



Leveraging Diversity to Drive Innovation

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I was appointed president of the Research Institute of Innovative Technology for the Earth (RITE) in June 2021 and would like to take this opportunity to share my thoughts.

For over 30 years since its establishment, RITE has engaged with climate change solutions, including carbon dioxide capture and storage (CCS), biorefinery, and scenario analyses for climate change responses. During this time, engagement with climate change has gained much momentum at home and abroad, and I am confident that RITE has been of service to this development.

A recent major event in Japan pertaining to climate action was the government's notification to the United Nations in October 2021 of the country's Nationally Determined Contribution (NDC) under the Paris Agreement. In its NDC, Japan made the very ambitious pledge of reducing its greenhouse gas emissions to 46% below FY2013 levels by 2030 to achieve carbon neutrality by 2050. At the 26th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP26), not just Japan but many other countries raised their climate action targets to keep up with the goal of staving off temperature rises exceeding 1.5°C. I feel that these developments put ever higher expectations on RITE and that RITE must meet the expectations by advancing its research further. Carbon dioxide capture, utilization and storage (CCUS) and biotechnology are seen as very promising means of achieving carbon neutrality, and I believe they have entered a new phase toward practical application.

Research, however, must proceed one steady step at a time, and there are no shortcuts to a goal. There are numerous different technologies for achieving the goal of carbon neutrality set by many countries, including Japan. We must also remember the importance of electrification and decarbonization of electricity; hydrogen, CCUS, and other energy-related measures; and measures for agriculture, forestry, and fishing industries. For industries or areas where greenhouse gas reduction is difficult, we need to also study direct air capture (DAC) technologies for recovering CO₂ from the atmosphere to set off emissions. In addition to technological solutions, social innovation plays a significant role as well.

International developments warrant close attention. Japan's announcement during COP26 to drive "zero-emission thermal generation" through hydrogen and ammonia use earned the ironic Fossil of the Day Award, as did Norway for promoting both Norwegian gas and CCS and France for announcing the construction of new nuclear power reactors. But zero-emission thermal power, CCS, and nuclear power are all important climate change responses. Narrowing available options by excluding specific technologies will pose a major hindrance to attaining the challenging goal of carbon neutrality.

The fight against climate change is configured for burdens to be borne locally but benefits to be shared globally. As such, creating situations that would allow major countries to pull out, or excluding specific technologies, will damage international cooperation and invite the self-destruction of climate action.

Crucial to addressing climate change and other issues requiring long-term worldwide commitment is to maintain cooperation and integrity while acknowledging technological and cultural diversities. The latest innovation policies often point out the importance of ecosystems because harnessing diversity by bringing together different sectors—ventures and businesses, for instance, and industry and academia—is considered conducive to innovation.

RITE likewise looks forward to driving innovation in climate action by harnessing diversity.