

# ***IEEJ e-NEWSLETTER***

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## Summary

### 1. Developments in the Reforms of the Electric Power and Gas Systems

Detailed discussions were held on ensuring neutrality and transparency of the gas pipeline department in the reforms of the gas systems and heading toward finalizing the reforms of the electricity systems. The discussions on reforms of the gas and electricity systems are progressing very differently, raising concerns.

### 2. Developments in Nuclear Power

The Nuclear Regulation Authority concluded that the on-site fracture zones of JAPC's Tsuruga NPP are an active fault. Although the hosting community has given its approval, Sendai Units 1 and 2 still face great challenges for completing the reviews and restarting.

### 3. Oil Prices, the OPEC Meeting, and the LNG Producer-Consumer Conference

The much-awaited OPEC Meeting decided not to cut production, generating further downward pressure on oil prices. The third LNG Producer-Consumer Conference was held, and the consensus about weakening LNG market is emerging.

### 4. Discussions on Accelerating the Formulation of the Intended Nationally Determined Contributions (INDC) for COP21

The joint working group of METI and MOE is continuing discussions on formulating the INDC for COP21, while considering issues such as the energy mix.

### 5. U.S.-China Joint Announcement on Climate Change

On November 12, the US and China released a third joint statement on climate change that contains extensive agreement including the long-term climate change targets of both countries. The impact of the joint announcement on the upcoming international negotiations on climate change must be closely monitored.

## 1. Developments in the Reforms of the Electric Power and Gas Systems

**Junichi Ogasawara**, Senior Economics, Manager  
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The Gas Systems Reform Subcommittee meetings held on October 30 and November 13 discussed issues related to ensuring neutrality of the gas pipeline department. Various views, including proposals from operators, were presented regarding the challenges experienced in ensuring neutrality and transparency of the gas pipeline department in the partial deregulation implemented so far.

So far, attention has focused on the pros and cons of the legal unbundling of the gas pipeline department. However, the implications of legal unbundling differ between the electric power industry's transmission department, which has strong responsibility and authority for maintaining the supply-demand balance, and the gas industry's gas pipeline department, which is now restructuring the LNG terminals together with the liberalized department. The outcome of the discussions may differ considerably depending on whether the deregulation should take into account such differences, or if a common regulatory framework should be applied to both industries in view of competition between energies. While legal unbundling tends toward the latter idea, would measures based on policy necessity while disregarding the differences between the electricity and gas business be acceptable to gas operators? This will affect the discussions ahead.

In short, the reforms of the gas systems are lagging far behind those of the electric power systems. In reaching a conclusion, the discussions must consider the impact of this difference in timing of implementing the reforms.

Meanwhile, regarding the reforms of the electric power system, the System Design WG was held on October 30, and various topics toward the final conclusion were discussed: (1) Supply plan following the commencement of the first phase of the reforms, (2) rules of the Organization for Nationwide Coordination of Transmission Operators, (3) detailed system design associated with full retail liberalization, (4) detailed design of the energy imbalance system, (5) utilizing negawatt trading, (6) stimulating the electricity wholesale market (monitoring the results), (7) review of the constant backup system, and partial supply, (8) study of legal unbundling, and (9) handling of the General Security Provisions.

All these topics contain important factors for full retail deregulation and the associated category-based licensing system, due to be implemented in the second phase of the reforms. The purpose of the discussions is to switch from the current partially deregulated system in which general electric utilities are primarily responsible for ensuring supply stability, to one in which supply stability is shouldered broadly by all electricity producers, while enabling consumers to participate through systems such as negawatt trading.

In 2013, the Cabinet approved "the transition, in two years time, to a new independent organization with high expertise, by reviewing the current administrative organization responsible for electric business regulations"; while we continue to wait for a firm direction to be set, and while the details and timing of the gas systems reform remain uncertain, the reform of the electric power systems alone will soon be finalized.

## 2. Developments in Nuclear Power

**Tomoko Murakami**, Manager  
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At the fifth review meeting of the Nuclear Regulation Authority (NRA) on the on-site fracture zones of the Tsuruga Nuclear Power Plant held on November 19, the NRA concluded that the fracture zones are an active fault. Regardless of this result, the Japan Atomic Power Company (JAPC) plans to prove that Tsuruga Unit 2 complies with the new safety requirements, as the compliance reviews of its Tokai Daini Nuclear Power Plant continue. However, the prolonged stoppage of all three of its operating plants is a serious situation that could threaten the very existence of the company.

How did the NRA reach this conclusion? At the first review meeting held on December 10, 2012, experts and the then Deputy Chairman Shimazaki commented that "[the on-site fracture zones] are an active fault". Then, despite the presentation of newly-discovered facts and analysis results disproving the activity of the fracture zones, the NRA firmly asserted that none of the evidence was sufficient to reverse the initial decision. For a power company, not being able to restart its own plants is a management crisis. JAPC has announced its intention to continue to persuade the NRA with sincerity, but the situation is disastrous. Tsuruga's fracture zone issue is an important indicator of the future relationship between the regulators and the power companies regarding nuclear power.

