to 0.1-0.2 mb/d. Libya remains mired in civil war and, at the end of July, the country's largest oil field Sharara halted production. The release of the Iranian tanker that had been seized by British Gibraltar on August 15 helped ease the tension between the US and Iran, but the US had opposed the release and tension between the two countries remains. Although there has been no impact on oil production, on August 17, Yemen's Houthi rebels launched a drone attack on the Shaybah oilfield in eastern Saudi Arabia. However, the market has mostly shrugged off these events.

In the short-term outlook released on July 23, the IEEJ estimated the Brent price to be at \$60-70/bbl in the second half of 2019 and 2020, at \$75-85/bbl under the high price scenario with higher geopolitical risk, and at \$50-60/bbl under the low price scenario with higher macroeconomic risk. It goes without saying that the US-China talks to end the trade war must make progress to alleviate pessimism over the global economy and oil prices. However, even if the negotiations do make progress, it is not certain whether it would invigorate the macroeconomy, which is already showing signs of weakness, and prop up oil demand and prices.



### 3. Recent Developments in the LNG Market

**Hiroshi Hashimoto**, Senior Analyst  
Head of Gas Group  
Fossil Energies & International Cooperation Unit

The global LNG market experienced another unprecedented expansion in the first half of 2019. On the other hand, Japan decreased LNG imports by 8.2% year-on-year during the period. As a result, Japan's share in the global LNG market shrank from one-third in 2017 to a little more than one-fifth in the first half of 2019.

Among developing Asian countries, new LNG import plans are advancing on the back of expectations of stable LNG prices in the medium and longer terms in the global LNG market. Notable announcements were made with regard to specific projects in the Philippines, Vietnam and Hong Kong, during the first half of 2019. East Coast of Australia, West Coast of Africa, and Central and South America have also additional potential LNG utilization projects.

In addition to Japan, Korea and Chinese Taipei also decreased LNG imports by 12.4% and 6.9%, respectively, in the first half of 2019. While in Northeast Asia only China increased LNG imports by 19.4%, or 4.64 million tonnes to 28.50 million tonnes in the same period, the speed of growth slowed from annual rates of 40% or more in 2017 and 2018.

In contrast, LNG imports increased significantly in Europe, where decreasing domestic gas production has made room for LNG which otherwise might not have easily found destinations, especially since the last quarter of 2018. The European region, including the European Union and Turkey, imported nearly 42 million tonnes in the first half of 2019, surpassing Japan and China.

Among supply sources to the European market, LNG from Russia increased notably, as well as LNG from the United States, in the period (LNG exports to Europe from the two sources increased by more than 5 million tonnes each year-on-year). On the other hand, Gazprom, who still exclusively exports Russian pipeline gas, exported to Europe 95.3 bcm in the first half of 2019, decreasing by 5.9%, or 4 million tonnes LNG equivalent, compared to one year earlier. LNG exports from Russia to Europe quadrupled to 6.6 million tonnes. LNG sources from Russia and the United States are quickly emerging in the European gas market, where pipeline gas - including gas from Russia - LNG from Qatar, Nigeria and Algeria have competed against each other.

The United States exported 16.10 million tonnes of LNG to the global market in the first half of 2019, an increase of 57% or 5.9 million tonnes from one year earlier. Australia exported 17.5% or 5.5 million tonnes more LNG than one year earlier, amounting 37 million tonnes in the same period. The two countries are expected to have around 56 million tonnes and 80 million tonnes, respectively, of annual LNG production capacity by the end of 2019. However, actual export numbers may be smaller depending on LNG demand in Asian countries.

The ongoing rapid production capacity expansion and slower demand in Northeast Asia meant a widening gap between contract and spot prices in the Asian LNG market, leading to demand to secure better contract terms.



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

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

It is now less likely that major countries will update their nationally determined contributions for 2030 at the UN Climate Action Summit on September 23 for the following reasons.

Ahead of the Summit, the BASIC (namely Brazil, South Africa, India, and China) Ministerial Meeting on Climate Change was convened from August 14-16. In the joint statement, the ministers of the four countries emphasized that the Summit should be fully respectful of the principle of common but differentiated responsibilities and respective capabilities between developed and developing countries under the UNFCCC. On this basis, they looked forward for the Summit to produce positive outcomes for pre-2020 climate ambition by developed countries and implementation support for developing countries.

