

On November 24, I have participated in the Virtual Workshop "Japan's Climate and Energy Security Strategy" organized by the Atlantic Council and Howard Baker Forum as Counselor of the Institute of Energy Economics, Japan. The keynote speech was made by Mr. Izuru Kobayashi, Deputy Commissioner of the Agency for Natural Resources and Energy, on "Japan's Energy and Nuclear Policy for Carbon Neutrality" The other panelists in addition to me were Ms. Clara Gillispie (National Asian Studies Bureau), Mr. Tobias Harris (Center for American Progress) and Ms. Jane Nakano (Center for Strategic and International Studies). Ms. Jennifer Gordon of the Atlantic Council played a role of moderator.

Mr. Kobayashi has talked about:

- 2050 Carbon Neutral Declaration and 2030 Climate Goal
- How we realize 2050 Carbon Neutrality
- Green Growth Strategy
- Nuclear Power in Green Growth Strategy
- The 6th Strategic Energy Plan
- Japan Nuclear Power Plant
- Japan's Initiative to Accelerate Nuclear Innovation

Thereafter, the panel discussion was held, where Ms. Gordon asked me the following questions to which I have answered as following.

Q1. What are your key takeaways from Japan's new Basic Energy Plan?

A. As an energy expert, I wouldn't say it is Mission Impossible, but I would say it is Mission Almost Impossible. But I believe we have to try. There are biggest challenges in my view:

1) Energy Efficiency

We need to improve energy efficiency by 35% by 2030, which is much higher than 14% improvement in the last 20 years. We have to make tremendous efforts like we have done in the 1980's, with no more low-hanging fruits. We may need some drastic industrial structure change, such as steel production decrease by 30%. The magnitude of industrial structural change would be enormous. Thus, we need "Just Transition".

2) Renewable Energy

Renewable power share which is 18% now has to increase to 36-38% by 2030. But, Japan's solar power installation per square km is already No. 1 in the world, higher than that of the US, China and Germany. There are no more flat land area available, and only mountainous area is left, which would be costly and dangerous to install solar power. Onshore wind power is in same situation, so we have to go to offshore. However, Japan's offshore is much steeper

than, say, the North Sea in Europe, so we have to install floating vessels, rather than fixed-bottom type systems, which is relatively new technology, so there are many challenges in terms of technology, acceptance of local community especially fishermen and safety regulations.

3) Nuclear

Currently only 10 nuclear power units have restarted the operation, with capacity of 9.1 GW. The 2030 target of 20-22% by nuclear in total power generation requires 30-35GW, which will require 27 units in total. This is very big political challenge, looking at the current public sentiment, in which majority are against it. Beyond 2030, we need to extend most of the power plants' lives to 60 years, or maybe longer. Also, we have to hope for next generation reactors, including SMRs. Those are very tough challenge, but I believe we have to tackle it, because in Japan renewable energy alone cannot meet the whole carbon-free energy demand.

Q2. Where do climate and energy policy fit with PM Kishida's other priorities?

A. Of course, it is one of the highest priorities, because carbon neutrality by 2050 is a binding goal by unanimous decision in the legislation by the Diet earlier this year. How much political resources he will use remains to be seen. Especially, biggest challenge is what to do on nuclear power. I hope advisors surrounding PM Kishida especially officials from METI will make effective advice to PM Kishida and PM Kishida will exercise his implementation capability.

Q3. How has the recent energy crisis in Europe, the EU's focus on decarbonization, and a carbon border adjustment mechanism affected Japan?

A. I am working on Japan-EU relationship and it is my belief that Japan should learn from and collaborate with the EU more. In spite of the recent energy price hike, the EU's basic position in its energy and climate policy looks unchanged. Japan and the EU have formed Green Alliance recently. The EU's Green Deal and the Fit for 55 package have a lot of implications to Japan. I think it is a good reference book. The proposed CBAM is a very interesting, strategic as well as tactical approach, which aims at avoiding carbon leakage and urging other countries to make sufficient efforts toward decarbonization. I have been saying to policy makers and industry people in Japan to have such kind of tools and commitments Japan should propose to the world. Another encouraging movement is re-recognizing the role of nuclear energy in decarbonization, typically seen in France and Easter European countries. There are countries which don't like nuclear power, but the EU, as a whole, with electricity networks connection will keep certain share of nuclear in its energy mix, which I

believe is a wise strategy.

Q4. COP 26 has just concluded, where do you see Japan's role in international energy and climate cooperation going from here, especially the US -Japan cooperation?

A. Personally, I hope the US-Japan cooperation will cover the following area:

1) Nuclear

Japan and the US are nuclear advanced countries with a lot of experience and technologies. We should further collaborate on technologies of next generation reactors and also on the back-end technologies. From Japanese point of view, information on how the states such as New York and Illinois have extended the lives of existing nuclear power plants is very useful.

2) Transition in Asia

Most of Asian countries such as India and ASEAN will keep economic growth, which needs secure and affordable energy. They are currently heavily dependent on coal. We, Japan and the US, should cooperate with them on practical “energy transition” in offering planning, technologies and finance. In this context, the role of natural gas as a bridging fuel, should not be denied. Natural gas emits lower volume of CO₂ than coal and will be transition to hydrogen.

3) Grid expansion and modernization

Energy use will be more and more electrified and more and more intermittent renewable power will be integrated in the power networks in the world. It should be promoted toward decarbonization. Then, the role of grid will be more and more critical. Both Japan and the US have experience in establishing grid networks and advanced technology including digitalization. I believe there is a lot we can collaborate for smarter and securer grid installment and operation, and demonstrate and offer to the world.

At the same time, trilateral cooperation between Japan, the US and Europe would be valuable and further pursued on those areas above.

Finally, I would like to say that I strongly hope the US government will not change its energy and climate policy especially for decarbonization, whoever will be the President.