The Nuclear Energy Subcommittee meeting held on November 13 discussed the measures for securing, over the long term, the skills and personnel required for ensuring safety and smooth decommissioning. Many members urged that the government's role be clarified, including JAEA Chairman Matsuura who stated that "The important point in developing human resources is to build an environment where young people can do the work they want. I ask the government to help develop the technologies for contaminated water processing and plant decommissioning, as well as the next-generation reactors". Meanwhile, Professor Yamaguchi of Osaka University said that "Having an independent regulatory body itself does not ensure safety. The relationship between the regulator and the power companies, and maintaining an appropriate level of nuclear power, are also important." The discussions on this topic will continue in the WG on Voluntary Efforts & Continuous Improvement of Nuclear Safety to reach a conclusion after the start of the new fiscal year. The specific measures that will be formulated are keenly awaited.

Regarding Sendai Units 1 and 2 which the NRA agreed comply with the new safety requirements, despite Kagoshima Prefecture's approval on November 12 to restart the plants, the NRA's reviews of the construction plans and the revised operational safety programs are still ongoing. Fifty power company hearings were held between September 17 and November 17, which is almost every day. Considering that it normally takes five to six years to review all the construction licensing documents for a new plant, it is uncertain when all the reviews will be completed for restarting the existing plants. While the approval by the local community was a step forward, the efforts for restarting are facing a high hurdle in the final review.

### 3. Oil Prices, the OPEC Meeting, and the LNG Producer-Consumer Conference

**Tetsuo Morikawa**, Manager Gas Group,  
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As oil prices continue to slide, the OPEC Meeting in Vienna on November 27 attracted attention after a long interval. However, it was decided not to shore up oil prices by reducing production, but to maintain the current production level of 30 million B/D. In fact, for many market players, this decision was expected, as Saudi Arabia, the leader of OPEC, was reluctant to cut production, maintaining that "the market will naturally balance itself out". This implies that if prices remain low, high-cost oils such as US shale oil will eventually cease to grow and will start to fall. Saudi Arabia does not need to make a sacrifice to reverse the falling prices. This decision, however, has set the course for prices to remain low for the time being. On the same day, the Brent price plunged to 71 dollars, and downward pressure continues. The plunge in oil prices also puts downward pressure on Asian LNG prices, which are linked with oil prices.

On November 6, the third LNG Producer-Consumer Conference was held in Tokyo, attended by five ministers including METI Minister Miyazawa, and more than 1,000 people from more than 50 countries and regions. The key points were as follows. First, albeit different extent, all players agree that the LNG supply-demand balance in Asia is easing. METI Minister Yoichi Miyazawa pointed out that the LNG price for Japan could decrease by 20–30% with the addition of new LNG supply sources such as the US, while Australia's Industry Minister Ian Macfarlane also indicated that the supply-demand balance will most likely ease as Australia ramps up its LNG production. Some LNG sellers also acknowledged that market is softening, but emphasized that long-term contracts will remain essential for new projects to be realized.

Second, the LNG projects on the west coast of the US, including Alaska, promoted their advantages. Oregon LNG and Jordan Cove LNG emphasized that they can give buyers access to cost-based LNG by specializing in the liquefaction tolling business model. The projects are more advantageous than those in the Gulf of Mexico as they have relatively short transportation distances, are not subject to the Panama risk, and can use existing gas fields and pipelines. Regarding Alaska, an MoU was signed between JOGMEC and the US National Energy Technology Laboratory for a Japan-US joint study on the development of methane hydrate.

Third, the market players are aware of the need for an Asian price index to replace oil-indexation as a new LNG pricing mechanism, but are still looking for ways to achieve this. IEEJ Chairman and CEO Masakazu Toyoda drew upon the results of studies by research institutes of multiple LNG producer and consumer countries, and reported that the LNG market should develop soundly by introducing a new pricing mechanism that reflects the demand and supply situation for natural gas, and by easing or abolishing the destination clause. Coincidentally, on the day of the Conference, Chubu Electric and GDF SUEZ signed a Heads of Agreement for the sale of LNG, and the price for that contract links spot LNG price in Asia. This is an important step forward for creating the new price index of Asia.

## 4. Discussions on Accelerating the Formulation of the Intended Nationally Determined Contributions (INDC) for COP21

**Hiroki Kudo**, Senior Research Fellow  
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The Ministry of Economy, Trade and Industry and the Ministry of the Environment each established a new working group (WG) to develop specific proposals for the Intended Nationally Determined Contributions (INDC) beyond 2020, and jointly held a first meeting on October 24. Currently, Japan is required to urgently formulate the INDC for COP21 next year, in addition to determining a new energy mix reflecting the ongoing transformation of the energy situation and the energy market. The WGs were established to accelerate the development of the INDC from a more technical perspective, taking into account the continuing discussions on the energy mix.

