



IEEJ e-NEWSLETTER

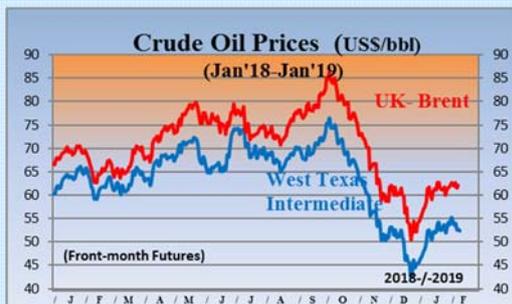
No. 154

(Based on Japanese No. 185)

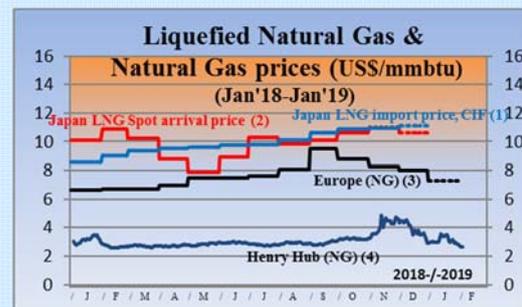
Published: February 13, 2019

The Institute of Energy Economics, Japan

(As of February 11, 2019)



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 and Finance.Yahoo.com



Source: x-rates.com



Source: Financial Times

Contents

Summary

【Energy Market and Policy Trends】

1. Developments in Nuclear Power
2. Recent Developments in the Oil Market
3. Recent Developments in the LNG Market
4. Update on Policies Related to Climate Change
5. Update on Renewable Energies



Summary

【Energy Market and Policy Trends】

1. Developments in Nuclear Power

Hitachi decided to freeze its Horizon nuclear new build project in the UK, maintaining that further investment is beyond its capacity as a private company. The causes of the high construction costs need to be examined.

2. Recent Developments in the Oil Market

The oil market is projected to see a demand surplus in the second half of 2019 if Iran's production decreases due to US sanctions. Meanwhile, the effect of the slowing macroeconomy on the demand for oil must be carefully monitored.

3. Recent Developments in the LNG Market

As the global LNG market expanded remarkably again in 2018, payments by importing countries increased even more significantly, reflecting higher prices. Thanks to increasing flexible supply sources, notably LNG from the United States, the gas markets have been globalizing.

4. Update on Policies Related to Climate Change

In the EU, agreements were reached on reducing CO₂ emissions from cars by 37.5% and phasing out subsidies as capacity mechanisms to coal-fired power plants. In India and Saudi Arabia, targets for renewable energy capacity were raised.

5. Update on Renewable Energies

The Global Commission on the Geopolitics of Energy Transformation released a report entitled "A New World: The Geopolitics of the Energy Transformation," which analyzes the geopolitical impact of the mass deployment of renewable energy.



1. Developments in Nuclear Power

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

On January 17, Hitachi, Ltd. announced that it was freezing its Horizon nuclear new build project in the United Kingdom. Hitachi had purchased the UK company Horizon Nuclear Power from two UK subsidiaries of a German power company in 2012 and completed the generic design assessment (GDA) of the advanced boiling water reactor (ABWR) by the UK government in 2017. The company had been negotiating the financing scheme with the UK government, but recently decided to freeze the project “from the viewpoint of its economic rationality as a private enterprise” after coordination efforts failed.

Since early on, Hitachi had announced three criteria for continuing the business: (1) securing reasonable returns, (2) a financing model that would enable Hitachi to keep the Horizon project off its balance sheet, and (3) an investment amount within an acceptable range as a private company. As the reason behind the decision, Hitachi President Toshiaki Higashihara cited changes in the investment environment since 2012, specifically, the lower strike price for wind power in the UK and other changes in the UK market. He stated that the decision to freeze the project was appropriate in light of the change in business environment, and the decision itself deserves respect.

This decision highlights the challenge of how to deal with the rising cost of nuclear new builds in developed countries, especially unexpected costs, and the loss of competitiveness it causes. Particularly, “additional safety measures after the Fukushima Daiichi accident” is not sufficiently persuasive for the multi-trillion yen construction cost for the project considering that the ABWR had completed the GDA in a short time. The reasons for the high cost must be analyzed in detail, especially as many new plants have started commercial operation since 2011 in Russia, China, India, Iran, and other countries. Otherwise, even if a project goes ahead, the difference between the high cost and the market price will be passed on to the public. The parties concerned must recognize that this situation will prevent the project from gaining long-term support.

