Fifth Session (Toward a Low Carbon Society)

Mr. Katsuhiko Suetsugu (Asia-Pacific Energy Forum) opened the fifth session, stating his hope that the discussion could lead to suggestions on how to create a low carbon society. He introduced the experts on the panel.

Speaker 1: Dr. Kaoru Yamaguchi (Institute of Energy Economics, Japan)

Until the industrial revolution, countries in the world had used only renewable energy such as biomass and hydropower.

Japan had been promoting renewable energy since the 1970s. One reason for this was that Japan did not have its own large oil reserves and did not want to grow completely dependent on other countries. Since the late 1990s, Japan had been moving toward the utilization of not just domestic, but also renewable fossil fuels. In 1997 Japan had hosted COP3, also known as the Kyoto Conference. In 2003, Japan had defined "Renewables Portfolio Standards." Additionally, Japan had been promoting Cool Earth 50, "Low Carbon Society 2008" announced at the G8 Hokkaido Toyako Summit, and a Japanese version of the Green New Deal.

Renewable energy made up only 2.2% of power generation energy sources in Japan, whereas fossil fuel accounted for 67.4%. However, the government of Japan was working to change this, and hoped to significantly increased the amount of photovoltaic (PV) energy used in the country, up to 20% by 2020. In order to do this, the PV costs needed to be reduced. The government aimed to halve PV costs in 3-5 years.

As overall strategies, Japan was aiming for increased liberalization in the energy sector along with an increase in renewable energy sources.

Speaker 2: Dr. Tetsuroh Muramatsu (Executive Officer, Group General Manager, Solar Systems Development Group, Sharp Corporation)

Sharp was doing its part to increase the share of renewable energy sources used in the world to 30.6%, which was the value specified by the European Renewable Energy Council in order to keep global temperature rises within 2 degrees Celsius. Sharp estimated that 45 billion PV modules needed to be installed around the world by 2040 to meet this target. This was based on the assumption that by 2040 300GW of PV modules would be installed per year in all over the world.

In order to create the required number of PV units, Sharp estimated that three conditions needed to be met: 1) every year a new PV production line needed to be built with a capacity of 109% the previous year's line; 2) every PV production line would need to produce continuously for 30 years; 3) existing PV units would have to keep reliably producing energy for 30 years.

As the world changed and emerging economies continued to work toward better lives, global energy consumption levels would rise. For Japan, this presented two challenges: 1) how could the Japanese electronics industry contribute to greater energy production? 2) how could Japan appeal its existence to the world?

Sharp was facilitating technology transfers between developed and developing countries. The company had identified many issues which hindered the expansion of PV power generation. The company believed that by providing solutions to lower costs, the expansion of alternative energy sources would take off.

Speaker 3: Dr. Lobo Balia (Assistant Minister for Environmental and Regional Affairs, Ministry of Energy and Mineral Resources, Republic of Indonesia)
As an archipelago, Indonesia was very concerned about global warming. President of Indonesia Susilo Bambang Yudhoyono had announced at G20 Pittsburg that the country would reduce emissions 26% by 2020. Although the country wished to make contributions to the environment, movements to provide cleaner energy threatened to raised energy costs to much higher levels than what were being enjoyed at the time.

An analysis of the energy sources used in Indonesia suggested that the country was not in an industrial stage. Its main emission sources were Land Use Change and Forestry (LUCF), peat land and energy. Most Indonesian energy came from oil. Consumption was steadily increasing, at a rate of about 7% growth annually. The total installed capacity of Indonesian energy generators was 30GW, half of Japan's capacity. Only 64% of the country enjoyed electricity. As it thought about renewable energy, the Indonesian government was focused on how to fix these problems as well.

The government had developed a primary mix target for energy. By 2025, the country aimed to decrease oil consumption by around 20%, replacing it with renewable energy. Dr. Balia noted that a presidential decree in 2005 had declared a shift away from a dependency on oil. The main barrier to this shift was the development of technology to facilitate it.

Dr. Balia illustrated three scenarios for the future of the energy field in Indonesia. With a business-as-usual scenario, emissions would increase exponentially. The primary mix target suggested by presidential decree would slow the rise in emissions. A third scenario would be one in which the country was able to invest in clean energy technology, reversing the emissions trend.

There needed to be a paradigm shift in energy policy in order to turn Indonesia into a low-carbon society. Improvements in demand side management would encourage energy supplies. In order to do this, international support, including the transfer of technology, was very important.

Q & A
Amb. Nogami asked about the required capacity for PV generators and actual generation capacities. Were PV generators very matured products, or was there still technological innovation to be done to lower the amount of units that needed to be produced?

Dr. Muramatsu answered that the amount of required PVs is estimated based on current technology level, and that if the conversion efficiency grew to over 50%, the number of units required to make renewable energy sources more than 30% of world energy generation would drop to one-third.

Mr. Yoshihiro Watanabe (Advisor, Bank of Tokyo-Mitsubishi UFJ) thanked the panelists for the perspective they had provided and asked each panelist about feed-in tariffs. Feed-in tariffs were often criticized as being a system through which benefits were provided to the rich at the expense of the poor, as the tariffs granted subsidies to producers through public funding. To Dr. Muramatsu, he asked how a Japanese company like Sharp planned to compete with Korean and Chinese competitors who offered more efficient PV generators. To Dr. Balia, he stated that he believed that the Japanese government was ready to offer help to the Indonesian government as it pursued its paradigm shift. How could Indonesia improve its environment in order to absorb offers of support from Japan and elsewhere?

Dr. Yamaguchi responded that in countries like Germany, feed-in tariffs had been introduced not just for energy but also to improve the agricultural sector as the tariffs had been used to attempt to induce farmers to produce wind energy. He suggested that

Japan as well should think about how to help a wider part of the population benefit from a feed-in tariff scheme.

Dr. Muramatsu answered that Sharp would overcome competitors by lowering costs, and it would be more important at present that whole PV manufacturers together need to expand business dimension and technology level.

Dr. Balia said that Indonesia was in a very difficult situation. First, there needed to be strong policy interpretation in all sectors. It required very extensive coordination. He hoped that Indonesia could achieve the target energy mix by 2025 as this would ease the situation in Indonesia a lot and help it to accept more support for greater reductions.