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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

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1. Recent developments in Gas and LNG markets

Hiroshi Hashimoto
Senior Analyst, Gas Group
Coal & Gas Subunit
Fossil Fuels & Electric Power Industry Unit

The global LNG trades in the first half of 2014 grew by a few percentage points year-on-year to 120 million tonnes, three-quarters of which, or 90 million tonnes, was imported into the Asian and Middle Eastern importing countries. While Japan's imports in the period remained robust as the past three years at 44 million tonnes, China's LNG imports increased by almost 20% year-on-year to nearly 10 million tonnes. China also increased pipeline gas imports from Central Asia and Myanmar by 14% to 10.77 million tonnes and domestic gas production by 8.7% to 61.3 bcm. Dismal natural gas demand Europe kept high level of LNG re-exporting activities, resulting in a 16% decline in the region's net imports of LNG at a little more than 15 million tonnes. Papua New Guinea's PNG LNG, the only LNG export project that started operation in the first half of 2014, reached 100% of the plant's capacity at the end of July.

Turning our eyes onto long-term LNG procurement activities, the Cameron LNG project planned in Louisiana in the United States made a final investment decision in early August after securing a USD 7.4 billion project financing deal from a banking consortium led by Japan Bank for International Cooperation (JBIC) and eleven commercial banks of Japan.

The Federal Energy Regulatory Commission (FERC) granted the Freeport LNG project planned in Texas a construction approval at the end of July, making it the third project to have all necessary approvals to advance to construction among those projects in the Lower 48 with licenses to export LNG to those countries without a free-trade agreement (FTA) with the United States. The two projects and the Cove Point project planned in Maryland - that also expects an imminent construction approval - involve Japanese players and have lifting commitment from Japanese electric power and city gas companies. They all expect to start construction in 2014 and commence commercial operation in 2018. In the middle of August 2014 the Department of Energy (DOE) finalized changes to the process to grant licenses to export LNG to non-FTA countries in which projects are required to obtain the environmental approval from the FERC before reviewed by the DOE, as initially proposed in late May.

Those companies involved in LNG export projects under construction in Australia reported progress of works during their quarterly and half-year reports in late July and early August. According to those reports, the Queensland Curtis LNG project remains on track to start LNG production by the end of 2014, followed by three other projects that are also on track to start in 2015 as previously reported.

LNG exported from the United States and lifted from other sources based on equity participations is expected to enhance flexibility in LNG transactions. In parallel with the commercial developments the Japan's Basic Energy Plan published in April stated that measures should be taken to make commercial practices in LNG sale contracts more flexible, including abolishment of destination restrictive clauses in FOB deals. The G7 Summit Declaration in June included an idea of promoting flexible gas markets including relaxation of destination clauses. The Joint Statement by Prime Ministers of Japan and Australia in July also confirmed the importance of flexible gas markets. Those concerted initiatives of commercial and governmental levels are expected to further promote flexibility in LNG transactions.

2. Issues for Agreeing on the Next International Framework on Climate Change

Hiroki Kudo, Senior Research Fellow
Global Environment and Sustainable Development Unit

As events related to international negotiations on the next climate change framework draw near, such as the UN Climate Summit in September, COP20 in December and COP21 in Paris at the end of next year, the international community will increasingly focus on the draft commitment (intended nationally determined contributions: INDCs) that each country will submit. Here, this commitment means the effort that each country pledges to make to fight climate change until a target year, including numerical targets such as the GHG emissions reduction target set by the Kyoto Protocol. However, what the draft commitments will actually include, and how they will be reviewed, remain to be discussed.

The process of setting the country-specific targets for the next climate change framework beyond 2020 has apparently shifted from the top-down approach taken for the Kyoto Protocol, to the bottom-up approach in which each country decides the efforts it pledges to make based on its own circumstances, which will be reviewed on a continuing basis. This should allow each country to take more realistic measures, and ensure fairer target-setting by enabling a wider range of both developed and developing countries to participate. But will these negotiations proceed smoothly? It is unlikely, as there are many issues involved.

For example, how should the target of each country be evaluated? At the beginning of this year, the EU announced a target to reduce GHG emissions by 40% from 1990 levels by 2030. The evaluation by the media and environmental groups tends to be affected strongly by numerical size. However, numbers such as targets and policy measures presented by countries do not necessarily represent how hard a country is actually working or how challenging the target is, due to differences in climate, efficiency of energy usage, and the energy supply structure among countries. Nevertheless, numerical size could easily be emphasized in the negotiations in which each country is representing its own interests. It is therefore essential to set benchmarks, overall and for each area, that can objectively and comparatively evaluate the targets and costs presented by each country. However, current benchmarking is inadequate due to technical restrictions, including data availability.