On January 9, China’s Haiyang Unit 2 (1250 MW) entered commercial operation. With this, the four AP-1000 plants whose construction began between 2009 and 2010 (Sanmen Units 1 and 2, and Haiyang Units 1 and 2) have all started commercial operation, and China now has 45 nuclear power plants in commercial operation with a total capacity of 45.61 GW. An additional 13 plants totaling around 13 GW are under construction and a further 43 plants totaling 50 GW are planned. The light-water reactors under construction, including Hualong-1, a type of reactor designed in China based on technologies from France, the US, and others, are scheduled for completion in 2020 or earlier in line with the target to be “operating 58 GW and constructing 30 GW” by 2020. By constantly designing, constructing, and operating reactors, China is becoming the world’s third nuclear powerhouse not only in installed capacity but also technological capability. However, the number of new constructions has been slowing since 2017, which needs attention.

From January 21 through 25, discussions to “promote understanding of nuclear power” were held in plant-hosting communities and other regions such as Maizuru and Omaezaki in Japan, attended by opinion leaders from Europe, America, and Asia. The dialogs highlighted the importance of continuous disclosure and communication among the national and regional governments, operators, regulators, residents, and other stakeholders, based on the decades of coexistence of plant-hosting and neighboring communities with nuclear power plants.



2. Recent Developments in the Oil Market

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

Oil prices have been generally stable since the start of 2019. The Brent price, which had fallen to \$50/bbl at the end of 2018, has returned to around \$60/bbl as of late January 2019. The fall in prices stopped partly because US Federal Reserve Board Chairman Jerome Powell stated on January 4 that he would be flexible regarding monetary policy decisions, suggesting that the pace of interest rate increase in the United States might slow. The market apparently took this to mean that macroeconomic risks have fallen, and thus that shares and oil had been oversold in late 2018. Oil prices are also being propped up by factors such as additional production cuts by OPEC Plus starting in January 2019, the end of the temporary waiver of sanctions on Iran for eight countries including Japan scheduled for May 4, and forecasts of a slower increase in US production due to the lower oil prices.

The International Energy Agency's monthly Oil Market Report released on January 18 projects strong demand growth in 2019 to 100.7 mb/d, up 1.4 mb/d or 1.5% year-on-year. Iran's output has decreased by around 30% to 2.8 mb/d as of December 2018 since the recent peak June. Iranian oil exports will start to fall fully once the temporary waiver of sanctions on Iranian oil ends in May 2019, and production may fall well below 2 mb/d by the end of 2019. The output of OPEC Plus, which has agreed to cut production from January 2019, had already begun to decrease in December 2018.

According to the short-term outlook of the US Energy Information Administration released on January 15, US oil output is projected to grow by as much as 1.14 mb/d or 10.4% to 12.07 mb/d from 2018 toward 2019. However, the number of operating rigs in the US has flattened after peaking at 888 rigs in mid-November. Considering all of these factors, the most likely scenario for supply-demand fundamentals is that demand will exceed supply in the latter half of 2019 as Iran's output decreases due to US sanctions, putting upward pressure on oil prices, though this will depend on whether OPEC Plus complies with its production target.

Though oil prices are currently stable, the future of the macroeconomy remains unpredictable and could exert downward pressure on oil prices. The IMF's World Economic Outlook released on January 21 revised the global GDP growth rate for 2019 downward by 0.2% point to 3.5%. Though US stock prices have rebounded, the risk of a slowdown of the US economy remains. Brexit is facing extreme difficulties and as the end of March deadline approaches, a no-deal Brexit is a possibility. In China, Shanghai stock prices have fallen by 40% from the peak and the economic growth rate for 2018 was 6.6%, the lowest in 28 years. China's sales of new cars fell year-on-year in 2018 also for the first time in 28 years, and the trade value decreased from the previous month in December 2018 as the US-China trade war began to affect the real economy. Some say that an agreement to end the trade war may not be reached before the US's postponement of higher tariffs ends on March 1. If the tariffs are indeed raised, financial markets and certainly oil prices will be under downward pressure.



