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Contents

Summary

1. Discussions at the Fundamental Issues Subcommittee of the Advisory Committee for Natural Resources and Energy

Three generation mix options were presented by the government, namely the zero scenario (with nuclear power at 0% and renewable energies at 35%), the 15 scenario (with 15% and 30%, respectively) and the 20–25 scenario (with 20–25% and 30–25%, respectively). A new policy on energy and the environment, including nuclear power, will be formulated around August following a national debate.

2. Reform of the Electric Power System

The eighth Expert Committee was held on July 13 to discuss the interim report "Basic Policy on the Electric Power System – For a Power System Open to the Public", and the report was approved in principle by the committee members. Discussions including detailed reviews will now be held, aiming to reach a conclusion within this year.

3. Energy Supply and Demand Outlook for Japan in 2012

Even though Ohi Units 3 and 4 have been restarted, the energy situation is expected to remain tight in 2012 in terms of the "3E's policy" and the macro economy, due to the unpredictable supply-demand situation of electricity, outflow of national wealth, rising electricity costs, falling energy self-sufficiency rate and increasing CO_2 emissions.

4. Difficulty in UN Negotiations on Global Environment Actions Observed in "Rio + 20"

"Rio + 20", or the United Nations Conference on Sustainable Development, ended up being yet another typical negotiation battle between developed and developing countries, yielding no major results. It would appear to be difficult to form a consensus from a new perspective to build a new and effective UN framework based on the capability of each nation, including newly emerging nations.

5. European Feed-in Tariff Systems Struggling between Targets and Costs

Suffering from rising costs associated with photovoltaic power generation, Germany decided to significantly reduce the purchase price for its FIT system. Meanwhile, as it strives to rebuild its economy, Spain froze its FIT system in January and issued a proposal for a new tax on renewable energies. Countries are facing tough decisions to balance their obligations to meet EU targets while reducing their burden.

6. China Watching: 12th Five-Year Development Plan for the Energy Conservation and Environmental Protection Industry

The State Council of China released the "12th Five-Year Development Plan for the Energy Conservation and Environmental Protection Industry" and set an overall goal of expanding the production value of this industry by 2.25 times in the next five years. The Chinese government has also begun to focus on

stimulating demand which is essential for development of the industry, showing its enthusiasm for green growth.

1. Discussions at the Fundamental Issues Subcommittee of the Advisory Committee for Natural Resources and Energy

Shigeru Suehiro, Manager, Senior Economist
Energy Demand Supply and Forecast Analysis Group

The Fundamental Issues Subcommittee held its 28th and 29th meetings on July 5 and 11 to discuss revisions to the Basic Energy Plan. At the 28th meeting, the generation mix options which the government proposed to the Japanese public were explained. Further, Toyota and NGK Insulators, Ltd. were invited to attend a hearing on the current situation of fuel cell cars and NAS batteries. At the 29th meeting, Tobu Energy Management and the environmental agency of Kita-Kyushu City were invited to attend a hearing on the utilization of geothermal energy and the smart community.

At the 28th meeting, a report was made on the options presented at the Energy and Environment Council. There are three options, namely the zero scenario (with nuclear power at 0% and renewable energies at 35%), the 15 scenario (with 15% and 30%, respectively) and the 20–25 scenario (with 20–25% and 30–25%, respectively). The zero scenario is based on "Option (1)", which has been submitted by the Council, which calls for greater energy conservation and a shift to gas to achieve a CO_2 reduction ratio similar to that of other scenarios. Most committee members commented that the scenarios are "too hard to understand", and that "It is better to include more information, but we also need a summarized orderly vision", "How should consumers act in daily life?" and "Is additional energy conservation really feasible?" In response to these opinions, METI Minister Edano commented: "We must avoid giving the wrong impression that the discussion is being guided into one of the options. Thus, the options should be presented accurately, even if they sound somewhat complicated."

IEEJ Chairman & CEO Masakazu Toyoda noted that "It is acceptable to keep the options simple in order to facilitate national debate, but the presentations must be easy for the public to understand. The impact on the macro economy should be clearly stated by comparison with levels of consumption tax, for example. It is also doubtful whether additional energy conservation efforts are indeed feasible."