These concerns would be unnecessary if the countries can agree on a collaborative framework in which their targets are adopted as they are, but considering past negotiations and the discussions on the long-term GHG reductions target, it is hard to imagine an agreement being smoothly reached at COP21. Toward such an agreement, the kind of draft commitments that the countries will submit, and the kind of framework that will be used for reviewing the draft commitments, including the common benchmarks for evaluating the targets, will attract much interest in the remaining year.

3. Okinawa's Stalled Solar PV Introduction Plan, and Actions to be Taken

Hisashi Hoshi, Board Member, Director
New and Renewable Energy & International Cooperation Unit

Okinawa's plan for introducing solar PV is deadlocked. Okinawa Electric announced on July 31 that it is struggling to connect to the grid the new solar capacity amounts that have been filed since August. The problem of limited ability to connect new capacity has long been pointed out in Hokkaido where solar PV plants are concentrated, but the same problem has now occurred in Okinawa, the other end of the country.

Okinawa's grid is small and not connected to other regions. Further, the weather tends to change almost equally throughout Okinawa, exacerbating the total output fluctuations of solar power. Thus, it has always been feared that the amount of renewable electricity that can be connected in Okinawa is more limited than in other regions. In fact, last December, the Ministry of Economy, Trade and Industry announced countermeasures including installing large battery cells and conducting a demonstration project on technologies for controlling and managing the introduction of renewable electricity. However, such demonstrations require one to two years, and the measures cannot be introduced immediately.

Nevertheless, the overwhelming rush of applications for licensing solar PV capacity in March increased the urgency of the situation. Due to the reduction of the purchase price of solar electricity from 36 yen/kWh to 32 yen/kWh from next fiscal year starting from April, the volume of newly licensed solar power plant capacities was added by as much as 27 GW for March only for the entire country and "a volume far more than expected (Okinawa Electric)" of 180 MW for Okinawa.

On July 9, Okinawa Electric, unable to leave the situation as it is, announced that it will, for the time being, put on hold the applications for grid connection of renewable electricity submitted since April 1. Further, on July 31, the company declared its decision based on subsequent discussions that it will license the capacities filed before the end of July, but that the capacities filed since August "may not be connected".

To be able to accept the applications submitted between April and July, Okinawa Electric took various measures such as: (1) minimizing the company's thermal electricity output, (2) shutting down its renewable power plants, and (3) using the company's slot for wind power capacity for solar PV. This is probably the best it can do at the moment. Measures (2) and (3), however, do not actually help expand the overall renewable capacity and are merely stopgaps.

Just two years after the launch of the FIT system, the renewable electricity program of Japan has started to suffer in Hokkaido and Okinawa, which are the weak areas in introducing renewable electricity. Under normal circumstances, electricity producers and grid operators should have finished taking both tangible and intangible measures before the situation got this bad, and should have helped renewable energies to be introduced smoothly. However, the rapid expansion of renewables due to the FIT system has not left any time to do so.

What should be done? The first step is to discuss the energy mix and establish the appropriate share for renewable energies, particularly the variable power sources. Then, it is necessary to design a system so that the introduction of renewable energies keeps pace with the progress of grid optimization. Introduction of renewable energies is becoming increasingly difficult.

4. China Watching: The Direction for Coal-fired Thermal Power

Li Zhidong, Visiting Researcher
Professor at Graduate School, Nagaoka University of Technology

For China which is currently struggling with serious air pollution and the largest CO_2 emissions in the world, reducing coal consumption is critical for improving air quality and reducing CO_2 emissions. At the same time, the abundance and cheapness of coal makes it impossible to ignore for ensuring a stable and economically efficient energy supply, which is essential for economic growth. Therefore, coal-fired thermal power, which consumes half of all China's coal, is attracting attention.

In September last year, the government released the Action Plan for Preventing Air Pollution (2013–2017) and in March this year, it also released the action plan for stronger prevention of air pollution for the energy industry, prohibiting the construction of new coal-fired thermal power plants except co-generation plants, in cities and the three areas of the Beijing, Tianjin, Hebei (Jing-Jin-Ji) Belt, the Yangtze Delta and the Pearl River Delta, where air pollution is severe. The existing small coal-fired thermal plants can be upscaled to above 350 MW, but only if their coal consumption does not increase. Further, the construction of nine large-scale coal-fired thermal power bases in the coal-rich western area and the twelve "West-East Electricity Transmission" grids for carrying electricity to the eastern area will be strongly promoted, to increase the transmission capacity by a net 68 GW by 2017.

