Launch of the Japan 2050 Low Carbon Navigator: Navigating toward Low Carbon Societies

1 Context/Rationale

IGES and the National Institute for Environmental Studies (NIES) developed the Japan 2050 Low Carbon Navigator (a Japanese version of the UK 2050 Pathways Calculator). This is a low-carbon energy pathways simulation tool that helps policymakers, energy producers and consumers (including the public) to understand the energy and emission-related choices that Japan faces. It allows users to develop their own pathways combinations to achieve emissions reductions and ensure energy security. Against the backdrop of Japan's emissions reduction commitments and post-Fukushima energy security situation, the Low Carbon Navigator is expected to be a useful platform for engaging in dialogues on the challenges and opportunities of the future energy system and the responses to climate change. This session was designed to explain what the Low Carbon Navigator is and how it works. A panel discussion then followed, focusing on its potential use. Hironori Hamanaka moderated the session.

2 Objectives

This is the launch session of the web tool of the Japan 2050 Low Carbon Navigator (a Japanese version of the UK 2050 Pathways Calculator), jointly developed by IGES and the National Institute for Environmental Studies (NIES). The session not only introduced the Japan 2050 Low Carbon Navigator, but also shared lessons learnt from the UK 2050 Pathways Calculator. In the panel discussion, speakers from different areas such as education, non-governmental organisations, business group and research institute discussed ways by which the 2050 Low Carbon Navigator can be used and conveyed their expectations for this tool.

3 List of Speakers

[Opening Remarks]

Nobuhiro Kino Director, Office of International Cooperation, Global Environment Bureau,
        Ministry of the Environment, Japan

Richard Oppenheim First Secretary / Head of Climate Change and Energy Section, British Embassy Tokyo

[Moderator]

Hironori Hamanaka Chair of the Board of Directors, IGES

[Speakers]

Shuzo Nishioka Secretary General, International Research Network for Low Carbon Societies (LCS-RNet) and
        Low Carbon Asia Research Network (LoCARNet) / Senior Research Advisor, IGES

Xin Zhou Leader / Principal Policy Researcher, Green Economy Area, IGES

Jan Ole Kiso Senior Policy Advisor, 2050 Team, UK Department of Energy and Climate Change

[Discussants]

Kazuo Matsushita Senior Fellow, IGES / Professor Emeritus, Kyoto University

Naoyuki Yamagishi Leader, Climate and Energy Group, Conservation Division, WWF Japan

Miho Nakajima Assistant Manager, Urban Environment Section, Kawasaki Environment Research Institute

Masaharu Yagishita Visiting Professor, Graduate School of Global Environmental Studies, Sophia University

Shuichi Ashina Senior Researcher, Center for Social and Environmental Systems Research,
        National Institute for Environmental Studies (NIES)

[Closing Remarks]

Tsuyoshi Fujita Director, Center for Social and Environmental Systems Research,
        National Institute for Environmental Studies (NIES)

4 Key Messages

- The development of the Japan 2050 Low Carbon Navigator is a timely initiative. It is a handy and transparent tool that can help answer the fundamental questions of how the energy system can evolve over the coming decades and its impact on emissions, energy security, land-use, electricity systems, energy development and related costs. The user-friendly web interface makes it appealing and easy-to-use.

- The Low Carbon Navigator can be potentially used for a variety of purposes. It can provide a useful platform for engaging the policymakers, experts, producers as well as consumers into energy and emission-related debates focusing on Japan's long-term visions. It can also be a functional tool for educational purposes, which will revitalise the students so that they can learn and discuss about the otherwise difficult issue of climate change and the challenges for Japan.

- The underlying assumptions and levels settings under the current version of the Low Carbon Navigator may require further verifications from experts and stakeholders. In particular, the renewable energy potential appears to be relatively conservative and does not really reflect available studies from various sources. It will be a good idea to receive feedback from the audience (especially from experts) and to revise some of the assumptions when required.

- The Low Carbon Navigator will benefit from some supporting documents that users can consult to better understand the background of its development, model structure, as well as the calculation procedures.

