October 8, 2020

ICEF 2020 Statement from the Steering Committee

0. Tokyo Beyond Zero Week

We are aware that it is necessary to call for a holistic and systemic approach to tackle challenges of energy and climate change, inviting collaboration among all relevant stakeholders. Sharing global leading experiences or exchanging opinions through conferences, as ICEF does, would help people to realize and identify our current position and possible future options. To this end, we welcome the" Tokyo Beyond Zero Week " organized by the Japanese Government, that seeks to enhance international discussion in this policy area, incorporating 6 conferences to consider every possible pathways to accelerate a virtuous cycle of environment and growth; technological and societal innovation aspect (ICEF), finance (TCFD) and international collaborations of R&D institutions (RD20), as well as special focus on a hydrogen based society (Hydrogen Ministerial), on the development and deployment of carbon recycling technology (International conference on CR) and on a decarbonized use of LNG (LNG producer consumer conference).

1. Preamble

The seventh annual meeting of the Innovation for Cool Earth Forum (ICEF 2020) was held online on October 7 and 8 with the preceding sessions from September 28 to October 2, attracting many real-time viewers; the number of peak concurrent viewers stood at (NUMBER). More than (NUMBER) people from government, international organizations, industry, and academia, from approximately (NUMBER) countries and regions, participated in this first-ever online event. The theme of this year's forum was "Action toward "Beyond Zero" emission society in light of COVID-19, with a focus on gender equality."

The world is currently facing an unprecedented situation caused by the COVID-19 pandemic. Even during these unusual circumstances, climate change, amongst others, remains a pressing issue for the world. Along with governments' initiatives to restore their economies, a virtuous cycle of heading to the environment and growth should be expeditiously developed, while taking note of IEA's Sustainable Recovery Plan. To this end, we issue the following statement addressing what approaches are needed and how they should be implemented:

2. Society changing significantly through the unprecedented situation

Due to COVID-19, global CO_2 emissions are projected to be reduced by 8% on a year-on-year basis in 2020. This annual reduction rate is almost equivalent to the rate necessary for the emission pathway with 1.5 ℃ global warming. As such, COVID-19 has made us aware of how daunting this 1.5 ℃ pathway is, since obviously we cannot continue to withstand the economic slow-down and inconvenience in our daily life as experienced now. In this context, we should once again clearly recognize the utmost importance of innovation in addressing climate change.

Recently, the Japanese government formulated the "Environment Innovation Strategy" in order to create, commercialize, and spread progressive innovations in the energy and environmental fields through international cooperation. It is essential to make a transition for the world including emerging countries, to establish a low-carbon society for tackling climate change, and it requires robust relationships across countries, various sectors covering public, private, and academia. The value of the strategy is summarized in the following sentence: the Environment Innovation Strategy aims to establish innovative technologies that enable the reduction of global GHG emissions toward carbon neutral and further reduction of the accumulated atmospheric CO_2 level, "Beyond Zero" by 2050.

In addition, there is no doubt that women's participation will play a huge role in the promotion of innovations. As COVID-19 accelerates a wider use of IT equipment, which is changing our working style dramatically, it could further empower female participation in various activities from home**.** Empirical studies also suggest that climate change is not gender neutral, showing that the higher female participation, the greater performance in addressing climate change. It is of great interest to see how women's participation will support efforts to tackle climate change. We should commit to the development of mentoring networks suitable for women's skills and the promotion of education for women in developing countries.

Finance for innovations matters. All available opportunities, including stimulus packages, should be used for fund raising measures such as public/private investment, funding from partner companies and motivation for self-investment through internal carbon pricing. We are pleased to see the increasing support of business communities for climate-related financial disclosure based on the TCFD's recommendation. Enhanced transparency is expected to lead to effective communication between business and financial sectors, and thereby to improve the market and investment environment. And as for COVID-19 recovery, it is necessary to promote investment for sustainable structural transformation in the energy system.

Bearing in mind the possible synergy between gender and climate change, it would be worth considering an idea of bridging gender investment and climate change investment, in order to support further effective actions and decisions by companies towards a society that produces less GHG emission.

3. Discussions and findings from the concurrent sessions

During ICEF 2020, we invited participants to discuss these topics in the three plenary sessions as well as 10 concurrent sessions, which were set up following the "Environment Innovation Strategy".

