

IEEJ e-NEWSLETTER

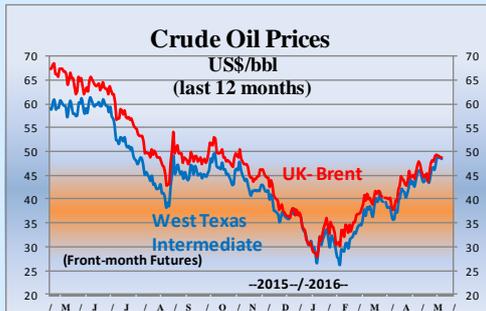
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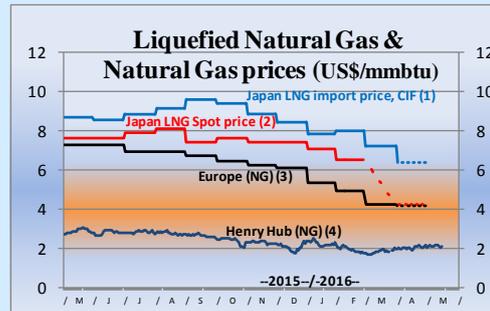
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Source: DOE-EIA, Financial Times, NASDAQ

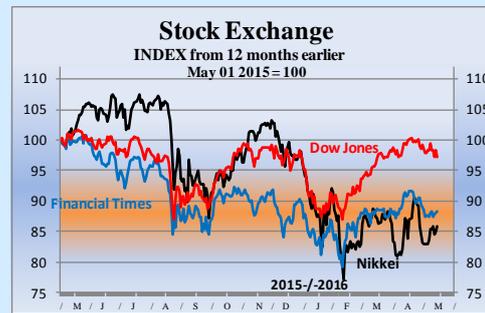


Sources:

- (1) Ministry of Finance "Japan Trade Statistics"
- (2) Ministry of Economy, Trade and Industry (contract month basis)
- (3) Estimated by World Bank and World Gas Intelligence
- (4) DOE-EIA, NYMEX (Front-month Futures)



Source: x-rates.com



Source: Financial Times

Contents

Summary

【World Monitoring】

1. US: Hurdles for US Participation in the Paris Agreement
2. EU: Expectations for Norwegian Natural Gas Resources
3. China: Improving Situation for Renewables Development
4. Russia: Cyber-terrorism Causes Massive Blackout in Ukraine

Summary

【World Monitoring】

1. US: Hurdles for US Participation in the Paris Agreement

The signing ceremony of the Paris Agreement was held in New York. As the Republican-ruled Congress is unlikely to ratify the Agreement, the Obama Administration will be exploring various paths to formal participation.

2. EU: Expectations for Norwegian Natural Gas Resources

Norway's state-run firm has announced a major gas development program. The country is a major supplier of gas to Europe alongside Russia and expectations are high. However, there are doubts about the country's gas output and infrastructure.

3. China: Improving Situation for Renewables Development

A new system for full amount purchase of renewables was launched at the end of March, and target levels for renewable electricity and the launching of the Green Certificate system were decided. It will be interesting to see how these contribute to the development of renewables.

4. Russia: Cyber-terrorism Causes Massive Blackout in Ukraine

The world's first major blackout caused by cyber-attacks hit Ukraine at the end of 2015, with some commentators suggesting the involvement of Russia. The relationship between cyber-security and energy will become increasingly important.

1. US: Hurdles for US Participation in the Paris Agreement

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On April 22, representatives from 175 countries and regions gathered in New York for the signing ceremony of the Paris Agreement for tackling climate change. Another ten countries or so are also expected to sign. Upon signing the Agreement, US State Secretary Kerry stressed that this agreement alone will not be enough to attain the goal of keeping the rise in temperature below 2°C, but that it marks an important opportunity to lead the global economy toward further decarbonization and sustainability, and that it sends a message to the market. UN Secretary-General Ban Ki-moon urged the countries to proceed with domestic steps to implement the Paris Agreement as early as possible. Fifteen countries ratified the Agreement upon signing it, and the US State Department expressed its intention to accelerate the necessary domestic procedures and ratify the Agreement by the end of the year.

In the current Republican-ruled Congress, the Agreement has little chance of being ratified through the regular ratification procedure of winning a two-thirds Senate majority. On April 21, Senate Republicans released a statement re-emphasizing its stance toward the Paris Agreement, noting that the Kyoto Protocol suffered a spate of withdrawals and only a very few of those countries that stayed managed to actually reduce GHG emissions. It also pointed out that conflicting interests between the countries over responsibility for reducing emissions have not changed since the Kyoto Protocol, and thus the Paris Agreement is not expected to achieve much more than its predecessor. The Obama Administration is working on CO₂ emission regulations for the power sector to confirm the feasibility of the country's reduction target, but as evidenced by the Supreme Court's suspension order in February, the legality of the regulations is not stable. The statement also casts doubt on the feasibility of the EU's ambitious reduction target in the Paris Agreement, points out that neither China nor India has made a substantial commitment to reductions, and concludes that the party cannot support the Agreement.

