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Contents

I. New Year Message 2013 from IEEJ Chairman & CEO Masakazu Toyoda: A Year to Chart a Course for Solving the Issues

2012 was a year filled with uncertainty. In politics, it was election or power rotation year in major countries, such as the U.S., China, France, Russia, South Korea and Japan. As a result, these countries inclined to be inward-looking and short-term oriented, and could not focus on the mid- to long-term or at the global level. In geopolitics, the Arab Spring and Iran's alleged nuclear development program destabilized the Middle East and caused oil prices to remain high. In Asia, territorial disputes between Japan, China and South Korea, particularly between Japan and China, threatened not only politics but also the economy. Regarding the economy, the turmoil caused by the Euro crisis, the growing budget deficit of the U.S. and the slowing growth of emerging countries such as China and India suppressed the global economy. In addition to these factors, the Japanese economy was adversely affected by tensions with China. Under such circumstances, the Fundamental Issues Subcommittee of the Advisory Committee for Natural Resources and Energy still has not reached a conclusion on the revision of the appropriate energy mix despite meeting about thirty times last year for discussions. In COP18 which met to discuss the framework for tackling climate change, the basic arrangements for discussing the new framework from 2020 onwards were completed, although the overall state of confrontation between advanced and developing countries remains unchanged.

What will 2013 be like? Hopefully, at least in Japan, it will be a year to actively "chart a course for solving the issues" under the new administration. Below are the key points concerning energy and the environment.

The first point is **restoring trust in nuclear power**. It is important to steadily restart those nuclear power stations that are shown to be safe by the Nuclear Regulation Authority, which was established with an independent regulatory commission last September. Furthermore, Japan Nuclear Safety Institute (JANSI), which was established by the electric utilities, needs to take a proactive approach toward raising the safety level of nuclear power stations like the U.S. Institute of Nuclear Power Operations (INPO). According to our calculation, restarting twenty-six of the nuclear power stations (such as those that have submitted the results of stress tests) in 2014 would lower the electricity fuel cost by 1.8 trillion yen, and hence the electricity generation cost by approximately 2 yen/kWh.

Second is **solving the Asia premium issue of LNG**. The price of imported natural gas is currently about 3 USD/MMBtu in the U.S. and 16-18 USD/MMBtu in Japan, making natural gas for existing Japanese projects three to four times more expensive than in the U.S. even when taking into considerations the cost of liquefaction and transportation of about 6 dollars. As the LNG market expands, the supply and demand balance of LNG is no longer in line with that of crude oil. It is increasingly important to revise promptly the oil-indexed pricing system of LNG, while LNG importers promoting joint procurement and development.

Third is **wisely promoting renewable energies**. The Feed-in Tariff (FIT) system launched last July has made a good start mainly for solar power. On the other hand, in Germany and Spain, the governments are quickly suspending or revising their systems in order to control the rise in electricity tariffs caused by the growth in installed capacity of renewable energies and accumulated purchasing cost. As a late adopter of the FIT system, Japan should carefully monitor the successes and failures of the early adopters as Germany, and make rational decisions in running and revising the system.

Fourth is to **advance energy conservation measures**. The 3/11 nuclear accident provided an opportunity to strengthen Japan's energy conservation policy, particularly in the household and business sectors. It is important to encourage the use of HEMS and BEMS. Energy conservation for buildings still has much room for improvement compared to Europe and the U.S. It is also essential to enact the once-discarded amendment of the Act on the Rational Use of Energy as soon as possible.

Fifth is to **strengthen the competing power of the energy industry**. We are still halfway through the electric power system reforms. While it is important to build a market-based system that benefits consumers, it must be designed to prevent insufficient investment which has occurred in the past due to system reforms in Europe and the U.S. Furthermore, we must not forget to look overseas as well as within Japan in strengthening our competing power. The energy industry, including the gas and oil businesses, should develop into a comprehensive energy industry that can compete in the international market and not confine itself to the shrinking domestic market.

Sixth is to **take the initiative in tackling climate change**. COP18 raised questions about the validity of the U.N. negotiation process as the countries participating in the Second Commitment Period account for only about 14% of total emissions, and the demand for CDM may shrink as they will not be used by the countries not participating in the Second Commitment Period, such as Japan. Japan must collaborate with the U.S. and others in taking the initiative and developing a realistic post-2020 framework in which the key countries can participate, including the U.S. and China, and which is based on emission intensity (CO_2/GDP) so that it does not hamper economic growth. Japan must also revise its own 2020 goal into a realistic one.

Seventh is to **promote collaboration between Japan, China and South Korea and between Japan and Russia**. While these ties tend to be hampered by the territorial issues, collaboration between these four countries of North East Asia is urgent in light of energy security, nuclear security, abolishing the Asia premium of LNG, and promoting energy conservation. We must use diplomatic wisdom to promote cooperation on energy despite the territorial issues.

The final point is **revising the mix of energy sources**. Apparently, the new administration is planning to approach this issue carefully. It should take time for the new scheme for nuclear safety to restore public trust as it has just been launched, and carefully determine the potential and limits of renewable energies. Hasty decisions could misguide the future course of the country. Meanwhile, the absence of guidelines on energy investment may hamper appropriate and adequate funding. It is necessary to determine an appropriate time frame for consideration.

II. Feature: Key Points for 2013

Summary

II - 1. International Oil Situation

The growth in non-OPEC supply due to increased production in the U.S. and the limited growth in oil demand due to the world economic slowdown will ease the supply and demand balance of oil in 2013; the average price of Brent Crude is estimated at 105 USD, plus or minus 10 dollars. However, the price could fall due to the European credit risks, or rise due to geopolitical risks such as the situation in Iran.