Currently, the three options are now being discussed nationally, and hearings to gather the opinions of the general public (in 11 cities nationwide), invitation of public comments and a debate-type public opinion survey (Note) are to be conducted. Based on these national debates, the Innovative Strategy for Energy and the Environment will be decided at the Energy and Environment Council in around August, and the "Basic Energy Plan" will be drawn up soon thereafter.

Note) A "debate-type public opinion survey" is a new type of survey in which randomly chosen examinees engage in a thorough debate while receiving enough information from experts. Changes in the examinees'

opinions and attitudes are then used as a reference when making policy decisions.

2. Reform of the Electric Power System

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

On July 13, the Expert Committee on Electric Power System Reforms held its eighth meeting to deliberate on the interim report titled "Basic Policy on the Electric Power System – For a Power System Open to the Public", and the report was approved in principle by the committee members. Discussions including detailed reviews will now be held, aiming to reach a conclusion within this year. The contents of the draft report are summarized below.

On the demand side, an environment that facilitates real competition will be created by full openning retail market, and eventually abolishing tariff restraints (namely abolishment of the current tariff system in which an electric company's profit is added to the cost). A final assurance service to avoid a complete lack of suppliers and to support remote islands will be discussed separately.

On the supply side, restrictions on wholesaling will be abolished in line with the full openning retail market. Measures to stimulate the electricity wholesale market will also be taken, such as providing the wholesale market with the excess electricity that remains after the reserve ratio has been secured. A near real-time market (one hour in advance) will be established for the electricity wholesale market. Meanwhile, to strengthen the supply capacity of PPSs, guidelines will be formulated for partial supply to complement the supply capacity of PPSs, and the rates for continuous electricity backup will be reviewed. To ensure supply stability, retail suppliers will be required to secure a certain supply capacity, and a capacity market will be established to trade the surpluses and deficits in supply capacity. Further, a mechanism for procuring power supply and recovering costs will be established to address the long-term supply-demand gap.

In the electricity transmission and distribution department, a "wide-area grid operator" will be set up to coordinate the transmission and distribution of electricity beyond the borders of supply areas, and further studies will be conducted on the functional and legal unbundling of power companies aimed at securing neutrality of the transmission and distribution department. The strengthening of inter-area transmission lines will be studied further based on the interim report from the Study Group on the Master Plan for the Strengthening of Inter-Area Transmission Lines. Regarding the review of leased transmission fees, efforts will be made to use the market to clarify the imbalance in rates, introduce the planned supply-demand balancing rule, and build a real-time market in the future.

Overall, the report is based on the concept of securing supply capacity and engaging in business activities while promoting competition, but also addresses the overall energy policy, as seen in the expectations for the development of a comprehensive energy service in the future that extends beyond the framework of

electricity, to cover oil, heat and gas.

Though the committee has yet to reach a consensus in the deliberations on many of the issues, including the real-time market, the detailed design will proceed based on the contents of this report.

3. Energy Supply and Demand Outlook for Japan in 2012

Yu Nagatomi, Researcher
Energy Demand Supply and Forecast Analysis Group

With the economic recovery, restoration of production facilities and supply networks, and easing of the mood of self-restraint, energy demand in 2012 is bouncing back from last year and showing an upward trend regardless of the ongoing efforts to save power and conserve energy. Regarding the electricity supply-demand situation this summer, a nationwide reserve ratio of 3.9% is expected on the premise that the ongoing power-saving efforts continue and the government's power-saving targets are met, and also that Ohi Units 3 and 4 of Kansai Electric Power Company continue to operate steadily after being restarted. Due to the power generation situation, the reference reserve ratio must be set at a marginal level of 3%, whereas a reserve ratio of 7–8% is secured during grid operation in normal times.