5 Summary of Presentation

In his opening remarks, Nobuhiro Kino emphasised the significance of the Low Carbon Navigator in the current context of Japan. He explained that the Japan 2050 Low Carbon Navigator was developed jointly by the Institute for Global Environmental Strategies (IGES) and the National Institute for Environmental Studies (NIES) based on the Pathways Calculator developed by the UK Department for Energy and Climate Change (DECC). The Japan 2050 Low Carbon Navigator can show future forecast scenarios on energy supply and demand, and can predict the effects on GHG emissions, power systems, land use, energy resources development and so on. He expects that further collaboration and information exchange between the UK and Japan on climate change will be enhanced as Prime Minister Abe mentioned in the UK-Japan Joint Statement on Climate Change and Energy Cooperation.

Richard Oppenheim reiterated his support for the Low Carbon Navigator, explaining how his Embassy and UK DECC assisted the Navigator development team from the very onset. Referring to the Japanese Prime Minister's discussions on climate and energy cooperation with his UK counterpart in May 2014, he emphasised that the UK and Japan have been and should continue to work together to ensure a low-carbon future. He expects that the Low Carbon Navigator will be widely used in Japan in the same way it is in the UK.

Shuzo Nishioka addressed the relevance of the 2050 Low Carbon Navigator within the context of the limited time available for stabilising the climate at the national and global levels. Referring to Japan's 80% emission reduction targets, he stressed that Japan needs a drastic transformation to break away from a high-energy and carbon-dependent society. He vividly presented the current energy flows in Japan and explained various measures that Japan has and/or need to undertake to transform into a low-carbon society.

Xin Zhou introduced the Japan 2050 Low Carbon Navigator to the audience. Her presentation started with an overview of the Navigator, its background, the rationale of its development as well as the processes followed during the development, and what type of questions it can address. She demonstrated the web tool of the Low Carbon Navigator, explaining its structure and level settings, and how it works. She also presented several example pathways under different levels settings under various assumptions.

Jan Ole Kiso explained how the 2050 Calculator can work as a platform for energy-literate debate. He observed that in the context of the UK, the open-source, Excel model of the 2050 Calculator engages the experts, whereas the web tool informs the policymakers about likely outcomes under different scenarios. Following that, he addressed one of the core issues of the session: how the 2050 Calculator influenced UK's policy debates and formulation. Jan Ole Kiso summarised that the 2050 Calculator helps the audience to understand what matters in the overall debate concerning the future of the UK's energy and emissions, including the impacts of moving away from nuclear energy, the impacts of choices such as increased use of bioenergy, UK's grid decarbonisation targets, the role of gas, and impacts on energy security.

⑥ Summary of Discussion

In the panel discussion a group of representatives from academia, NGOs, business groups and local government discussed how they expect the Low Carbon Navigator to be used, and what they expect from this tool. Hironori Hamanaka, who facilitated the panel discussion, asked the discussants to try out the tool by making their own choices and inform the audience about the reason behind their selection. Kazuo Matsushita showed his choices on the demand side of residential, commercial and industrial sectors and stressed his selections reflect the importance of carbon pricing in achieving Japan's 80% reduction targets, while Naoyuki Yamagishi underscored the significance of renewable energy sources in achieving this target. Miho Nakajima focused on the demand side, in particular the transport. Masaharu Yagishita followed Japan's current government's expected plan of keeping the country's nuclear potential, whereas Shuichi Ashina combined all the choices made by the panellists to make one low-carbon pathway and stressed on the society scenarios to keep the balance between supply and demand sides.

The second part of the panel discussion centred on the utilisation of the Low Carbon Navigator. A number of important insights came from the panellists. Kazuo Matsushita said that he believes the Low Carbon Navigator can serve as an educational tool which will revitalise the students in the debates on climate change. Replying to Hironori Hamanaka's question about its use at the local level, Miho Nakajima also echoed Kazuo Matsushita's proposal that it can be very useful for environmental education at the local level. Naoyuki Yamagishi expressed his views from an NGO perspective, where he held that the Low Carbon Navigator will help in discussion and debates particularly about renewable and other energy-related scenarios. However, he also expressed his doubts about the low level of potential for renewables set in the current version of the Navigator. Masaharu Yagishita expressed his belief that it can be a useful tool for promoting participatory approaches in energy-related debates. Shuichi Ashina observed that the next step can be to develop a local level Navigator for Kawasaki City. Hironori Hamanaka thanked the panellists for their interesting and useful ideas about the use and further improvement of the Low Carbon Navigator.

Tsuyoshi Fujita provided the closing remarks of the session. In his remarks, he applauded the Low Carbon Navigator, mentioning that its simple and easy-to-use visual interface will allow for engaging the general public in energy-related discussions, which is very important for Japan's journey toward a low-carbon society by 2050.