(1). Energy Transformation

- Hydrogen is an indispensable energy carrier to decarbonize or lower carbon emission in energy consumption. Throughout its entire supply-chain, we should drive technological development as well as policy-making concerning production, storage, transportation and utilization. We should also make substantial progress in international cooperation for deployment of hydrogen infrastructures on a global scale through concerted efforts of both public and private sectors. When countries plan sustainable recovery packages for COVID-19, they should focus on research, development, demonstration and deployment (RDD&D) of hydrogen infrastructure including storage and transport in relation to the deployment of CCS/CCUS.
- Demand for renewable energy is growing year by year, thanks to its significantly reduced cost as well as the strong appeal to investors and corporate image improvement. Some emerging countries are also interested in power transmission systems suitable for the utilization of renewable energy. Governments and power companies will need to adapt flexibly to new environments by adopting digital technology and infrastructure development, in particular in energy end use where also users' behavior and demand are essential.
- With regard to nuclear power generation, companies from various countries including ventures are making steady progress in research and development on advanced reactor technologies as well as small modular nuclear reactors (SMRs). Governments should establish long-term policies/R&D guidelines and provide support to companies including ventures for accelerated development while ensuring safety.

(2). Transportation

- Demand for transportation in urban areas has plummeted due to the COVID-19 pandemic, while home office and web conferences have become more popular. People are increasingly driving cars or use bicycles to avoid public transportation. Demand for freight transport has declined with the economic downturn and increased with e-commerce. These changes in consumer behavior give birth to new services and require the development of new technologies to curb emissions in the supply chains.
- All these changes represent a concern for sustainable transport development. Measures should be in place to restore passengers' confidence on public transport through (1) providing information/data to passengers on the operation of public transport, and (2) encouraging strategies for peak shaving in order to satisfy the rules for social distancing. It is important to align short-term stimulus measures for public transport infrastructure development with the long-term decarbonization goal.

(3). Industry

- Carbon recycling is an umbrella concept that describes many different processes and products. Some of these processes and products have the potential to contribute to achieving net zero emissions by displacing fossil fuels or storing carbon dioxide for the long-term. Life cycle analysis of the greenhouse gas emissions associated with any product made from recycled carbon is especially important. Much more R&D and policy support is needed to fully develop the potential for carbon recycling.
- We need to enhance circular economy implementation to realize sustainable consumption trends/lifestyles, and to utilize a life cycle assessment to grasp the environmental impact of the entire life cycle. To this end, the model of circular economy shall be established, and the barriers of different sectors need to be transcended so that people switch to reparable or reusable products.

(4). Cross-sectoral

- The ocean has enormous potential to mitigate environmental issues and grow our economy through ocean renewable energy, aqua-culture, coastal tourism, ocean mineral resources, and so on. Particularly, the off-shore wind market has been growing rapidly. For further acceleration, market competition, public-private-cooperation, and international cooperation will be key.
- Climate change is a global issue requiring countermeasures which meet the needs of emerging countries. In this regard, it is essential to advance international dialogues to promote innovations based on the local situation, and also strengthen relationships between both private and public sectors, and academia. Knowledge should be shared. Promotion of private finance will be also key to achieve sustainable economic development in emerging countries.

(5). Agriculture, forestry and fisheries/Carbon Sinks

- Agriculture in emerging economies requires leapfrog technologies to tackle the challenges of ensuring food and nutrition security for a growing population. The availability of renewable energy and its investments will also be crucial for supporting those technological development. Meanwhile, in developed countries, not only do we need further implementation of advanced agriculture technologies to effectively enhance food productivity, but we also need to change our lifestyles, including reducing wastage and food loss. The selection of production methods using low emission technologies will be essential in achieving sustainable agriculture.

- Technological development relating to carbon sequestration in cropland, CO_2 absorption by forest, and blue carbon as well as GHG emission reduction in agriculture, forestry and fisheries also need to be advanced.
- Technologies to capture CO2 released into the air (such as DAC) and either use or fixate that CO2 are attracting attention. Commercializing these technologies will require new investment in science, technology, and projects - all would benefit from a long-term roadmap, shared internationally and funded effectively.

4. Action for Beyond Zero and Expectations for Women's Participation

A virtuous cycle of environment and growth is essential when we tackle climate change. This remains the case even under the unprecedented situation caused by the COVID-19 pandemic. The Environment Innovation Strategy is a comprehensive action plan for this concept. The question is how we should implement it and make advances towards "Beyond Zero". Industry, government, academia, and investors must come together to facilitate research and development and investment, with lessons learnt from this annual meeting, noting that women' participation will further accelerate our efforts.