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Contents

Summary

1. China Watching: Accelerating the Development and Demonstration of CCUS Technology

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In the "Work Plan for Controlling Greenhouse Gas Emissions During the Twelfth 5-year Plan " released in December 2011, the State Council announced that China will develop carbon capture, utilization and storage (CCUS) technology, the intellectual property rights to which are owned by the country, and implement the carbon capture demonstration experiments in the coal-thermal power and coal chemistry, cement manufacturing, and steel industries, and integrated CCUS pilot projects. Accordingly, the Ministry of Science and Technology drew up the "Twelfth 5-year Plan for CCUS Technology Development" in February, and the National Development and Reform Commission released the "Notice concerning the Promotion of the CCUS Demonstration Pilot Activities" in April, emphasizing the country's intention to accelerate the development and demonstration of CCUS technology.

To date, China has been developing CCUS technology and running demonstration projects at Huaneng's Beijing Gaobeidian Thermal Power Plant, Shidongkou Thermal Power Plant of Shanghai, Shenhua's coal liquefaction factory in inner Mongolia, Zhongyuan Oilfield and Jilin Oilfield, with help from developed countries such as Japan and Australia and international organizations such as the Asian Development Bank, and has accumulated much know-how. In 2011, China took a first step toward exporting the technology by signing an agreement with the US to conduct a demonstration experiment at AEP's coal-fired thermal power plant which uses Huaneng's CO_2 capture technology. There are, however, universal issues with CCUS technology such as high cost, high energy intensity, and safety, limiting large-scale commercial utilization.

In response, the "Twelfth 5-year Plan for CCUS Technology Development" aims to achieve breakthroughs in the core technology by 2015, significantly lower the cost and energy intensity, and build a 300,000 to 500,000-tonne integrated experiment base for Post-Combustion Capture CCUS. At the same time, integrated pilot experiments for 60,000-tonne Pre-Combustion Capture and 100,000-tonne Oxygen-enriched Combustion Capture CCUS will also be actively promoted. According to the "Notice concerning the Promotion of the CCUS Demonstration Pilot Activities", the government has decided to promote capture experiments in coal-intensive industries such as coal-thermal power and projects for enhanced oil recovery and storage through the injection of CO_2 in oil fields (CCUS-EOR), and preferentially to subsidize low-cost CCUS pilot projects that hold intellectual property rights. Schemes including tax incentives, loans and support for land use will also be provided, and CCUS's potential for long-term development, problems, risks and impacts will be evaluated to clarify its position and role in the long-term strategy for preventing global warming and the mid- to long-term energy strategy. Further, the Commission will also improve the technology and its safety standards, and actively participate and lead the formulation of international standardization.

China has submitted a voluntary action target to the United Nations to reduce CO_2 emissions per unit of GDP by 40% to 45% from 2005 levels by 2020, and plans to achieve this solely by energy conservation and expanded use of non-fossil fuels. Although the domestic demand for CCUS is still not high, China is committed to developing the technology with the view that if the international framework on climate change beyond 2020 can be agreed, CCUS markets will emerge not only in developed countries but also within China. The target is to develop CCUS into an internationally competitive, strategic and new emerging industry ahead of other countries to acquire both a powerful tool for reducing CO_2 as well as a core industry in sustainable development. Steady progress is awaited.

2. ME Watching: Signs of Change in the Regional Development

Koichiro Tanaka, Managing Director &
Head of JIME Center

Despite the growing consensus that chemical weapons have been used in Syria, once referred to as the "red line" by President Obama, the international community including Europe and the US has not acted. Although there has been some progress in mutual understanding between US and Russia on their responses to the Syrian issue, with the Assad administration and the rebels continuing to refuse to negotiate with each other, the discussions planned to be held in Geneva in June are unlikely to make much progress toward ending the fighting and the killing. As the Assad administration has recently been regaining lost ground with the help of Lebanon's Hezbollah, which has acknowledged its involvement in the battles in Syria, the situation could continue for longer than expected.

Meanwhile, in Iran, which is suspected of dispatching its Revolutionary Guards to Syria like the Hezbollah, attention is currently focused on the presidential election. At the center of the presidential race are conservative candidates such as Mayor Mohammad-Bagher Ghalibaf of Tehran and the chief nuclear negotiator of Iran Saeed Jalili, due to the disqualification of the former president Akbar Hashemi Rafsanjani and the current presidential aide Esfandiar Rahim Mashaei at the preliminary screening of candidates. There is no progress in the P5+1 nuclear talks even though Iran's uranium enrichment capability has advanced, and there are continuing calls for taking tough action against Iran. The US Congress continues to deliberate bills to tighten sanctions, and has stirred tensions by adopting a resolution acknowledging the legitimacy of Israel's "attacking Iran for self-defense".

In Iraq where the provincial elections have finished, there have been an increasing number of terrorist incidents stemming from sectarian differences, posing a threat to public security in the relatively peaceful southern city of Basra, clouding the outlook for the future. This insecurity is rooted not only in the situation in Syria, but also the emergence of an Iraqi "Arab Spring", with Sunni residents demanding more rights.