UN chief António Guterres has asked both developed and developing countries to update their nationally determined contributions under the Paris Agreement and announce plans for achieving carbon neutrality by 2050. Going against Secretary-General Guterres' intentions, however, the BASIC countries emphasized that the Summit should focus on developed countries achieving the pre-2020 climate ambitions and increasing their support to developing countries. China is set to send officials with lower ranks than planned as their representatives at the Summit, while Brazil may not send a representative at all.

In China, on August 13, China's National Center for Climate Change Strategy and International Cooperation (NCSC) issued a research report which projected that on the BAU scenario, Chinese CO<sub>2</sub> emissions would increase from 11.0 billion tonnes in 2020 to 14.3 billion tonnes in 2030 and further thereafter. To meet the target of peak CO<sub>2</sub> emissions by 2030, the report said it was necessary to set an absolute emission target of 10.6 billion tonnes in the five-year plan for 2021-2025. Further, non-fossil energy would only account for 17.6% of primary energy in 2030 with the current policy, falling short of the government target of 20%.

In Japan, a series of conferences on climate change are scheduled for autumn, particularly major international conferences related to technological innovations, including the Hydrogen Energy Ministerial Meeting on September 25, the International Conference on Carbon Recycling in the afternoon of the same day, the Innovation for Cool Earth Forum (ICEF) on October 9 and 10, and Research and Development 20 for Clean Energy Technologies (RD20), a meeting of leaders of national research institutes of G20 countries, on October 11. The discussions and Japan's leadership in these conferences must be monitored.

Regarding carbon recycling, a technology in which CO<sub>2</sub> is treated as a resource and is separated and collected to be reused as a fuel or material, the Roadmap for Carbon Recycling Technologies was released on June 7. The Roadmap presents technological and other challenges for each product such as chemicals, fuels, and minerals, and their estimated costs and CO<sub>2</sub> emission intensity in 2030 and 2050. Carbon recycling is attracting much attention in Saudi Arabia which will host the next G20 meetings, and attention must be paid to developments in international discussions.

Climate change was one of the topics in the G7 Summit convened in Biarritz, France on August 24-26, but it was not mentioned in the one-page Leaders' Declaration.



## 5. Update on Renewable Energies

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

On August 20, the Subcommittee on Large-scale Renewable Energy Introduction and the Next-Generation Power Network released its third interim report. The first and second interim reports released in May 2018 and January 2019, respectively, compiled the Subcommittee's opinions on such topics as enhancing cost competitiveness, establishing an environment for the stable long-term electricity business, overcoming network constraints, securing adequate adjustment capabilities, and reinforcing the industrial competitiveness of renewable energy. The third interim report clarifies the direction of future policy measures headed for a fundamental revision of the FIT law, focusing on the three main aspects of: (1) the differentiated application of the system depending on the characteristics of power sources, (2) appropriate business discipline, and (3) transformation to the next-generation network.

Regarding topic (2), appropriate business discipline, to respond to the issues of scrapped solar panel waste and concern over renewable power plant accidents associated with natural disasters, the parties will consider establishing a mechanism to secure funds for disposing of scrapped panels as well as safety regulations to prevent soil erosion caused by installing solar PV plants on slopes. Regarding topic (3), transformation to the next-generation network, it was decided to shift from the conventional "pull-type" grid formation, which responds to individual requests from power sources, to "push-type" grid formation, in which general transmission and distribution companies, the Organization for Cross-regional Coordination of Transmission Operators, JAPAN (OCCTO), and others build the electricity grid systematically and with a sense of ownership taking into account the construction of the power network and potential needs for connection. Regarding the reinforcement of inter-regional transmission lines, the report confirmed the need for a study based on a cost-effect analysis taking into account the benefits of enhanced supply stability, lower prices, CO<sub>2</sub> reduction, and so on.

The most notable of all is topic (1), the differentiated application of the system depending on the characteristics of power sources. As small solar PV plants, which can be installed close to users, and small geothermal, small hydropower, and biomass plants, which use local energies in the region, can play a role in a supply-demand integrated model to help strengthen disaster resilience, it was decided to categorize them as "regional-use power sources" and keep them under the FIT system on condition that the generated electricity will be for home and regional consumption. Further, the report clearly stated that it is important for large geothermal power and medium-sized hydropower, which entail higher development risks, to avoid over-dependence on electricity sales support from the FIT system and to develop new sites.