Meanwhile, stricter regulations on the emission of air pollutants have been introduced since this July. For coal-fired thermal, the emissions standards per cubic meter were tightened significantly from 50 mg to 20 mg (focus regions) and to 30 mg (nationwide) for soot, from 400 mg to 50–100 mg for SO_2, and from 450 mg to 100 mg for NO_2. For gas-fired thermal, the standards were set at 5 mg for soot, 35 mg for SO_2, and 50 mg for NO_2. According to the media, the National Energy Administration of China will draw up an efficiency improvement and emissions reduction plan for coal-fired thermal plants, which will require a net thermal efficiency of at least 41% and an emission level similar to that of gas-fired thermal for newly constructed plants, and will also require existing coal-fired thermal power plants that are 650 MW or larger to be upgraded or remodeled within five years so that they can meet the similar standards. The plan has already been submitted to the State Council, and will be implemented pending approval. Meanwhile, in March, the Ministry of Environmental Protection announced that it would set stricter criteria for environmental impact assessments, and that no increase in total air pollutant emissions within the region would be a requirement for licensing new construction and expansion of coal-fired thermal.

There is a reason for increasing coal-fired thermal power at the risk of making CO_2 emissions permanent. Assuming that the annual economic growth rate remains at 7% until 2020, and assuming a GDP elasticity value of 0.8 considering increased electricity saving, the demand for electricity will grow by 5.6% each year, and electricity generation will increase by 46% to 7,900 TWh from 5,400 TWh in 2013. The output of non-thermal power sources, including nuclear, which has reached 1,170 TWh in 2013 and will continue to expand sharply, can only partially cover the increment of electricity demand. For gas-fired thermal, Beijing City is planning to close four coal-fired thermal power plants by 2016, and replace them with new gas-fired thermal plants with a total capacity of 4.9 GW. However, it is not easy for the whole country to shift from coal-fired power to gas-fired power. This is because first, the cost of gas electricity is higher than coal-fired power, and second, the shift to gas will occur primarily for coal consumption in the buildings sector and for small coal boilers that are relatively cost-effective, rather than in the power generation sector.

For the longer term, in March, the China Electricity Council released a forecast that coal-fired power generation will increase to 6,910 TWh (58% of total generation in 2030 from 3,960 TWh (73%) in 2013, but will then gradually decrease to 5,870 TWh (42%) in 2050. Considering the improvement in generation efficiency, coal consumption for electricity generation and CO_2 emissions from coal-fired thermal power are likely to peak before 2030.

5. EU Watching: Scottish Independence Referendum and Ownership of the North Sea Oil Fields

Wataru Fujisaki, Senior Researcher
Global Energy Group 1
Strategy Research Unit

A referendum on Scotland's independence from the United Kingdom is due to be held on September 18. Though relatively unreported in Japan, the outcome of the referendum could have a far-reaching impact beyond the UK and could significantly affect the European unification led by the EU.

The United Kingdom, the official name of which is the United Kingdom of Great Britain and Northern Ireland, is a federation of four nations, namely England, Scotland, Wales and Northern Ireland. Though the name suggests that the four nations have equal positions, history shows that England, superior in population, economic power and military might to the others, gradually merged and absorbed its three neighboring nations. However, Scotland has long been working to achieve independence. In 1999, the Scottish Parliament was reconvened after a hundred years of tough negotiations with the UK government. Subsequently, in the parliamentary election of 2011, the Scottish National Party, which seeks separation and independence from the UK, won a single-party majority. In the Scottish Parliament, more members support independence now than those who oppose it. In England, many think that Scotland would benefit economically by remaining part of the large UK market. The recent financial crises in Ireland and Iceland, which revealed the fragility of smaller economies, also highlighted the difficulty of Scottish independence. Even in Scotland, some surveys show that support for independence will remain only at around 30%. The British public generally believes that the unionists will prevail in the September referendum, but are becoming less and less confident as the voting day approaches.

Scotland, if it gains independence, would become a smaller country with around 5 million people but with rich oil resources just like Norway, thanks to the North Sea oil fields. Aberdeen on the North Sea coast is a strong oil industry base with rich infrastructure of oil-related services. Oil explorers have begun to develop deep sea oil fields in the North Sea. Scotland also has great potential for both on-shore and off-shore wind power and wave power generation, which could make the country an exporter of renewable energies. Whether this rosy future comes true, however, would depend on the share of Britain's debts and the share of North Sea oil that the British government would transfer to the independent Scotland. The British government is unlikely to cede ground so easily.

There are also concerns that Scottish independence would affect not only the UK but the whole of Europe. It could lead to Northern Ireland and Wales following suit in becoming independent from the UK, and could also fuel the separatist movements of the Basque Provinces and Catalonia. These changes would serve to pull apart the strongly-bound Europe which the EU has long been working toward. Nonetheless, the most likely scenario is that the separatists will collect a solid vote but not quite win a majority, thus denying Scottish independence. Although this will avoid the breakup of the UK, the British government is likely to be forced to transfer even more authority to Scotland. The outcome of the September 18 referendum must be closely monitored.

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