II - 2. Domestic Oil Situation

The oil industry is facing a major turning point with the diversification of energy sources and greater awareness of energy saving, and must urgently establish a two-fold system of petroleum products business for “defense” and overseas business development for “offense”.

II - 3. Electricity Business

The near-term key issues in 2013 will be applications to raise electricity tariffs, the formulation of a new safety standard by the Nuclear Regulation Authority, the restarting of nuclear power plants, and the handling of fundamental policies toward electric power system reforms. The government will have to maneuver skillfully to convince the public while maintaining the sustainability of the electric utility businesses.

II - 4. Natural Gas

The key points for the international natural gas market in 2013 are the progress of export licensing of the US LNG projects, the progress of new LNG projects in Oceania, and the degree of economic slowdown in Europe. Measures to ease the supply and demand balance and discussions on the pricing system are essential in order to abolish the Asia premium.

II - 5. Nuclear Power

The Nuclear Regulation Authority is expected to screen the nuclear power plants for restarting based on the new safety standard they will establish by July 2013, but the prospects remain uncertain. Meanwhile, new nuclear power stations are continuing to be constructed particularly in Asia, and the direction of the nuclear policies of China and South Korea requires close attention.

II - 6. Asian Coal Market

In 2012, the coal market remained sluggish due to the loosening of supply and demand balance from the latter half of 2011. This loose balance is caused partly by the U.S. shale gas revolution (replacement of coal by gas and the consequent expansion of coal exports). The trend of the coal market in 2013 will depend largely on the recovery of the global economy.

II - 7. Renewable Energies

The introduction of solar power has increased rapidly since the launch of the Feed-in Tariff (FIT) system. Meanwhile, the new administration has not yet revealed its energy policy. With the FIT system, which clearly has those who benefit and those who pay, it is essential to set a clear capacity target for renewable energies. The establishment of the energy mix and a renewable energies capacity target by the new administration is keenly awaited.

II - 8. Energy Conservation

With the increased importance of energy conservation, ambitious goals have been set by the Innovative Strategy for Energy and the Environment, and specific policies and systems are now being built for implementing the goals. The once-discarded Bill to Partially Amend the Act on the Rational Use of Energy continues to be important. Outside Japan, countries are strengthening energy conservation by taking appropriate measures for their respective situations.

II - 9. Activities related to Global Warming in 2013

The course of emissions negotiations remains uncertain due to the differences in views between developed and developing countries, as the international community shifts its focus toward building the post-2020 framework against global warming. The new administration of Japan faces the difficult task of setting a global warming strategy, including a GHG emission target for 2020, despite the need to focus on the economy and energy policies.

II - 10. Energy and Environmental Issues of APEC

The Asia Pacific Energy Research Center (APERC) will complete the APEC Energy Demand and Supply Outlook (fifth edition), promote political cooperation for improving the efficiency of energy utilization and the supply of low-carbon energies, and also start investigations for dealing with emergency situations concerning oil and gas to strengthen the energy security of the APEC countries.

II - 11. Middle East

It is proving difficult to contain the instability that caused the Arab Spring, and monarchies will face challenges to their authority in 2013. With the confrontation between Islamism and secularism, greater unification of the Kurdish people and tensions related to Iran and the Persian Gulf, the path to stability in the Middle East and North Africa remains elusive.

II - 12. China

The Xi-Li leadership will start. Whether they can maintain stable growth of over 7% and how far they can improve “the quality and efficiency of growth” requires close attention. Measures for achieving a low carbon society, such as energy conservation and expanded use of non-fossil energies, will be promoted. We expect that the new administrations of Japan and China will restore good bilateral relations.

II - 13. Russia

Struggling with economic development of the Far Eastern and East Siberian regions in Russia, and viewing China as a potential threat to its eastern policy, Russia is strengthening its efforts to attract Japan and improve bilateral economic ties. Tokyo must strengthen its strategy in the area in a well-balanced manner based on the importance of both China and Russia for Japan.

II - 1. International Oil Situation

Yoshikazu Kobayashi, Manager
Oil Group, Oil and Gas Unit

Geopolitical risks such as Iranian nuclear issue propping up the easing supply and demand balance of oil in a slowing global economy … this was the basic picture of the international oil market in 2012. This picture is likely to continue in 2013, with the supply and demand balance loosening somewhat further.

Regarding the supply and demand fundamentals, on the demand side, the growth in global oil demand is expected to remain at the same level as in 2012 at 700,000 to 800,000 B/D due to the lingering credit risk of Europe and concerns over an economic slowdown in emerging countries. On the supply side, non-OPEC supplies are expected to grow by approximately 800,000 B/D, which roughly equals the growth in demand, due to a record-high crude oil production in the U.S. with the increase in its tight oil production and to the increase in natural gas liquid (NGL) production on the back of recent progress in shale gas development. This means that OPEC oil production needed to fill the gap in the supply and demand balance will remain unchanged from 2012 at 30 million B/D. If OPEC maintains its current production level as it decided to keep the current quota at its General Meeting on December 12, the current trend of easing supply and demand balance is likely to continue in the short term. However, the Gulf producers such as Saudi Arabia and UAE have recently started to produce slightly less than their peak production levels last summer. If the supply and demand balance continues to loosen, there is a possibility that the OPEC countries may consider pulling back from full-scale production in the future.

Regarding geopolitical risks, one of the key points is the international tension surrounding Iran and its alleged nuclear weapons development. While the risk of transportation through the Strait of Hormuz is factored into the current oil price, the price would definitely surge if Israel launches a military strike. Furthermore, political uncertainties the situation in Syria and the domestic politics of Egypt could become additional destabilizing factors in this area, and could add the geopolitical premium for the oil market.