Also on April 21, Michael Bloomberg, former governor of New York, released an interesting editorial, arguing that the US's target under the Paris Agreement is achievable even if the Supreme Court blocks the EPA's CO₂ emission regulations and the Clean Air Act. As the grounds of his argument, he explained that actual efforts on GHG emission reduction will be taken primarily by the private sector, and that more state and municipal governments are now promoting emission reduction policies in response to the American public's insistence on climate action.

But how will the Obama Administration circumvent ratification by Congress to formally join the Paris Agreement? Three possible options are likely to be investigated for entering into an international agreement negotiated by the president: (1) Winning the majority support of both houses of Congress, (2) Approval by the president without congressional approval based on his powers under a pre-existing agreement, and (3) Approval as an executive agreement that the president can sign using his constitutional powers without congressional authorization. All options have merits and demerits in terms of legal stability and legal binding force, but regardless of the choice, the opposition will almost certainly file a lawsuit. The growing political fight over the appointment of the Supreme Court judge will likely affect the US's participation in the Paris Agreement.

2. EU: Expectations for Norwegian Natural Gas Resources

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In April 2016, Norway's Gassco announced that feasibility studies are under way on the expansion of its domestic gas production capacity and the construction of a pipeline from the Barents Sea to Europe. Gassco is a state-run firm that transports natural gas from the Norwegian continental shelf (NCS) by pipeline to Norway and Europe. In its latest annual report, Gassco announced plans to expand the production capacity of its Kaarstoe gas plant from the present 5.7 million m³/day (approx. 1.54 million tonnes/year in LNG-equivalent) to 93.7 million m³/day (approx. 25.31 million tonnes/year in LNG-equivalent) from October 1, 2016, and to ramp up the transport capacity from the Kvitebjøen gas field to the Kollsnes gas processing plant to 9.5 million m³/day (approx. 2.57 million tonnes/year in LNG-equivalent) starting from the end of 2016. The report also pointed out the need to develop its gas transport system to maintain natural gas production from the NCS in the long run, and announced that feasibility studies are under way for pipeline construction, though the decision will depend on the result of exploration.

Supplying approximately 25% of Europe's gas demand, Norway is a major supplier of gas to Europe alongside Russia. The country's basic policy is to improve the well-being of its people by developing and exporting its energy resources, with the development of oil and natural gas and their export mainly to Europe accounting for approximately 15% of its GDP and 57% of exports. Recently, the country has been focusing on developing natural gas, anticipating increasing demand for the energy, which is cleaner than other fossil fuels and has a higher reserves/production ratio than oil. In 2011, in order to develop its natural gas fields in the Barents Sea, the country decided to construct an undersea pipeline from the offshore fields that will connect to the existing pipelines.

Though not a member of the EU, Norway has adopted most of the EU Directives and is working closely with the EU through such treaties as the European Economic Area (EEA) Treaty of 1994. The EU is thought to be counting heavily on Norwegian gas resources in diversifying its natural gas supplies, as evidenced by the Third EU-Norway Energy Conference in Brussels in February 2016 which once again discussed reinforcing the ties between the parties.

Although the government and the EU have high hopes for Norway's natural gas resources, the Norwegian Petroleum Directorate predicts that gas output will decline (from 115.0 billion m³ in 2015 to 106.6 billion m³) caused by a drop in output from Troll, the country's largest gas field. Further, regarding the construction of a pipeline, there are concerns about government policy risks, citing the 90% tariff cut for the Gassled pipeline in 2013 that led to a lawsuit by investors. Moreover, while development plans are being considered, as explained earlier, proven oil reserves and actual output have been declining since 2001, and the prospects for gas resource and infrastructure development, as well as Europe's gas demand in the future, are also uncertain. Therefore, the Norwegian government's investments and efforts in developing resources need to be closely monitored.

3. China: Improving Situation for Renewables Development

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On April 22, Vice Premier Zhang Gaoli signed the Paris Agreement at the UN Headquarters as the special envoy of President Xi Jinping. The international community is keenly watching how China will meet its self-declared targets of achieving the peaking of CO₂ emissions around 2030 as soon as possible and raising the share of non-fossil energies to 20% by 2030 (12% as of 2015). On March 3, the National Energy Administration (NEA) released the Guiding Opinions on Establishing Renewable Energy Portfolio Standards ("Guiding Opinions"), and on March 28, the National Development and Reform Commission (NDRC) issued the Guidelines for Full Amount Purchase and Management of Renewable Generation ("Management Guidelines"), starting full-scale efforts to improve the situation for developing renewable energies.