In formulating the INDC, the WG meeting pointed out the need for multiple viewpoints in the discussions, including (1) feasibility of the targets, (2) international assessment, (3) public cost burden, and (4) contribution to the international community through technical support. The meeting also mentioned the importance of a flexible timing for presenting the draft, and of utilizing the latest scientific knowledge including the Fifth Assessment Report (AR5) of IPCC reports and assumptions such as the energy mix for creating realistic targets. In response, IEEJ Chairman and CEO Masakazu Toyoda expressed the need to clarify each country's position in order to create a common framework for all member countries, expectations for developing inspiring technologies as well as existing ones, and that priority should be placed on finalizing the nuclear and renewable energy policies.

The second joint WG meeting (November 12) discussed the AR5, measures for reducing non-energy-derived GHG, and the low carbon society action plan. The Synthesis Report of AR5 (released on October 31) reconfirmed that there is no doubt that the global climate system is warming, evidently due to human activities, and that it could have devastating, broad and irreversible impacts on human beings and the ecological system. The report also states that there are several mitigation paths that could possibly keep the rise in temperature from the time before industrialization to less than 2°C, but the bottom line is that GHG emissions need to be cut considerably in the coming decades, and emissions must be reduced to almost zero by the end of the 21st century. On November 12, the US and China agreed on targets beyond 2020, and as the major countries including the EU announce their targets, the consistency between the IPCC's analysis results and the target of each country, as well as the desirable target level, are expected to be put on the table for discussion.

IEEJ Chairman and CEO Toyoda commented that the multiple mitigation paths mentioned in the report should be considered, and based on an IEEJ analysis that 450 ppm is not achievable, Japan needs to set a practical target and lead the international negotiation as a "realist". He also re-emphasized the need to develop innovative technologies including CO<sub>2</sub> capture and utilization (CCU) technology based on artificial photosynthesis, and a space solar power system.

## 5. U.S.-China Joint Announcement on Climate Change

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On November 12, President Xi Jinping and US President Obama visiting China announced the U.S.-China Joint Announcement on Climate Change (hereafter "the Joint Announcement"). This is the third joint statement following the first on April 13, 2013, and the second on February 15 this year. While the first one confirmed the importance of US-China collaboration in preventing global warming and created the necessary organizations, and the second one set the actual areas of collaboration, the third one sums up the past efforts in a landmark joint statement on an extensive agreement including climate change targets beyond 2020.

First, the joint statement positioned global warming as "one of the greatest threats facing humanity." Second, the parties recognized that global warming countermeasures "are part of the longer range effort to transition to low-carbon economies," and further, that "tackling climate change will also strengthen national and international security." Third, the Joint Statement became the first official statement between the two countries to clearly mention "reflecting the principle of common but differentiated responsibilities and respective capabilities, in light of different national circumstances." Fourth, as some countries remain skeptical about the "global temperature goal of 2°C," the US and China have set goals "mindful of" the 2°C goal. Finally, both countries announced their long-term goals beyond 2020. The US intends to reduce its GHG emissions by 26%–28% below its 2005 levels in 2025 and to make best efforts to reduce its emissions by 28%. China intends to achieve the peaking of CO<sub>2</sub> emissions around 2030 and to make best efforts to peak early, and to increase the share of non-fossil fuels in primary energy consumption to around 20% by 2030 (9.8% as of 2013). Both countries also indicated that they intend to continue to work to increase ambition over time.

The collaboration between the US and China, which together account for more than 40% of global CO<sub>2</sub> emissions, in tackling global warming is great news. The targets announced by the two countries should boost efforts to agreeing on the long-term climate change framework in COP21 to be held in Paris at the end of next year. Meanwhile, the viability of the bilateral agreement must be monitored carefully. As a hint on whether the numerical targets will become international commitments, on November 16, immediately after releasing the Joint Statement, President Xi announced the long-term goals again at the G20 Summit in Brisbane, Australia. Xie Zhenhua, Vice Minister of the National Development and Reform Commission (NDRC) and responsible for the framework negotiations, confirmed that "the draft long-term targets will acquire legal force following deliberation and ratification by the National People's Congress (NPC)." on November 14. Considering that the long-term targets are based on a national research project running since 2012 and given China's political system, there is little doubt that they will be approved by the NPC. In contrast, it is not certain whether President Obama's draft long-term targets will be ratified by Congress, as the US has a record of agreeing in COP3 in 1997 but later leaving the Kyoto Protocol due to the failure to obtain ratification by Congress.

If the US fails to ratify President Obama's draft long-term targets, how will China react? China is likely to work toward its long-term targets regardless of others. This is because, as President Xi has announced both domestically and internationally, "tackling climate change is the intrinsic requirement of China's sustainable development as well as the international obligation of a responsible major country. This is not at the request of others but on our own initiative." Going forward, we must closely monitor the difficulty of achieving these targets, and the actual measures introduced.

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