Regarding the financial situation, the key point at present is whether the U.S. will manage to deal with the fiscal cliff without seriously hurting its economy. This issue may significantly affect the oil markets in early 2013. Other key points include the impact of the third round of quantitative easing, or QE3, which was launched in September 2012. Though there has been no notable impact on oil prices so far, the last two rounds of quantitative easing caused oil prices to rise by almost 20%. We must closely monitor how quantitative easing, with no definite end date, affects the investment behavior of speculators as well as real demand as an economic stimulus. Furthermore, the financial risk centered on Europe will continue to dampen oil prices.

Based on the above, I estimate the year-average price of Brent Crude under a typical international oil situation scenario in 2013 at 105 USD, plus or minus 10 dollars.

II - 2. Domestic Oil Situation

Tadashi Maekawa, Research Director
The Oil Information Center

The Great East Japan Earthquake highlighted the importance and convenience of petroleum. The Japanese oil industry is now facing a major turning point with greater awareness of the diversification of energy sources and energy saving.

In June last year, the Agency for Natural Resources and Energy presented to the Advisory Committee for Natural Resources and Energy a remarkable forecast that the demand for petroleum products for 2013 would fall 31.4% from 2010 levels to 133 million kl. In particular, the Agency predicts that the demand for gasoline will plummet dramatically by 60% to 21 million kl due to improved gasoline mileage, declining car ownership among the younger generation, declining birthrate and aging population, an increase in "kei" mini-vehicles and the spread of next-generation automobiles such as hybrid vehicles (HV). This forecast shocked the oil industry. Other than the demand for some oil products such as Bunker C for electricity generation and gasoil that have increased since 3/11 due to reconstruction needs, the overall trend of a long-term decline of domestic demand remains unchanged.

Based on the Acton Sophisticated Methods of Energy Supply Structures, each group of companies in the oil industry is required to scrap a refining capacity of 1 million barrels/day or more by the end of March 2014. There are hopes that this dismantlement will improve the utilization rate of the refineries.

According to the weekly service station price published by the Agency for Natural Resources and Energy, the price of gasoline, heating oil and gasoil all peaked in early April, and then fell for three consecutive months, with both gasoline and light oil prices dropping nearly 20 yen from their peak in early to mid July. Though prices later recovered, the price of gasoline is still below 150 yen. On the other hand, the price of heating oil is rising while the prices of other oils are declining, due to soaring demand caused by the severe cold spell at the end of last year.

While the petroleum products business will continue to form the core of the Japanese oil industry, it is difficult to develop a mid-term growth strategy for the petroleum products business alone. The oil industry needs to properly adjust the domestic supply and demand through oil by scrapping excess capacity, and thereby respond to the expanding Asian market, improve business profitability, and achieve a stable supply of petroleum products. It also needs to develop new business models for diversifying the domestic business and to actively expand overseas to leverage the growth of other Asian countries; however, establishing a source of profit that can compensate for the drop in the core petroleum products business will require considerable time and money. Going forward, it must urgently build a two-fold system consisting of the petroleum products business for "defense" and overseas business development (such as expanding product exports, investing in overseas refineries, and upstream oil exploration business) for "offense".

II - 3. Electricity Business

Junichi Ogasawara, Senior Economist, Manager
Electric Power Group, Electric Power & Coal Unit

Nuclear power output remained low during 2012. Only Ohi Units 3 and 4 of the Kansai Electric Power Company were restarted, again raising concerns over the tightening of supply and demand in summer and winter. Under such circumstances, during the summer, electricity conservation efforts were strengthened and were applied to more areas including the whole of Western Japan. The management environment of the electric utilities grew tighter and more unstable and uncertain in both the short-term and the mid/long-term due to events such as the growing fuel costs for compensating the loss in nuclear power output by thermal power which worsened the finances of the electric utilities, implementation of the comprehensive special business plan at the Tokyo Electric Power Company and rise in electricity tariffs by the company (later followed by applications to raise tariffs by Kansai Electric and Kyushu Electric), and the discussions on reforming the electric power system by the Expert Committee on Electric Power System Reforms.

In the short term, the key issues for 2013 will be applications to raise electricity tariffs due to the worsening finances of the electric utilities, the formulation of a new safety standard by the Nuclear Regulation Authority, the restarting of nuclear power plants, and the handling of fundamental policies toward electric power system reforms drawn up by the former administration. The applications for raising electricity tariffs, which are likely to spread to other electric utilities, could directly affect people's lives together with the restarting of nuclear power stations, which might lead to electricity shortages in the summer and an impact on economic activities. The new administration must quickly establish a policy that can both convince the public while maintaining the sustainability of the electric utility businesses.

Regarding electricity conservation, industry has responded to all four government requests to conserve electricity since the Great East Japan Earthquake, each time cutting production. These power-saving measures, if they continue, could cause weariness from saving electricity or weakening of the sense of risk. To prevent this, a schedule for easing the electricity supply and demand balance must be drawn up. Also, despite the rise in electricity tariffs even in the regulated service categories since September 2012, Tokyo Electric still does not have a concrete plan for reconstructing itself, due in part to the uncertainty over restarting nuclear power plants. Though Tokyo Electric is now allowed to reflect the change in fuel costs into its electricity tariffs if there is any deviation from the planned combination of power sources, it will not be easy for the company to win public understanding even if the new tariffs are implemented.