In Tunisia, conflict between the transitional government led by the Muslim Brotherhood-led Ennahada and the Salafists is intensifying, and the security authorities are leaning toward confronting the Ansar al-Sharia which has ties with Al Qaeda. In Bahrain, which is struggling to deal with the Shi'ite popular movement, lawmakers are urging the government to stop the U.S. ambassador in Bahrain from interfering in domestic affairs and meeting government opponents.

The visit by Prime Minister Abe to the three Middle Eastern countries accompanied by a large economic delegation is intended to secure a stable supply of energy for Japan, as well as to pave the way for exporting commercial nuclear power plants to the Middle East and the Gulf countries. European countries and the US are monitoring the role of Japan in the Middle East, and view the recent moves as part of Japan's Eurasian Strategy to counter the expanding influence of China in that region.

3. Russia Watching: Will the Japan-Russia Summit Meeting Kick-Start the Development of the Russian Far East and Eastern Siberia?

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On April 29, Prime Minister Abe became the first Japanese prime minister in 10 years to make an official visit Russia, for a summit meeting with President Putin. The two leaders announced the "Joint Statement on the Development of Japan-Russia Partnership" which praises the progress in cooperation in many areas specified in the "Japan-Russia Action Plan" signed when former Prime Minister Koizumi visited Russia in January 2003, and advocates promoting peace treaty negotiations based on all the documents adopted so far.

Regarding energy, the two leaders reconfirmed that energy is a core area of economic cooperation between the two countries, and agreed on the importance of expanding cooperation in oil and gas in the Russian Far East and Eastern Siberia under mutually beneficial conditions, including supplying energy at competitive prices considering market conditions.

To fully develop energy in the Russian Far East and Eastern Siberia, it is necessary not only to develop oil and gas fields but also to build much socio-economic infrastructure over a vast geographical area. This will boost economic development of the area, which is at the top of Putin's list.

How prepared is Russia for the development of the Far East and Eastern Siberia? On May 7, in a meeting convened to check the progress of presidential orders attended by members of the Medvedev cabinet and the head of the President's Office, President Putin complained that of the 3.8 trillion rubles (approx. 123 billion USD) of federal funds needed by the Ministry of Finance for investing in the national program for the socio-economic development of Far East Russia, only 296 billion rubles (approx. 9.5 billion USD) had been secured. As the Russian economy appears to be slowing (with GDP growth for 2013 Q1 of -0.1% quarter-on-quarter), it is clearly necessary to attract private funds, including foreign investment (expected to cover approx. 70% of the overall investment from the start).

The key point of the summit meeting was that it highlighted the cooperation concerning the Russian Far East and Eastern Siberia. The summit also emphasized the importance of mutually beneficial projects related to energy, agriculture, infrastructure and transportation, and the leaders also agreed to establish a consultative body on acceleration of public-private partnership between the countries for further cooperation. Prime Minister Abe's visit to Russia was accompanied by a economic delegation of around 120 people, the largest in the history of bilateral relations. Russia needs to improve its investment environment so as not to miss the growing momentum.

4. EU Watching: European Natural Gas-Fired Thermal Power Facing Difficulties

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Strategic Research Unit

Due to the Shale Gas Revolution, the Henry Hub price of American natural gas remains low at 3–4 USD/MMBtu. Natural gas has become cheaper than coal in the US and so coal power plants are being shut down and natural gas power plants are being used instead. As a result, vast quantities of excess coal have poured into European markets from North America since 2011, and coal prices in Europe have remained around 70 euro/tonne, down 25% from the beginning of 2011. Thus, contrary to the US, Europe is boosting the use of coal, which is cheaper than natural gas, and the operation of coal-fired thermal power plants. There are even plans to build new coal power plants in Germany.

In addition, the continuing slump in the price of emissions allowances under the European Union Emissions Trading System (EU-ETS) due to the European economic crisis and debt issues is causing electricity producers to choose coal as a power source, since it is more economic even when the cost of purchasing emissions allowances is factored in.

As the demand for electricity drops due to the economic slowdown in Europe, full-scale operation of coal power stations and rapid expansion of government-subsidized offshore wind power, the utilization factor of natural gas power plants is plunging. It takes at least 3000 hours of operation each year to recoup the investment in a natural gas plant, yet some plants are operating only for a few hundred hours, and many are on the verge of decommissioning or long-term shutdown.

Despite the growing importance of natural gas power as an adjustment power source to keep the electric system stable, if the situation continues, electricity producers will no longer be able to keep their power plants running, which could hamper the expansion of renewable energies in the future.

To solve this problem, it has been proposed to build a capacity market in Europe which directly finances the electricity producers that have thermal power plant capacity. This allows the cost of maintaining adjustment power sources to be paid directly through the market, giving electricity producers an incentive to retain these power sources. It is also expected to support the expansion of renewable energies including wind power, whose electricity output cannot be controlled, by securing a flexible power source.

As for the new funds needed to implement this system, it is difficult to charge consumers by simply raising the retail electricity price, as the rising FIT tariff is pushing the consumer burden close to the limit. Energy policymakers including the European Commission must handle the difficult task of implementing the policy while maintaining the stability of the electricity grid, expanding the use of renewable energies and reducing the burden on consumers.

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IEEJ Calendar of Events

Energy Indicators of Japan

IEEJ Homepage Top

Back Numbers of *IEEJ e-Newsletter*