3. Recent Developments in the LNG Market

Hiroshi Hashimoto, Senior Analyst
Gas Group

Fossil Energies & International Cooperation Unit

The global LNG expansion continues. Thanks to production capacity growth in Australia, the United States and Russia, as well as demand growth in China and other Asian emerging markets, LNG trade volumes in the world increased by around 10% for two years in a row in 2018. Japan's LNG imports decreased slightly to 82.85 million tonnes, according to preliminary figures from its customs office. Although Japan remains the largest importer of LNG in the world, its share in the world shrank to one quarter of the global total.

On the other hand, LNG imports increased by more than 40%, or 16 million tonnes, to 54 million tonnes in 2018 in China, where natural gas consumption has grown rapidly in the last couple of years. As Korea also increased its LNG imports by nearly 18%, or 7 million tonnes, Asia probably increased LNG imports by almost 14%, or 30 million tonnes. On the supply side, Australia increased LNG exports by more than 20% to almost 70 million tonnes in the year, with INPEX-operated Ichthys project starting up. The United States and Russia also ramped up production from new LNG projects, increasing their LNG exports by more than 7 million tonnes each.

Along with the volumetric growth, corresponding payments also expanded in 2018, reflecting higher LNG prices in the year. Among the four big LNG markets in Northeast Asia, China's and Korea's payments for LNG imports increased by 80% and 50%, respectively. Those four markets in total imported 200 million tonnes of LNG, or two-thirds of the global volumes in 2018, paying USD 100 billion, compared to USD 72 billion in 2017.

The weighted average unit price of LNG landed the four markets in December 2018 reached USD 11 per million Btu for the first time in 45 months, as the falling crude oil prices in the fourth quarter had not impacted on term-contract LNG pricing yet due to time lags. On the other hand, spot LNG prices, which climbed sharply toward year-ends in the previous two winters responding to vibrant gas demand notably seasonable appetite from China, did fall in 2018 from USD 11s in the middle of September to around USD 9 by the end of the year.

The falling trend was caused by early counter-winter measures by Chinese LNG buyers and authorities, as well as increasing term-contracted imports of more flexible and diversified supply sources from Australia and the United States. As long-term contract supply started from the United States to Japan, both Japan and Korea more than doubled their LNG imports from the United States in the year, with Japan taking 3 million tonnes and Korea taking 5 million tonnes, respectively. Australian LNG increased its share significantly in the year in all the four markets in Northeast Asia.

Reflecting relaxed balance of the spot LNG market, unprecedented more than 30 laden LNG carrier ships were waiting for delivery orders on the sea in Southeast Asia and other regions at the end of December. At the same time, more LNG was transported to Europe during the fourth quarter of the year. While Russian gas export by pipeline to Europe increased by 5.8% during the first three quarters of 2018 compared to the same period one year earlier, the latest available figures show that 10.8% less volumes were exported to Europe in October and November 2018 combined than the same two months in 2017. Along with enhanced flexibility in LNG transactions, gas markets have been further globalizing.



4. Update on Policies Related to Climate Change

Takahiko Tagami, Senior Coordinator, Manager
Climate Change Policy Research Group
Global Environment and Sustainable Development Unit

In the EU, the triologue among the Council of the European Union, the European Parliament, and the European Commission, on December 17, 2018, agreed on the CO₂ emission standards for cars by 2030. CO₂ emissions from new cars sold in the EU must be reduced by 37.5% by 2030 compared to 2021 levels. The three parties had all proposed different numbers as the 2030 reduction target: the European Commission 30%, the European Parliament 40%, and the Council of the European Union 35%.

On December 19, the Council, the European Parliament and the European Commission agreed on the revised Electricity Regulation. The regulation sets a limit for plants that are eligible to receive subsidies as capacity mechanisms. Subsidies will be phased out for generation capacity whose CO₂ emissions are 550 g/kWh or more (including coal-fired power plants). Subsidies will be cut as soon as the regulation become effective for new plants and from July 2025 for existing plants. Poland won a special clause which protects capacity contracts with power producers that are approved before the end of December 2019. This agreement completes the political negotiation of the entire Clean Energy for All Europeans package which the European Commission proposed in 2016, including the revised Energy Efficiency Directive and the revised Renewable Energy Directive.