(1) Economic Outlook for 2012: The Japanese economy is recovering steadily in 2012 thanks to the increase in exports resulting from global economic growth and the recovery of consumer confidence, as well as the demands associated with recovery from the Great East Japan Earthquake. The outlook for European economies and the restarting of nuclear power stations, however, remains uncertain. Under such circumstances, I estimate real GDP growth of Japan at 2.1% from last year. Despite this, fossil fuel imports are expected to increase by 4.5 trillion yen (of which, 3.1 trillion yen for electricity generation) from 2010 to reach 22.6 trillion yen, due to the increased use of thermal power plants and soaring fuel prices. Consequently, Japan's trade balance is expected to be in deficit for the second consecutive year despite the recovery of exports.

(2) Energy Supply-Demand Outlook for 2012: Regardless of the causes of the increase in final energy consumption such as recovery from the Great East Japan Earthquake and economic growth, I expect final energy consumption to fall by 1.1% from last year due to higher awareness of saving energy and relatively moderate temperature forecasts. In line with the reduction in final energy consumption, I also expect a 0.9% decrease in the domestic primary energy supply. The increased use of thermal power plants to offset the decrease in nuclear power station operation will push up fossil fuel imports from last year's levels, namely oil imports by 4.3 million kL, natural gas by 5.4 million LNG-equivalent tons, and coal by 5.0 million tons. Despite the decrease in total volume of primary energy, CO_2 emissions derived from energy will increase by 3.5% from the previous year (up 11.5% from 1990 levels).

Impact on Japan's "3E" Policy: The estimated impact for 2012, on the assumption that only Ohi Units 3 and 4 are restarted, is as follows: (1) The reserve ratio of electricity for this summer will be 3.9%, but the electricity supply-demand situation will be extremely tight. Tight supply and demand is also expected during the winter in the area of Hokkaido Electric Power Company. (2) The increased use of thermal power

plants will cause fuel import costs to increase to 22.6 trillion yen, resulting in an outflow of national wealth and a possible rise in electricity costs (up 3.4 Yen/kWh from 2010). The self-sufficiency rate of primary energy (including nuclear energy) will fall from 18% to 7%. (3) CO_2 emissions will reach 1.18 billion tons (up 12% from 1990). Thus, conditions are expected to remain tough in 2012 in terms of the 3E's of "Energy Security", "Environment" and "Economic Efficiency", and the macro economy will be affected.

4. Difficulty in UN Negotiations on Global Environment Actions Observed in "Rio + 20"

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

The United Nations Conference on Sustainable Development, or Rio + 20, held in Rio de Janeiro, Brazil, closed on June 22 with the adoption of an outcome document. The purpose of the conference was to follow up on the Earth Summit, which was held in the same city in 1992 and in which the United Nations Framework Convention on Climate Change was signed. Thus, various parties involved in international environmental issues had been paying close attention to the discussions and outcome of this conference.

One of the characteristics of this conference was the active involvement of emerging countries (BRICS) and the lack of influence of advanced countries. This was symbolized by the absence of European leaders, for whom addressing the present economic issues was the top priority, and of the US president who faces the upcoming presidential election, in contrast to the full participation of the BRICS leaders. It is noteworthy that China has announced plans to provide funds to the United Nations Environment Programme (UNEP) and to other developing countries, showing its intention to bear responsibility commensurate with its ability.

The Japanese government commented that "significant achievements on boosting international efforts have been attained", but the conference was not highly evaluated by either domestic or overseas media. While the 1992 Earth Summit was a groundbreaking opportunity for the international community to share the importance of international environmental issues, including climate change and biodiversity, Rio + 20 did not produce results that would drive global environmental efforts further. One of the reasons for this was that the conventional negotiating pattern of developed countries versus developing countries remained the same.

Throughout the various UN negotiations on the environment and development including climate change issues, the responsibilities of developed and developing countries have always been on the agenda. In recent years, emerging countries that have achieved rapid economic growth since 1992 have had to act differently from other developing countries in a growing number of situations. However, in Rio + 20, the emerging countries acted as developing countries in the negotiations, but demonstrated to other developing countries an attitude that was commensurate with their abilities. In fact, in preparing the outcome document, emerging countries joined forces with other developing countries to demand that the expression "common but differentiated responsibility" be included in many of the documents, and reportedly engaged in fierce debates with the developed countries which did not agree to do so.