The former administration attempted to deal with these issues by promoting the introduction of renewable energies, reducing the purchase price of LNG, encouraging the participation of consumers in the electricity market to spur electricity saving, and reforming the electric power system to enable all these measures. However, these measures require a mid- to long-term time range to become fully effective, and hence the issues remain unsolved. The new administration is faced with the difficult task of finding a solution that can convince the public and is also feasible in practice. The government will continue to face difficult decisions including whether or not to continue with the current council-style discussions or to adopt a different framework, and who to appoint to discuss the issues.

II - 4. Natural Gas

Tetsuo Morikawa, Manager
Gas Group, Oil and Gas Unit

The key points for the international natural gas market in 2013 are the progress of approval for U.S. LNG export and the progress of new LNG projects in Oceania on the supply side, and the drop in gas demand in Europe on the demand side.

The report on the macroeconomic impacts of LNG exports released by NERA for the U.S. DoE last December concluded that although some income classes and industrial sectors will have to pay higher gas prices, LNG exports will in general bring net benefit to the US economy. There are currently fifteen U.S. LNG export projects whose export licensing process is pending, equivalent to a combined liquefaction capacity of 170 million tonnes per year. The report will be open for public comments until February 25, and the actual decision to permit export will be made individually for each project thereafter. As hopes rise for the U.S. LNG projects as a new supply source of LNG for the Asian market, the progress of the export permission is keenly awaited.

Also important is the progress of the Oceanian LNG projects which will be started up earlier than the American ones. As the delay of LNG projects and the risk of rising costs become a reality, as much as 70 million tonnes of new supply capacity is due to come on stream in Australia and Papua New Guinea between 2014 and 2017. A significant portion of the production will be supplied to Japan, the smooth launch of these projects will be essential for Asian LNG market.

On the demand side, it is critical how much demand reduction will be in Europe. The demand is again likely to have fallen in 2012 below the 2011 level. LNG imports are declining in Europe's two major importers, U.K. and Spain, and more than 40 cargoes of LNG were presumably re-exported mainly to Asia and South America. The supply and demand situation of natural gas in Europe and the trend of LNG re-export from the area require close attention as they will also affect the ongoing discussions on the pricing of LNG for Asia.

2012 was a year when the Asian importing countries began to demand abolition of the Asia premium on LNG, and this movement is likely to continue and even accelerate in 2013. With the oil-indexed pricing system of LNG becoming increasingly irrational, discussions on reviewing the pricing system are essential. At the same time, as the easing of the supply and demand balance is a prerequisite for reducing the price, it is important to achieve progress in natural gas export projects as LNG and via pipelines, and also to take measures to reduce demand such as improving the efficiency of LNG thermal power plants.

II - 5. Nuclear Power

Tomoko Murakami, Manager
Nuclear Energy Group, Strategic Research Unit

The prospects for restarting the nuclear power stations in Japan are likely to remain unclear in 2013.

The Nuclear Regulation Authority (NRA), which was established in September 2012, has announced that it will decide the outline of the new safety standards by January 2013, and following necessary adjustments, will draw up the draft new standards, the revised nuclear disaster preparedness guidelines, and the Regional Plan for Disaster Prevention by March 2013, and will finalize the new safety standards by July 2013. The NRA will also continue with the on-site fault investigations which are ongoing at five nuclear power stations including Tsuruga and Higashidori as of the end of December 2012, but has not indicated when the investigations will end.

The NRA states that it will start to review the power plants for restarting based on the new safety standards in July 2013. However, established independently from both the government and the electric utilities to "judge compliance with the safety standards solely on scientific evidence", the NRA has no reason to want to restart the plants quickly. Thus, it is uncertain whether or not the plants will be restarted by the coming summer, or even within this year. The outflow of national wealth and the rise in electricity tariffs due to the prolonged shutdown of nuclear power stations is a critical issue for the government which is responsible for the people and the economy of the country. The government and the NRA must make progress with the discussions and promptly implement policies on restarting. This issue should be one of the key policies under the new administration.

Meanwhile, outside Japan, several countries, including those in Asia where the economy is still expanding, are continuing to actively develop nuclear power. China, where the freeze on new construction licenses was lifted in November 2012, has resumed the construction of new plants and plans to expand its installed nuclear capacity to 42 GW in 2015. While its ambitious pre-Fukushima goal of "80 GW by 2020" has become unattainable, China is likely to become the second largest user of nuclear power rivaling France.

Despite experiencing a series of unplanned outages and troubles in 2012, the South Korean nuclear industry plans to start constructing new plants in 2013 and beyond, including the Shingori Nuclear Power Station Unit 3. Park Geun-hye, the new South Korean President elected in December 2012 and a member of the ruling Saenuri party, advocated "revising the country's nuclear-dependant energy strategy in the future" during the Presidential election. However, judging from the country's low energy self-sufficiency rate and energy source structure, and the world-renowned safety and economic efficiency levels of its plants, it will not be easy to move away from nuclear power. The direction of South Korea's nuclear policies must be closely monitored.

Outside Asia, the trends in Eastern European and former Soviet countries are interesting. Russia is actively building its own nuclear power plants and helping its neighbors to introduce nuclear power. The country has agreed to help China expand the Tianwan Nuclear Power Station Units 3 and 4 from 2013. It is also strengthening its involvement with the Czech Republic, Hungary and Slovakia. Russia's emergence as a new exporter of nuclear technology and China's overseas expansion in the future will become new focal points for the nuclear industries of Japan, Europe and the U.S.