According to the Guiding Opinions, the NEA will assign each region a target share for renewable energy in primary energy consumption and a target share for non-hydropower renewable electricity in overall power consumption, based on the renewable resources and energy consumption of each province, direct-controlled municipality, and autonomous region. The municipalities will be required to draft renewable energy development plans and achieve their regional targets. While the target share for renewable energy for 2020 is still being considered, the target share for non-hydropower renewable power consumption has been set at 9% nationwide (4% achieved as of 2015), and at the regional level, at 13% (maximum) for the eight regions including Xinjiang and at 5% (minimum) for the six regions including Shanghai. The Guiding Opinions further require all electricity producers except exclusively non-thermal ones such as nuclear power operators to raise the level of non-hydropower renewables to at least 9% of overall generation by 2020, and announce the introduction of the Green Certificate Trading System, in which a certification body authenticates the amount of non-hydropower renewable generation, and issues a Green Certificate. An electricity producer that cannot achieve the target itself must purchase Green Certificates from the market to compensate for the shortfall. The Guiding Opinions state that the Green Certificates can be used for trading CO₂ emissions and energy consumption quotas, but that the rules for management are to be prepared separately.

The Management Guidelines, which describe the specific process for purchasing non-hydropower renewable generation, require transmission operators to purchase biomass and distributed solar PV generation, as well as wind and mega solar power produced in electricity importing regions, for the full amount at the reference prices set by the NRDC. For wind and mega solar power produced in electricity exporting regions, the output will be divided into two groups, "guaranteed purchase" and "market trading", each with a separate purchase process. The amount of electricity for "guaranteed purchase" will be determined by the NEA on the basis of securing rational earnings from renewable electricity, and will be purchased by transmission operators at reference prices. The electricity for "market trading" will be purchased at extremely low "contract prices," but the transmission operators must pay for the price difference with the standard price for coal power. For the producers, selling electricity for "market trading" would still be attractive despite its low price, as the marginal cost of generation is nearly zero and the "price gap" with the standard coal power price will be compensated. Meanwhile, transmission operators will have an opportunity to purchase "market trading" electricity at extremely low prices, though paying for the price difference, thus further promoting full amount purchase.

The Guiding Opinions do not yet specify the timing of launch and the penalties for not achieving the renewable electricity target and the Green Certificate Trading system, a Chinese version of the RPS, but they are expected to be introduced by 2020. Meanwhile, the Management Guidelines have been put into effect immediately. It will be interesting to see how these policy measures contribute to the development of renewable energies.

4. Russia: Cyber-terrorism Causes Massive Blackout in Ukraine

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As Ukraine struggles to find a way to resolve the conflict with Russia, the vulnerability of the country's energy system is reaching critical levels. On December 23, 2015, a massive blackout hit the city of Ivano Frankivsk in western Ukraine, affecting 230,000 people. Relatively unreported in the Japanese media, the incident caught the attention of the international community as the first major power cut caused by a cyber-attack.

Though the blackout itself was resolved in a few hours, it alarmed the US government, which sent an expert team of the DOE, Homeland Security Departments and the FBI on December 25 to assist the Ukrainian authorities in their investigations. In late December, the Ukrainian authorities announced that the power cut was caused by malware (malicious software) named BlackEnergy 3 developed by Russian hackers, and that mass telephone calls from Russia had blocked customers' inquiries to electricity suppliers about the power cut. Further, in February 2016, the Ukrainian Energy Ministry revealed that the calls originated from hackers within Russia.

In early January, CNN and others reported that "the US government has detected the same type of malware in American industrial systems, while withholding judgment on the possibility of a cyber-attack by Russia". However, in February, staff involved in the investigations by the US authorities and private companies commented that "BlackEnergy 3 is unlikely to cause serious damage, and the incident was probably caused by other more destructive and malicious malware."

The report released by the US Homeland Security Department on February 26 and various media reports concluded that several highly-skilled hacker groups had conducted simultaneous malware attacks on three Ukrainian power distributors from outside Ukraine and infected their computer and control systems, caused the blackout, neutralized the control systems, and crashed the backup power supply. Although some suggested Russia's involvement, the Obama Administration has not yet condemned Russia by name, while Russia has remained silent throughout. The cause and background of this incident will require further investigation.

On April 18, the US authorities announced plans for a senior official meeting between US and Russia on cyber-security in the near future. The meeting is expected to discuss the details of the agreement on cyber-security that the two countries signed in 2013. Cyber-security, including in the energy sector, has become a serious issue in recent years particularly in developed countries, and was discussed at the G7 meetings in Rome and Hamburg. Will this opportunity help foster trust with Russia? Developments must be closely monitored.

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Energy Indicators of Japan

IEEJ Homepage Top

Back Numbers of *IEEJ e-Newsletter*

Back Numbers of *IEEJ Newsletter* (Original Japanese Version - Members Only)

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