

Symposium on 7th Strategic Energy Plan

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On January 15, the Institute of Energy Economics, Japan, sponsored an energy symposium entitled “The Seventh Strategic Energy Plan” at the Iino Conference Center in Tokyo. Late last year, the government announced a draft of the Seventh Strategic Energy Plan including the outlook for Japan's energy supply and demand for fiscal 2040. At the symposium, representatives from various fields held a panel discussion on the draft, as suggested by the title. At first, IEEJ Senior Research Director Yoshikazu Kobayashi gave an overview of the draft, followed by a panel discussion by Keigo Akimoto of the Research Institute of Innovative Technology for the Earth, Masayuki Hyodo, chairman of Sumitomo Corp. and the Energy Committee of the Japan Association of Corporate Executives, Hirofumi Matsuo, a commentator and senior editorial board member of the Nikkei Shimbun newspaper, and IEEJ Chairman Tatsuya Terazawa.

The four panelists were the best qualified to discuss the topic. Akimoto made an extremely important contribution to the formulation of the energy supply and demand outlook for fiscal 2040 in the draft. Hyodo represents the industry and business world. Matsuo is the most important media commentator on energy issues. Terazawa has participated in the Strategic Policy Committee of the Advisory Committee on Natural Resources and Energy, which has considered the Strategic Energy Plan. I moderated the panel discussion, which was lively and extremely significant, including the panelists' presentations and their question-and-answer session with the audience. The symposium was held in a face-to-face and online hybrid format, with more than 1,200 people registered as participants. In the following, I would like to summarize the points that I felt were particularly important at the symposium, instead of introducing arguments there as they were.

First, the most important point of the Seventh Strategic Energy Plan that emerged through the panel discussion is that it is of critical importance for Japan to stably provide energy, especially electricity, at competitive prices to promote decarbonization. This point represents a crossroads for Japan or the Japanese economy, based on an awareness or a sense of crisis that failure to do so could lead to Japan's decline. Given the situation in Europe, especially Germany, which has been directly hit by the Ukraine crisis, how important it is to secure a stable and competitive energy supply is clear. Through the panel discussion, I reaffirmed that this point is given particular emphasis in the Seventh Strategic Energy Plan.

As pointed out in various ways since the announcement of the draft, factors behind the comeback of energy security as a top priority include growing geopolitical risks represented by the Ukraine crisis and the destabilization of the Middle East. However, what had a greater impact on the debate over the Strategic Energy Plan was the new issue of how to supply decarbonized electricity as much as possible in a stable and competitive manner in response to increasing demand for electricity. In addition to the impact of electrification for decarbonization under the GX (Green Transformation) initiative, the significant expansion of generative artificial intelligence and data centers amid the new information revolution under the DX (Digital Transformation) initiative has brought about a paradigm

shift in the estimation of future electricity demand. Electricity demand, which until recently had been expected to continue declining over a long time, is now predicted to increase under the GX and DX initiatives. Unless Japan appropriately responds to the new GX and DX situation, its future economy and industry may be put in jeopardy. Therefore, how to supply electricity stably at competitive prices has become a top priority challenge.

In response to the challenge, the draft calls for making the maximum use of nuclear energy, instead of minimizing dependence on nuclear energy as urged in the current Sixth Strategic Energy Plan. This is because the effective utilization of existing nuclear reactors on the premise of secured safety and national understanding becomes the most important approach to supplying decarbonized electricity stably in a competitive manner. Japan, where about 20 nuclear reactors are still left idle, has the potential to get a large positive effect by restarting them. The projected nuclear power generation at 200 billion to 240 billion kilowatt-hours in the draft represents the maximum use of nuclear energy including the utilization of existing reactors and their replacements.

The second important point is that we must understand anew that the realization of the draft's future vision of Japan's energy that should be pursued would not necessarily be an easy challenge. As has often been pointed out during discussions on energy supply and demand outlooks, the outlook in the draft has been formulated under the backcasting approach of depicting how to achieve the goal of cutting greenhouse gas emissions in FY2040 by 73% toward reaching carbon neutrality by FY2050. As electricity demand is projected to increase substantially under the GX and DX initiatives as noted above, renewable energy is predicted to account for around 40-50% of the power generation mix in FY2040, nuclear for around 20%, and fossil fuels for around 30-40%. In order to achieve the projected nuclear power generation capturing some 20% of total power generation, Japan may face a challenge to restart all idled nuclear reactors, operate existing reactors effectively and stably, and replace them as necessary. Renewable energy power generation is projected to account for some 40-50% of the total, representing a substantial increase from the present level and indicating that Japan may have to tackle difficult challenges to secure suitable sites and social accessibility and appropriately respond to the intermittency of renewable energy and economic security. Since decarbonization is required for fossil-fired power generation, which is projected to capture around 30-40% of the total power generation, Japan may have to expand the use of hydrogen, ammonia, and CCS (Carbon Capture and Storage) technology.

In addition to the difficult challenges as mentioned above, the decarbonization of non-electricity and heat demand sectors is an even tougher challenge. Without significant progress in the decarbonization of non-electricity sectors, the goal of a 73% cut in GHG emissions will not be achieved. In the panel discussion, it was often noted that the draft, while pointing out the need for the decarbonization of non-electricity sectors, fails to specify how to realize it. The draft as a whole thus depicts an ideal future picture of energy to be pursued under the backcasting approach, while indicating that paths to the ideal goal would not be smooth.

The third important point is that the energy supply and demand outlook in the draft takes various uncertainties into account, providing multiple scenarios. The abovementioned target power generation mix indicates the shares for power sources in the form of wide ranges, such as about 40-50% for renewable energy and about 30-40% for fossil fuels, and falls short of breaking down the share for fossil fuels. As noted above, fossil-fired power generation may have to be decarbonized to a considerable extent. However, no details are given about hydrogen, ammonia, and CCS. In the panel discussion, it was often pointed out that it may be difficult for private companies to make investment decisions using the outlook that leaves the future energy vision vague and unpredictable. Some people

may argue that the Strategic Energy Plan should present an overall future picture of energy to be pursued and leave detailed policies to set concrete targets and implement specific measures and that the government should not make all decisions but leave private companies to make their own business decisions. However, there is no doubt that the materialization and realization of the future picture will be an important challenge for the future.

Based on the above points, it can be assumed that the Strategic Energy Plan represents not any conclusion but an important starting point for the future process in which the question of how to achieve goals will be asked.

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