II - 6. Asian Coal Market

Atsuo Sagawa, Manager
Electric Power Group, Electric Power & Coal Unit

In 2012, coal prices basically followed a downward trend for both steam coal and coking coal. The price of steam coal dropped from around 110 USD/tonne at the beginning of 2012 to 80 USD/tonne in October, but later returned to the high 90 USD/tonne. Coking coal prices followed a similar trend, starting off the year at the low 220 USD/tonne and dropping to as low as 150 USD/tonne in October and rising back up to 160 USD/tonne. These trends were caused by the loose supply and demand balance throughout the year due to the slowing global economy. In other words, the supply capacities of the main exporting companies grew while demand did not grow as much.

A year-on-year comparison of steam coal imports of major consuming countries from January to October 2012 shows a growth of 41 million tonnes for China, 4.8 million tonnes for Japan due to growth in demand for electricity generation, and a drop of 1.5 million tonnes for South Korea. The significant growth in Chinese imports is attributed to the bounce back from the low purchase levels in the first half of 2011 when the coal prices were high. Compared with the latter half of 2011 when imports returned to normal levels, the rate of increase is about 1.5 million tonnes per month, and 18 million tonnes per year. The growth of the Chinese economy slowed in 2012, curbing the growth in electricity demand. This led to an oversupply of coal in China, which caused domestic coal prices to plummet. This may be one of the factors that accelerated the price drop. Another cause of the fall in steam coal price is the emergence of American shale gas. In the U.S., the increase in production of low-priced shale gas is causing a decrease in coal consumption for electricity generation. The gradual increase in the amount of excess steam coal diverted to exports, and the decrease in imports, are causing the growing supply capacity of steam coal in the market.

For coking coal, imports from January to October 2012 compared to the previous year were up 5.7 million tonnes for China, up 3.6 million tonnes for Japan and up 0.2 million tonnes for South Korea. Note that coking coal imports increased in Japan even though its crude steel production dropped 0.335 million tonnes year-on-year since part of the coal used as steam coal (such as Indonesian coal with low ash content) is treated as coking coal in the trade statistics. Taking this into account, Japanese coking coal imports have been flat or slightly declined, and the growth in imports from China and South Korea combined would only total about 6 million tonnes. Crude steel production for large coking coal importers, other than the above three countries, from January to October 2012 grew 6% for India but dropped 2% for Brazil and 4.5% for the EU. The demand for coking coal is not increasing so much around the world, and this is causing the price to drop.

What will the coal market be like in 2013? The steam coal price has come back up to the 90 USD/tonne level since the start of the winter demand season last year, but is hovering at the low 90 USD/tonne level in the absence of strong demand. The demand for coking coal is not strong either, although prices have come back up. With the closure and temporary suspension of production of less profitable coal mines in Australia due to the price slump, supply is likely to approach the actual demand level in 2013. Consequently, the supply and demand balance of coal is not likely to ease as much as it did in 2012. In Japan, steam coal demand may increase with the restart of the Haramachi Thermal Power Plant which has been shut since 3/11, but the demand outside Japan will depend on the economic recovery, whose trend will continue to affect the coal market.

II - 7. Renewable Energies

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

The installed capacity of solar power is increasing rapidly. This is driven unmistakably by the Feed-in Tariff (FIT) system of electricity from renewable energies ("renewables") which was launched last July. 140 MW of renewable electricity was introduced in the eight months from April to November last year, and considering that the new capacity installed during the previous year was 1400 MW and the accumulated capacity until then was 4900 MW, the result for 2012 is phenomenal. The total capacity that was newly licensed between July and November to qualify for the FIT system reached 3640 MW. While not all of it will start operating this year, the surge in installed new capacity is massive.

This high pace of introduction is likely to continue in 2013. Profitability of renewable generation projects will be maintained thanks to the generous purchase price of power, which will be given special consideration in the first three years of the FIT system as stipulated by the concerning law. Though the purchase price may be lowered somewhat due to the global drop in facility costs, this "special consideration" should keep the operators motivated to join in.

On the other hand, the energy policy that sets a guideline for the introduction of renewables has still not been established. The new Basic Energy Plan, which was supposed to be finalized last year, was left to the new administration as a major challenge to be addressed. Furthermore, the energy policy of the ruling Liberal Democratic Party (LDP) remains uncertain. While the LDP's election pledges are to "build an economic and social structure that need not depend on nuclear power", the new Prime Minister Shinzo Abe has repeatedly made the criticism that "promising zero nuclear power is irresponsible". On the other hand, its coalition partner Komeito is committed to abandoning nuclear power generation. With the LDP ready to "spend up to 10 years" to finalize the all-important new energy mix, the future seems uncertain.

However, the introduction of renewable energies places a burden on society, and thus a solid vision for the energy mix and clear targets based on the vision are essential. With the FIT system, the gap in interest between electricity generation operators and consumers, in other words, those who benefit and those who pay in the system, is particularly large. Under such circumstances, if the pace of introduction and final capacity target remain undecided, the system will become unstable and subject to various criticisms.

Last summer, the German government has set a cap of 52 GW on the total capacity of photovoltaics generation licensed to sell power at incentivizing prices. . It is considering doing the same for wind power and biomass. The cap would guarantee the operators a market of a certain size while freeing consumers from concerns over a limitless rise in the surcharges. Setting a cap is the solution that the German FIT system, which has been criticized for the soaring surcharge, and which some critics referred as "failure", has reached through trial and error.

In contrast, the Japanese FIT system has just been launched. While the renewable electricity surcharge for the average German household is as high as 1200 yen per month (2012), it is still about 80 yen for Japanese households. However, it is uncertain how fast and how much the surcharge will increase, while it most certainly places a burden on the Japanese economy. Japan needs to continue to gain experience and knowledge to determine the appropriate capacity target of renewable electricity for the country.