Consequently, regarding "promoting efforts on the green economy" in the outcome document, the

conference decided to oppose applying action plans stating specific targets on developing countries, while sharing the importance of the green economy itself. A similar relationship is observed in the negotiations on the future framework of climate change measures in the UNFCCC. Despite efforts to move away from the conventional setting of developed countries versus developing countries and to build a new and effective framework based on the ability of each country in the UN environment and development negotiations, the path to the goal remains difficult.

5. European Feed-in Tariff Systems Struggling between Targets and Costs

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

How many times have they done this? Germany again revised down the FIT (feed-in-tariff rate for renewable energy) for photovoltaic power. The German government announced that it would cut the FIT by approximately 20–30%, retrospective to April this year. The upper limit of purchasing electricity generated by facilities of a certain scale is set at 90%. In principle, the FIT system will not be renewed when the introduction rate reaches 52 GW. The recent major revision by Germany, which has been ridiculed as a "de-photovoltaic power bill", reflects the sense of crisis felt by the German government toward the increasing financial burden of the FIT.

The installed photovoltaic power generation capacity in Germany reached a cumulative total of 25 GW at the end of 2011 and Germany continues to lead the world in the extent of photovoltaic penetration. On the other hand, the increased burden on electric rates including the FIT of other types of renewable energy ("renewables") has reached a level that can no longer be overlooked. Actually, the surcharges resulting from the FIT system account for 25% in industrial electric rates and 15% in household electric rates. As a result, it is estimated that a typical German household pays an extra 10 euros (approximately ¥950) per month in its electricity bill.

On the other hand, the Spanish government took the drastic measure of freezing the FIT in January in response to the financial crisis. The European Commission has criticized the freeze for its negative impact on investment in renewables, but the current Spanish government is not inclined to listen to such criticism. With no alternative proposal for the FIT, the government even announced in July that it would introduce a new tax on the benefits produced from renewables. The new tax will yield revenue of approximately 1 billion euros if the government levies a 19% tax on photovoltaic power and 11% on wind power, which would be equivalent to retroactive cuts of the FIT.

European countries, caught between the proponents and opponents of the FIT, have been forced to make a difficult choice regarding their FIT systems. The recent revision bill in Germany has also undergone twists and turns; when the bill was originally drafted, it was proposed to limit the annual photovoltaic introduction to 1 GW. In the meantime, a relatively high FIT rate (18.5 cents) was maintained for facilities of 10–40 kW scale in the final phase in consideration of the photovoltaic power generation industry. Introduction of the new tax in Spain is also considered to be a desperate measure to ease the burden without breaching the rules by retroactively cutting the FIT. Thus, a way of simultaneously satisfying these two positions has yet to be found, as evidenced by the polarized views on the FIT system in Europe as either "failure" or "success".

Thus, the last criterion each European country must resort to will be the commitment they have made to the European Commission on the volume of renewable penetration. The goal of supplying 20% of total energy consumption by renewables by 2020 has to be achieved, however hard the increasing burden becomes or however slowly renewables penetrate. In other words, the moment of giving up trying to achieve this goal would constitute “failure” of the FIT system. Meanwhile, the fact that the FIT system in Japan has started without any established introduction goal is a considerable challenge for the system. Promoting the penetration of renewable energy causes a great social burden, and continuing with the FIT system without a clear goal is akin to sailing on the ocean without a sea chart.

On June 6, the European Commission released a communiqué stating that “the goal for introduction of renewables by 2030 should be established soon”. EU continues to hold the reins firmly.

6. China Watching: 12th Five-Year Development Plan for the Energy Conservation and Environmental Protection Industry

Li Zhidong, Visiting Researcher
Professor at Nagaoka University of Technology

Development of the green economy aimed at satisfying both environmental protection and economic growth is a worldwide trend, and China is no exception. On June 16, the State Council announced the "12th 5-Year Plan for the Development of Energy Conservation and Environmental Protection Industry" which is a principal pillar of green growth. The plan sets an overall goal of raising the production value of the energy conservation and environmental protection industry from 2 trillion yuan (25 trillion yen) in 2010 to 4.5 trillion yuan in 2015, and raising the ratio of the added value of the industry to GDP to 2%. It also specifies goals for each area, which include raising the market share of energy-saving products from the current 10% to 30%, increasing the sales of energy service companies (ESCO) by 30% per year, and developing 20 ESCOs with annual sales of more than 1 billion yuan. Although these goals seem to be extremely ambitious, it is essential to achieve them in order to promote domestic demand and thus sustain economic growth, which has fallen from double-digit growth to around 7%, and to realize long-term sustainable development. It also reflects the enthusiasm of the Chinese government for promoting "transformation" (shift of the economic growth pattern).

