

Leaders Statement

We, the leaders of the "Research and Development 20 for Clean Energy Technologies" (RD20) member institutes, met together virtually on 8 October 2021 to discuss the facilitation of international collaboration towards achieving carbon neutrality, as part of the 3rd RD20 international conference hosted by Japan's National Institute of Advanced Industrial Science and Technology (AIST).

This statement summarizes our shared understanding regarding the urgency to significantly increase international collaboration, in order to accelerate Research and Development (R&D) to enable the clean energy transformation that is required to mitigate climate change. Members recognize and support the need to accelerate the deployment of current technologies and the development of future technologies, as well as to increase fundamental research that addresses critical challenges and important issues.

Definition of terms

In this Statement, the definition of terms is as follows:

Conference: RD20 conference.

Member: a member institute participating in the RD20 conference.

Framework

- 1) RD20 is an important framework for a global approach towards achieving carbon neutrality. We will leverage the RD20 framework to strengthen, explore, and develop new partnerships among stakeholders, including industry, government, and academia, to advance and support the R&D of clean energy technologies. RD20 can build on, yet be distinct from, existing international frameworks and mechanisms which include Mission Innovation.
- 2) There is a strong need for increased and sustained funding for international collaboration, including joint funding for bilateral and multilateral collaboration.
- 3) Each Member may take various approaches toward its support for achieving carbon neutrality, depending on natural, social, political, and economic environments. We will complement regional approaches, particularly in emerging technology areas, by developing knowledge, experience and technologies.
- 4) Capacity-building is essential to the sustainable development of technology and industry. This

includes the development of both human resources and research facilities. We recognize the importance of supporting capacity-building in emerging technology areas through education, training, and exchanges of knowledge and expertise by researchers. This includes developing joint workforce and training programs, engaging in personnel exchanges, and sharing clean energy curricula to achieve broad inclusion and diversity in the workforce of the future.

- 5) We recognize the important role of intellectual property in technology development, and the need for proper management within the framework of RD20.

Communication (Awareness)

- 6) To achieve global carbon neutrality, we will raise awareness of climate issues and solutions among a broad range of economically, socially, and culturally diverse communities. We will do this through dissemination of reliable information, new ideas and technologies for decarbonization, and by establishing intellectual infrastructures such as consistent approaches for measuring carbon impacts and climate issues.
- 7) To enhance mutual understanding among Members, we will utilize public relations and communication channels, including international forums, workshops, and knowledge sharing on digital platforms..

Moving Forward

- 8) We will pursue a number of mechanisms to enhance international collaboration as follows:
 - Develop standards and common metrics for analysis and energy technology impacts, including a common language for key concepts such as carbon footprint, life cycle, and sustainability
 - Support energy-focused summer schools and related forums
 - Host joint workshops on key topics with impactful outcomes, such as position papers, publications on status/needs, roadmaps, and common views
 - Conduct roadmapping activities which include building on Mission Innovation and other roadmaps
 - Collect and share information summarizing on-going projects and achievements, existing collaborations, agreements, funding opportunities, collaborative research facilities and infrastructure, and lessons-learned from past collaborations.
- 9) To realize carbon neutrality, various approaches to utilizing clean energy technologies, and system changes by various sectors and regions should be considered. Technical sessions in

the Conference highlighted prioritized issues and approaches. A wide range of technology options and systems will be needed, including but not limited to, renewable energy generation, storage and integration; hydrogen; carbon capture, storage and utilization; and next-generation energy management systems.

- 10) More collaborative R&D projects are needed to enhance mutual understanding in specific research subjects. Institutions are encouraged to look for projects that can yield long-term collaborations. We recognize that the Taskforce activity proposed in the 2nd Conference was a good platform for creating, prioritizing and incubating joint projects among Members, and believe this could be expanded for broader participation and coordination in focused areas.

Additional Comments

This statement refers solely to discussions regarding the furthering of RD20 goals, and is not intended to be a contractual agreement for the exchange of proprietary information. Any specific issues derived from the cooperation within the RD20 framework, including appropriate details concerning financial arrangements, treatment of confidential information, allocation and protection of any rights, and establishment of obligations, should be separately agreed upon in writing among relevant Members. We acknowledge that nothing contained in this statement is legally binding.

This statement will be updated and modified annually at the Conference.