Setting a capacity target for renewable energies is a difficult yet unavoidable task involving sorting out opposing interests between policy targets and stakeholders. We hope that progress will be made through careful consideration within the available time frame.

II - 8. Energy Conservation in Japan and Overseas

Koichi Sasaki, Manager
Energy Conservation Group, Global Environment Unit

The Innovative Strategy for Energy and the Environment formulated last September has set ambitious goals for energy conservation and electricity saving (cutting energy consumption by 19% and electricity consumption by 10% compared to 2010 levels by 2030). Though the targets may be revised in the future, various programs will be prepared and implemented to achieve these targets.

As one of the energy conservation programs, the Bill to Partially Amend the Act on the Rational Use of Energy was submitted to the 180th ordinary session of the Diet. The program is based on the interim report published in February by the Energy Efficiency and Conservation Subcommittee of the Advisory Committee for Natural Resources and Energy. The key measures of the program are: 1) Consumer measures at peak electricity consumption, and 2) The "Top Runner" system for construction materials.

The first measure was drawn up to tackle the electricity shortage due to the March 11 disaster and evaluates the consumer-side countermeasures at the peak of electricity consumption. Specifically, peak electricity conservation measures, such as installing batteries and energy management systems, taken in addition to the measures taken so far, are counted as an effort to meet the electricity saving target set by the Act on the Rational use of Energy.

The second measure is introducing the Top Runner System for construction materials such as windows and heat insulators in the residential sector where energy consumption is on the rise. The system aims to reduce the energy consumption of the entire building by using highly efficient materials not only for new construction but also renovation. Furthermore, regarding the mandatory compliance of new buildings with the energy conservation standards, the roadmap for its implementation was presented in the interim report "Efforts in residences and buildings to create a low-carbon society".

Although the Bill to Partially Amend the Act on the Rational Use of Energy was submitted to the ordinary session of the Diet, it was scrapped due to the dissolution of the Diet. These efforts, however, are important for any administration, and their speedy introduction is keenly awaited.

Let us now look overseas. In the EU, an energy efficiency directive aimed at 20% energy conservation by 2020 was put into effect. The original proposal to impose legally binding numerical targets on member states was dismissed. In China, the "Twelfth 5-year Plan for Energy Conservation and Emissions Reduction" was published, setting a target to cut the energy consumption of industry by about 21% from 2010 levels by 2015. The Plan also sets a numerical target for each major industry. In India, a new energy efficiency certificates trading scheme called PAT (Perform, Achieve, Trade) was implemented, strengthening the country's energy conservation efforts. In the U.S., the gasoline mileage standard for automobiles will be raised by 50% in steps from the current limit of 35.5 miles/gallon (approx. 15.1 km/liter) by 2016 to 54.5 miles/gallon (approx. 23.2 km/liter) by 2025. Each country is striving to save energy by taking measures in line with its own situation.

II – 9. Domestic and International Prospects related to Global Warming in 2013

Hiroki Kudo, Assistant to Managing Director
Global Environment and Sustainable Development Unit

COP18/CMP8 held in Doha, Qatar closed after deciding to start the Second Commitment Period of the Kyoto Protocol from January 2013 and setting the work plan up to the negotiation deadline, 2015, of the Ad Hoc Working Group on the Durban Platform for Enhanced Action (ADP), which is the forum for establishing an agreed framework for 2020 onwards.

Going forward, the key point of negotiations in the United Nations Framework Convention on Climate Change (UNFCCC) will shift to what kind of post-2020 framework can be agreed upon by the international society. However, as the Doha negotiations did not see any major change to the usual confrontation between developed countries versus developing countries, and we are not optimistic about the outcome.

The persistent confrontation is symbolized by the failure of the two sides of COP18 to close the gap in views on the funding of developing countries by developed countries; the issue has been left for COP19, which is planned to be held at the end of 2013 in Warsaw. It is still uncertain if the key players will actively try to agree on a new international framework, due to such factors as the post-Presidential election position of the U.S. in the negotiations, the EU with the risks in its intra-regional economy, and the negotiating posture of the largest GHG emitting nation, China, where the new leadership will start. We are at the start of a difficult process in 2013.

Noteworthy issues are the developments concerning the EUETS (EU Emissions Trading System) and the direction of new policies in the U.S. In 2013, the EU is expected to decide and implement measures for correcting and adjusting the price of the EU allowance (EUA) which is slumping due to the sluggish economy (options being considered include controlling the volume and timing of EUA in the auction depending on the market price, and strengthening the targets). Furthermore, while preparations for collaboration between EUETS and the Australian emissions trading system are in progress, it is important whether new ties with others, such as with the State of California and other countries, will emerge. For the U.S., it is particularly interesting whether the market mechanism to address global warming, which was once abandoned under the first term of President Obama, will be resurrected in the second term. These points are crucial as they will determine whether the market mechanism in emissions trading systems concerning climate change will expand across borders in the near future.

Within Japan, the focal points for the first half of 2013 are what kind of global warming policy the new administration will “switch to”. Though the relative importance of the global warming policy is declining somewhat, the new administration will be asked to clarify if it will revise the 2020 target or not, the target beyond 2020, and what policies and measures it will take to achieve those targets, and to indicate a clear direction.

In particular, with the recent emphasis on near-term economic policies and the stable supply of energy, Japan may opt for more realistic targets for domestic global warming measures, and the government may have to ease the domestic GHG emission reduction targets from the current ones. In that case, the difficult option of building a system for counting Japan’s achievements in the bilateral offset credit system as efforts toward meeting the emissions reduction target, and to take the approval of the international community, may become increasingly important. The new administration will need to build a comprehensive strategy that considers both the domestic and overseas situations.