Meanwhile, regarding large commercial solar PV and wind power, whose generation costs are decreasing, the report classified them as "competitive power sources" that are likely to become viable without the FIT program, and stated that they should be integrated progressively into the electricity market by requiring renewable electricity producers to sell their electricity directly to the electricity market and to adjust imbalances, while accelerating efforts to lower costs through the current auction system.

Currently, there is intense discussion on how to integrate renewables into the electricity market. The views expressed at this interim report and by Subcommittee members suggest that large solar PV and wind power will be the first to enter the Feed-in-Premium (FIP) program, in which premiums are added on to market prices. The FIP program, however, also has its challenges. Institutional challenges include deciding how to set the purchase prices and premiums, and technological challenges include improving the accuracy of the technologies for predicting generation necessary for minimizing imbalance risks, and lowering the cost of power storage equipment for shifting the time of power generation. The system needs to be designed and introduced after verifying the superiority of the FIP program over the FIT.



## 6. ME: Turmoil Deepens over Yemen (As of August 30)

**Shuji Hosaka**, Senior Research Fellow  
Assistant Director  
JIME Center

As tensions in the Persian/Arabian Gulf remain, British Gibraltar released on August 15 the Iranian oil tanker it had seized in July. After the tanker was seized, Iran seized a British tanker in the Strait of Hormuz as if in retaliation. The US-led initiative to form a coalition to escort ships in the Gulf and around the Bab el-Mandeb Strait announced in July has attracted only a few participants so far, partly as Iran is infuriated by this plan. The United Kingdom, which is calling for a European-led initiative to protect shipping, was reported in early August to be participating in the US-led coalition, while Bahrain and Australia have also revealed that they will join the coalition. South Korea is also reported to be thinking of joining. As Japan continues to debate the participation of the Japanese Self-Defense Forces, Iran's Foreign Minister Mohammad Javad Zarif is set to visit Japan in late August to persuade Japan not to participate in the coalition.

In Yemen, the Southern separatist group Southern Transitional Council, which had been a part of the legitimate government, occupied major government buildings in South Aden, the base of the legitimate government, on August 10. The legitimate government called the occupation a coup. As the Southern separatists are said to be backed by the UAE, the incident could cause a major diplomatic rupture between Saudi Arabia and the UAE, which, alongside the Saudis, has joined the coalition against the Houthis.

Immediately after the Southern separatists captured Aden, Abu Dhabi's Prince Muhammad bin Zayed, the de facto ruler of the UAE, visited Saudi Arabia to meet King Salman and Prince Muhammad. The two countries reportedly agreed to continue to cooperate on the Yemen issue. The UAE and Saudi Arabia have been said to be taking joint steps in the Yemen War, but in reality, the UAE has often chosen to confront the legitimate government and Saudi Arabia, such as over the occupation of Socotra Island in the Indian Ocean (2018) and the scaling-down of UAE troops dispatched to Yemen (June 2019). The Southern separatists are demanding the removal of al-Islah, a group consisting of the Muslim Brotherhood and tribal forces, from the legitimate government as a condition for resolving the situation, a demand which matches the policy of the UAE. While both the UAE and Saudi Arabia have categorized the Muslim Brotherhood as a terrorist organization, Saudi Arabia has historically supported al-Islah and is thus relatively amicable toward them. Meanwhile, the UAE sees the Muslim Brotherhood as the greatest threat and thus al-Islah as an even greater danger than jihadist groups such as the Houthis and Al-Qaeda.

Meanwhile, the Shia Houthis who rule northwestern Yemen announced on August 17 that ten drones of the Houthi air force attacked the Shaybah oilfield in eastern Saudi Arabia. Saudi Arabia's Energy Minister Khalid Al-Falih said that the attacks caused a small fire in the gas plant, but the damage was limited with no impact on oil production or exports.

In Sudan which remains in turmoil, the military council and a civilian group that had opposed military rule signed a final agreement to establish a new civilian-military government. Abdalla Hamdok was elected as the prime minister of the transitional government.



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