The "Industry Development Plan" decided that, in order to achieve the goals, intensive support will be provided to eight fields: 1) technological development and industrialization of areas with significant potential for energy conservation such as boilers and furnaces, electric motors and utilization of residual heat and residual pressure, 2) industrialization of semiconductor lighting, 3) development of a lot of model projects of urban mines to recover metallic resources from municipal waste, 4) industrialization of remanufacturing products from recyclable parts recovered from waste, 5) recycling and reuse of industrial waste, 6) development and industrialization of contamination protection technology including smoke elimination, desulfurization, and denitration, 7) construction of industrial base for seawater desalination and 8) development of ESCOs and environmental protection service businesses. Moreover, the plan states that policy measures shall be taken such as financial support by granting subsidies and providing tax benefits, and reinforcement of funding support by encouraging low-interest loans, issuance of corporate bonds, and IPOs.

Meanwhile, genuine efforts are starting to be made to stimulate demand, which is essential for the development of the industry. The Chinese government published the 12th Five-Year Plan in March 2011 and established binding goals that must be achieved, which include reducing per-unit GDP CO_2 emissions by 17% in 2015 compared to the 2010 level, cutting energy consumption per GDP by 16%, cutting NO_x and ammonia-form nitrogen emissions by 10%, and cutting SOx and COD (chemical oxygen demand)

emissions by 8%. Subsequently, the Chinese government published the "Comprehensive Work Plan for Energy Conservation and Emission Reduction" in August 2011, "Work Plan for Greenhouse Gas Emission Control" and the "12th Five-Year Environmental Protection Plan" in December 2011, and the Standing Committee of the State Council approved the "12th Five-Year Plan for Energy Conservation and Emission Reduction" on July 11, 2012. The Chinese Government calculated that these plans will induce investments worth 1 trillion yuan in energy conservation and more than 800 billion yuan in environmental protection in 2015, and will also expand the market size of ESCOs and the environmental protection service industry to 300 billion yuan and 500 billion yuan, respectively. Thus, the Industry Development Plan is not a dream, but is backed by domestic demand.

The technological competence and know-how of Japanese-affiliated companies are highly evaluated in the energy conservation and environmental protection industry. A business model featuring a "comprehensive system service" that undertakes everything from the local production of facilities to optimum design, construction, operation and maintenance of the system while protecting intellectual property rights will be effective for expanding business in China.

7. ME Watching: Situation Remains Difficult

Koichiro Tanaka, Managing Director &
Head of JIME Center

Concerning the declaration of dissolution of the People's Assembly by the Supreme Council of the Armed Forces (SCAF), Egyptian President Morsi promptly announced that the judgment of the Supreme Constitutional Court (SCC) which served as the basis of SCAF's declaration was unconstitutional, and that the People's Chamber was being restored to its original state. However, Egypt fell into political stalemate because the SCC also immediately declared the presidential decree to be invalid. President Morsi is racing to bolster public support before it wanes, in order to compete with the SCAF which is focusing on maintaining established interests. Although U.S. Secretary of State Mrs. Clinton stated that the US supports the transition to civilian rule and democratization of Egypt after her first meeting with President Morsi, her statement was not a sufficient warning to the SCAF, and confrontation between President Morsi and the SCAF is likely to intensify during the next phase of establishing the new constitution. The dismissal of General Tantawi from his position as Chairman of SCAF, announced by President Morsi on August 12, should be read in this context.

Amid global concern about the Syrian army's attacks on citizens, a UN Security Council resolution involving sanctions against Syria was rejected by the vetoes of China and Russia. However, the Assad regime is now suffering following the killing in a bomb blast of key staff, including the secretary of defense, as the combat has spread to Damascus, the capital of Syria. The battle fought over the control of Aleppo will be a defining moment for Syria.