II - 10. Energy and Environmental Issues of APEC

Takato Ojimi, President
Asia Pacific Energy Research Centre

Prior to the APEC Summit, which will be held in early October 2013, a series of meetings is planned to be held in Indonesia. In the spirit of regional cooperation, the Asia Pacific Energy Research Centre (APERC, an affiliate organization of IEEJ), will seek to assist APEC and its 21 member economies in preparing to deal with important energy issues at these meetings.

Specifically, there will be four key activities of APERC in 2013, which are as follows:

The first is to complete and publish the *APEC Energy Demand and Supply Outlook 5th Edition* in early 2013 to assist the economies in formulating their policies. Then APERC will begin to prepare the *APEC Energy Demand and Supply Outlook* 6th *Edition* for completion in two to three years.

The second is to assist the APEC economies in their efforts to reduce energy demand. Under a target established by the APEC Leaders in their 2011 Honolulu Declaration, the APEC economies are seeking to reduce the combined energy intensity of the APEC member economies by 45% between 2005 and 2035. APERC will conduct research and analyses to identify ways to help achieve this target, while continuing to implement the APEC Peer Review on Energy Efficiency (PEER) and the Cooperative Energy Efficiency Design for Sustainability (CEEDS) projects.

The third is to assist the APEC economies in their efforts to increase low-carbon energy supply. APERC will implement the APEC Peer Review on Low-Carbon Energy Supply (PRLCE), focusing especially on greater use of renewable energy as agreed by APEC energy ministers in their 2010 Fukui Declaration. APERC will also help to implement the APEC Low Carbon Model Town (LCMT) project, which works with selected cities to evaluate the impacts of low-carbon city planning, which can reduce the use of fossil fuels and improve the efficiency of energy utilization.

The fourth is to assist the APEC economies in preparing plans to help assure stable energy supplies in the event of a supply disruption. Energy security is a critical issue to the APEC economies, many of which are dependent on oil and gas imports from outside the region. In collaboration with other organizations such as the IEA and ASEAN, APERC will organize training sessions and workshops for dealing with emergency situations as agreed at the APEC 2012 Ministerial Meeting in Saint Petersburg.

To meet the high expectations of APEC member economies, APERC's modest staff will need to carefully prioritize their efforts.

II - 11. Middle East

Koichiro Tanaka, Director and Board Member
JIME Center

In the Middle East and North Africa, traditional ruling structures will be seriously shaken this year. The main oil-producing countries will continue to try to maintain high oil prices, but otherwise 2013 will be as unpredictable as the previous year. Will these political and social turbulences eventually lead to long-term stability in the area?

The Arab Spring is progressing from the short-term diffusion phase to the mid- to long-term saturation phase. Monarchies without enough financial resources to appease the public, such as Jordan and Bahrain, will become increasingly dependent on financial assistance from the wealthy Persian Gulf countries. In turn, the Gulf countries themselves will struggle to cope with grass-roots challenges to the power of monarchies and sheikhdoms, like the demands for political reform in Kuwait. While the Persian Gulf oil and gas producer states, which run funds to support the monarchies, have generally switched to pursuing high oil prices, they are likely to prefer to avoid excessively high prices and maintain a sustainable and constant price level, due to concerns over the slowdown of the Asian economy.

As Egypt veers towards Islamism through politics, the future course of the country after the national referendum on the new Constitution will cause turbulence inside and outside the country. This year, President Morsi of the Muslim Brotherhood, who has just consolidated his power, will continue to struggle against the fiercely opposing secular citizens and liberals over the legitimate succession of the revolution On the other hand, the military seeks to emerge from the shadows to center stage while monitoring the reaction of Europe and the U.S. Public expectations and tolerance for the second term of President Obama are generally low in the countries of this region, and the double-standard reaction of the U.S. to the Arab Spring could fuel anti-Americanism in the area if dealt with inappropriately.

The heavy-handed Assad administration, which is still desperately fighting the rebel forces, is likely to fall in 2013, leaving an energized minority movement in the region. With heightened motivation for independence, the ties between the Kurds in the region will strengthen and exacerbate instability in the surrounding areas. This will fuel the confrontation between the Iraqi federal government and the Kurdistan Regional Government, but will also cause difficulties for Turkey, which has been promoting a good-neighbor policy.

In Iran, where the revision of the presidential election law has strengthened the restrictions on candidacy, dialogue with the U.S. is not likely to advance; the country is likely to return to its former inflexible stance under a new conservative president who respects the opinions of the supreme leader. Thus, the situation in Iran and the Persian Gulf will remain tense throughout the year, as the country forges ahead with its nuclear development program regardless of the hardship of its people under economic sanctions. Towards the end of 2013, Europe, the U.S., Israel and the Gulf countries will become more vociferous in their demands for action against Iran.

With the lack of will for peace on both sides, Israel and Palestine will confront each other more often in the international arena and in sporadic armed clashes, and together with the situation in Syria, their relations will increase the turmoil on the eastern Mediterranean. Japan strongly feels the need to act in order to strengthen its ties with the Gulf countries this year in view of the uncertain domestic energy situation.

II - 12. China

Li Zhidong, Visiting Researcher
Professor at Nagaoka University of Technology

At the National People's Congress to be held in March, the newly appointed head of the Chinese Communist Party and Central Military Commission Xi Jinping is expected to be elected as President of the Republic, and Li Keqiang, First Vice Premier of the State Council to be promoted to Prime Minister. 2013 will be the start of the potentially two-term (ten years) Xi-Li leadership, in which their ability to steer the country will be tested.

