Special Bulletin

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Discussion on Long-term Energy Outlook in Paris

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On March 9-10, I had an opportunity to discuss crude oil price problems, the present international energy situation and long-term energy outlook issues in several meetings in Paris with experts from the International Energy Agency and French energy companies. Using as a basis for discussion "Asia/World Energy Outlook 2016" [1] (hereinafter referred to as the IEEJ outlook) released by the Institute of Energy Economics, Japan last October, I had a vigorous discussion with them on various issues.

Due to space constraints, I here refrain from describing details of the IEEJ outlook. At the meetings in Paris, the participants exchanged various interesting views on the IEEJ outlook's four key points -- (1) the significance of Asia including the Association of Southeast Asian Nations, (2) impacts of energy supply disruptions (physical supply shortages), (3) innovative technologies and other measures to address climate change, and (4) nuclear power generation's effects on the so-called 3E's (energy security, environmental protection and economic efficiency). (For an overview of the IEEJ outlook, see A Japanese Perspective on the International Energy Landscape (294).) The following summarizes impressive points to me in the meetings.

As for future Asian and ASEAN energy supply and demand, it was pointed out that how future economic growth would be and how economic structures would change would be important. China, India and ASEAN will undoubtedly drive global energy demand growth. However, future economic growth patterns will greatly influence the degrees of energy demand growth and the selection of energy sources. I felt anew that it would be important to further collect and analyze information on individual Asian economies to develop a long-term energy supply and demand outlook.

On ASEAN on which the latest IEEJ outlook focuses, the meeting participants indicated their interests in three points -- (1) ASEAN attracts attention from energy stakeholders in the world as the next growth center following China and India and is expected to expand energy demand over a long time, (2) demand will substantially increase for coal as a realistic choice, and (3) demand will be robust for fossil fuels as a whole including oil and gas. Due to the energy demand growth, ASEAN's carbon dioxide emissions and dependence on energy imports will increase, making relevant national and regional policy initiatives important. In the meetings in Paris, many views and questions were presented on the feasibility of and real constraints on the regional initiative to develop a regional power grid network which was highlighted in the IEEJ outlook. Questions also came on the

[1] http://eneken.ieej.or.jp/whatsnew_op/161021teireiken.html

possibility of Japan's grid connection with Russia and South Korea, indicating interests from wider viewpoints.

As for the analysis of energy supply disruptions, I had expected that some would question why such an analysis was made at a time when crude oil prices have plunged from levels above $100 per barrel amid oversupply. Unexpectedly, however, no such question or view came in the meetings in Paris, indicating that the meeting participants shared interests in the potential significance of future energy supply disruptions in consideration of the destabilization of the Middle East and uncertainties about the new U.S. administration's foreign policy. As for the IEEJ outlook's analytical approach of focusing on physical energy shortages rather than price hikes caused by supply disruptions, many meeting participants indicated interests in the approach as a unique one. At the same time, however, they pointed to difficulties in understanding the unfamiliar approach and to doubts about energy supply disruptions' very great economic effects presented as a result of the analysis, indicating various problems in discussing energy supply disruptions. We may have to deepen our analysis and rework our description.

Subject to the most vigorous dialogue at the meetings in Paris was the IEEJ outlook's analysis on climate change. First, the IEEJ outlook's concept of minimizing the combination of greenhouse gas emission mitigation, climate change adaptation and climate change damage costs attracted attention as providing an economic analysis and a new viewpoint. At the same time, however, it was noted that projections would widely vary depending on how "damage" would be defined or what damage would be included. It was also pointed out that damage could involve the problem of values. Second, meeting participants shared the view that innovative technology development would be significant as a long-term response to climate change. They particularly indicated great interests in why the IEEJ outlook focuses on an option of combining CCS (Carbon Capture and Storage) with CO_2-free hydrogen and how other innovative technologies should be interpreted. Their strong interests in the IEEJ outlook led me to feel that the outlook's analysis of climate change should be deepened and refined. Regarding an analysis of innovative technologies' impacts, I felt that more understandable analyses and explanations are required on how the IEEJ outlook's routine "Advanced Technologies Scenario" has been developed and what the borderline is between innovative and other technologies.

The IEEJ outlook presented four nuclear energy scenarios, analyzed their respective impacts on the 3E's and pointed to nuclear energy's contributions to the 3E's. In this respect, I felt that the meeting participants shared a view that nuclear energy as well as renewable energy may be required to make contributions to climate change measures as these measures are enhanced in the future. On the future course of nuclear energy, however, the meeting participants noted that there would be various problems including concerns about nuclear safety, how to secure public acceptance of nuclear power plants and how to position nuclear energy in electricity market deregulation. They also pointed out that Asia as a whole is expected to expand nuclear power generation but includes Japan and Taiwan plagued with uncertainties about nuclear power generation and that how to secure public acceptance may grow even more important in China and India expected to substantially increase nuclear power generation. They argued that these points should be taken into account for any analysis. How to respond to various uncertainties is a key challenge in developing a long-term

energy supply and demand outlook. Taking advantage of this kind of meetings to deepen understanding on where problems exist, what the problems are and what approaches are required may contribute to developing a better, more meaningful long-term outlook.

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