Iran and the P5+1 countries held a meeting of deputy chief negotiators in Istanbul on July 24, following a technical meeting on July 3. However, these meetings failed to close the gap between the claims of both parties concerning uranium enrichment and thus the problem is unlikely to be solved in the short term. The U.S. government newly announced that China and Singapore will be excluded from the imposition of sanctions for 180 days on June 28, 2012, which was the deadline for issuing the sanctions based on the National Defense Authorization Act. However, as the volume of crude oil trade by China has rapidly increased since May, questions are already being raised about the U.S. decision.

Subsequently, the U.S. Treasury Department announced an expanded list of sanctions targets on July 12. Further restrictions were imposed on crude oil exports because 58 tankers owned by the National Iranian Tanker Company (NITC) were designated as targets of the asset freeze. The National Security and Foreign Affairs Committee of the Iranian Parliament has sought urgent consultation on a bill to blockade the Strait of Hormuz, thus a new phase of increased tension has begun.

In Libya, although parliamentary elections were held and the Democratic League, which opposes the Islamic forces, is reported to have won, it will take time to closely monitor the real composition of the parliament because of the great number of independents. In the Eastern Province of Saudi Arabia, tensions have been rising again in Al-Qatif following the authority's attack on and apprehension of the religious leader of the Shiites.

8. Russia Watching: Development of Eastern Region as a Litmus Test

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

President Putin gave a keynote speech at the annual International Economic Forum in Saint Petersburg (attended by more than 5,000 people from 87 countries). In his speech, Putin boasted that the macroeconomic indicators of Russia are relatively good among the G20 countries at present, but frankly admitted delays in diversification and the fragility of the Russian economy, which has been buffeted by oil prices. Moreover, concerning corruption which has attracted massive criticism of the administration both in Russia and abroad, he asserted that corruption is the greatest threat to the economic growth of Russia, even more serious than fluctuations of oil prices.

In a meeting with the managers of leading global energy companies held on the same day, Putin noted the importance of creating market conditions which are as transparent and favorable as possible for foreign investors, adding that the open policy of the new administration will also be implemented in Russia's strategic sector such as the fuel-energy complex."

Certainly, cooperation with major foreign energy companies is progressing in Russia. Rosneft, the largest oil company in Russia, reached an agreement on the joint development of deposits in the Arctic Ocean and the Black Sea with ExxonMobil in August 2011. Rosneft also signed an agreement on the joint development of the West Siberian oil fields in June 2012, and reached another agreement with Statoil of Norway and Eni of Italy on a joint development project in the Barents Sea. Will this type of cooperation with foreign companies continue to develop in the energy sector?

Development of the eastern region (Eastern Siberia and Far East) would be crucial for closely examining how far Russia can strengthen its economic structure by utilizing foreign capital in the future. Large amounts of foreign capital are essential for developing the eastern region for the following reasons: 1) the importance of the eastern region has been increasing for Russia in order to maintain stable production of crude oil and natural gas in the future, 2) the eastern region will serve as a base for participating in economic activities in the Asia Pacific region, which is becoming the world's economic center, 3) vast federal funds will be poured into the region as it is the target of an intensive industrial strategy of the current administration, 4) there expected to be a turf war among federal departments, including the role of the newly established Ministry for Development of the Russian Far East as local interventions by the national mechanism increase in association with 3) above, and 5) huge investments are essential in order to accelerate the development of economic and social infrastructure in this vast area.

On July 9 in Moscow, Putin assembled Russian ambassadors to diplomatic missions all over the world and told them “Russia has failed to correct the distorted way in which Russia is portrayed in the world.” Russia will finally accede to the WTO this summer, which may be an excellent opportunity for Japan to build constructive bilateral relations with Russia by sending frank messages to Moscow while examining the trends in Russia, especially development of its eastern region.

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IEEJ Calendar of Events

Energy Indicators of Japan

IEEJ Homepage Top

Back Numbers of *IEEJ e-Newsletter*