At the Communist Party Congress last year, the target to double the GDP and national income from 2010 levels by 2020 was announced. This is not so difficult for China which is now growing, and whose per-capita GDP has just reached 5,000 U.S. dollars. Though slow at the beginning of last year due to the European debt crisis and the sluggish global economy, the Chinese economy began to pick up in the autumn, and eventually achieved growth of over 7.5%. It is likely to maintain stable growth of over 7% this year again, based on the "active fiscal policies" and "moderate monetary policies" aimed at expanding domestic demand while controlling consumer prices. The estimated economic growth rate for 2013 published by the Chinese Academy of Social Sciences is 8.2%, the rate higher than the figure for last year.

Meanwhile, the new leadership is aiming to shift to a domestic demand-driven economy by expanding consumption and investing appropriately in infrastructure, and to run the economy "centered on improving the quality and efficiency of growth". While it is focusing on promoting urbanization and shedding excess steel and cement supply capacities to achieve these goals, how far these measures will be implemented awaits to be seen.

Efforts for energy conservation are likely to be strengthened since if China is to achieve its goal of reducing energy consumption per unit of GDP by 16% by 2015 from 2010 levels, it needs to cut energy consumption per unit of GDP by 9.9% this year, although it has already cut by 5.4% from 2010 levels as of September 2012. Regarding nuclear power development, it will restart the construction of new plants with the domestic high-temperature gas-cooled reactor and the imported Russian VVER1000 reactor. The development of wind and solar power will progress by strengthening the transmission network and grid connection. In particular, as part of the efforts for urbanizing, improving the living environment in rural areas and promoting industry, the government is expected to expand the annual new installed capacity of solar power to around 10 GW, and to revise the 2015 accumulated capacity target upward from 21 GW to 40 GW. In terms of the system, the carbon emissions trading experiment and deregulation of coal prices for electricity generation will be officially started, and the progress of reforms, such as levying carbon tax and introducing market mechanism in the pricing of natural gas and electricity, needs to be monitored closely. Furthermore, the trend of growth of petroleum and natural gas imports will not change, and the stable supply of energy including electricity will remain important.

Regarding Japan-China relations, it is already clear that neither country will benefit from conflict. I hope that the new administrations of both countries will try to mend the bilateral relationship that deteriorated under the previous regimes. The countries will need to seek and implement new measures to resolve the deadlock by new ideas and flexibility, by first reverting to the spirit of restoring Japan-China diplomatic relations, signing the Peace and Friendship Treaty, and a strategic partnership of mutual benefit.

II - 13. Russia's Dilemma between Eastern Siberia Development and the China Factor

Shoichi Itoh, Manager
Global Energy Group 2,
Strategic Research Unit

On December 12, 2012, President Putin delivered at the Federal Assembly his first state-of-the-nation address since returning to power. In the address, he emphasized that the economic development of Eastern Siberia and the Russian Far East, which face the world's most dynamic area of the Asia Pacific, is the key to the country's development in the 21st century. At the end of November, prior to the address, the President held a meeting of the Russian State Council for the development of the Far East and the Trans-Baikal (meaning "east of the Baikal") regions, inviting representatives of the ministries concerned and of the Far Eastern regions. In the meeting, Putin criticized the Far East Development Minister Viktor Ishayev for the delay in revising the federal socioeconomic development program of the region targeted for 2025, and sternly demanded that the Minister complete the revision by the end of the first quarter of 2013.

As one of the measures to accelerate the development of the East, the President proposed to increase tax incentives such as exempting new projects worth more than 500 million rubles (approx. 1.4 billion yen) of investments from taxation for 10 years after launch. This is aimed at spurring private investment in the construction of new production facilities and the exploration of new oil wells and gas fields. Furthermore, the President signaled the possibility of increasing government funding for those projects to reach 10 billion rubles (approx. 27 billion yen) from the currently allocated 1.5 billion rubles (approx. 4.1 billion yen), and to spend part of the funds to compensate local governments for their losses caused by the tax exemptions. A pre-requisite for all this would be to prevent a repetition of problems in the past, including the breakdown of numerous national projects in the planning stage and the vast amounts of unexplained expenditure, as the President once again emphasized.

The fate of the economic development of Eastern Siberia and Far East Russia will depend on strengthened economic ties with surrounding countries, in addition to domestic investment. In particular, the promotion of economic interdependence with China will be the key. China surpassed Germany in 2010 and has since become Russia's largest trade partner. On the day before the presidential election, President Putin presented a paper stressing the importance of boosting economic ties with China, instead of perceiving the country as a threat. Recently, however, Russia is feeling more threatened than ever by its accelerating economic ties with China, which has been its historical and geopolitical rival. Russia has long feared that the economically backward Russian Far East, with a small population of about 6.3 million, will someday be dominated by the overwhelming population and funds of China, rather than being able to build economic ties on an equal footing. There are even voices warning that China might make renewed territorial claims on the border between the countries, although the border dispute, the most serious cause of historical confrontation between the countries, was legally settled in 2004.

Recent efforts by Russia to woo Japan and strengthen bilateral economic ties are evidently driven by the presence of China. For Japan, both China and Russia are important countries in dealing with energy and geopolitical issues. Taking the recent change of leadership as an opportunity, Japan must strengthen its efforts to achieve a well-balanced energy diplomacy based on a far-sighted and unbiased stance.

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IEEJ Calendar of Events

Energy Indicators of Japan

IEEJ Homepage Top

Back Numbers of *IEEJ e-Newsletter*