In India, Secretary of the Ministry of New and Renewable Energy said on January 7 that India was planning to increase the national renewable energy capacity (excluding large-scale hydropower) to 500 GW by 2028. The target had formerly been 227 GW by 2022, and the capacity was 74 GW as of the end of 2018. Further, on January 15, the energy minister of Saudi Arabia said it planned to install 59 GW of solar and wind by 2030. Saudi Arabia's former target was 9.5 GW of renewables by 2023.

In Japan, the fourth meeting of the Roundtable on Long-Term Strategy under the Paris Agreement as Growth Strategy was convened on December 21, 2018. In the previous meetings, experts were interviewed on such topics as innovation, green finance, green business and efforts at the regional level. This time, a free discussion was held based on a document summarizing opinions raised in the discussions so far. The next meeting will be a discussion on a skeleton with options to be prepared by Chairperson Shinichi Kitaoka (President of the Japan International Cooperation Agency).

On January 17, the IEEJ convened a seminar entitled "COP24: Its Implications and Future Prospects" after the COP24 held in Katowice, Poland in December 2018. IEEJ researchers who participated in COP24 reported on the negotiations on how to review the progress/achievement of GHG emission reduction targets and on the market mechanisms, while guest speakers from the Central Research Institute of Electric Power Industry, the University of Tokyo, and the International Environment and Economy Institute commented. The discussion topics ranged from the assessment of COP24 (how differences were given consideration and settled), and future challenges (the situation surrounding the submission of targets in 2020 and 2025, and the need of approaches focusing on technology development and deployment), to trends in finance and investment affecting climate change. The seminar was attended by more than 130 participants, highlighting the keen interest in international negotiations on climate change.



5. Update on Renewable Energies

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

On January 11, the Global Commission on the Geopolitics of Energy Transformation released a report entitled “A New World: The Geopolitics of the Energy Transformation” at the general assembly of IRENA (International Renewable Energy Agency) held in Abu Dhabi.

The Global Commission on the Geopolitics of Energy Transformation, established at the general assembly of IRENA one year ago, is an independent initiative which analyzes and discusses the impact of the mass deployment of renewable energy on energy systems, economies, and political dynamics among countries. The Commission is comprised of 18 experts from various countries in the areas of politics, energy, economics, trade, the environment, and development, including IEEJ Chairman & CEO Masakazu Toyoda.

The key points of the report on the energy transition through the mass deployment of renewable energy are as follows:

- Global political dynamics and relationships among countries will be transformed. The power of nations will become more decentralized. Countries such as China that invest heavily in renewable energy will gain influence while those that rely heavily on fossil fuel exports and cannot adapt to the energy transition will face risks and lose influence.
- The supply of energy will no longer be the domain of just a few countries, since most countries will gain the ability to achieve energy independence, enhancing their energy security.
- The energy transition will generate considerable benefits and opportunities. It will promote prosperity and job creation and enhance sustainability and equity.
- There are also challenges. Fossil fuel-exporting countries may face instability unless they reinvent themselves for the new energy age. A rapid shift away from fossil fuels could have significant consequences for the regional communities and economies that depend on fossil fuels, and for the global economy.
- Although there are difficulties as well as benefits, the energy transformation will ultimately move the world in the right direction by addressing climate change, combating pollution, and promoting prosperity and sustainable development.

In summary, the report points out that the global energy transition brought about by renewable energy will have crucial geopolitical significance by changing the current political power structure among countries based on fossil fuels and will fundamentally transform the economy and society.

Renewable energies (including hydropower) accounted for 25% of the global electricity output as of 2017, but wind power and solar PV which have large potential for expansion still account for just 4% and 1%, respectively. The geopolitical impacts described in the report may not appear until after the demand for oil has peaked, but preparations such as for zero-carbon hydrogen from fossil fuels should be started as early as possible as countries relying on fossil fuel exports will need time to diversify their economies. The report’s analysis of the energy transition through the mass deployment of renewable energy from the perspective of geopolitics is interesting.



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, Director
IEEJ Newsletter Editor: Ken Koyama, Managing Director
Inui Bldg. Kachidoki, 13-1 Kachidoki 1-chome, Chuo-ku, Tokyo 104-0054
Tel: +81-3-5547-0211 Fax: +81-3-5547-0223

