

Tokyo Zero-emission Innovation Bay

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< **Closing Remarks** >

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I am YOSHINO Akira, Director of the Global Zero Emission Research Center (GZR), AIST. Thank you very much for taking the time out of your busy schedule to participate in the Second Zero-emission Bay Symposium, the Zero-emission Hub Forum. I would also like to take this opportunity to thank all of you for your greetings and speeches today, and to thank President, Professor KASHIWAGI.

In the consideration of the recent COVID-19 situation, in-person participation was limited to our members, and though it has been held online, but many people have attended. I would like to express my gratitude once again.

Carbon neutrality is an issue that the whole world is looking for a solution to. It's a big challenge. The "Darwinian Sea", the biggest barrier to commercialization of innovation following the "Devil River" and "Death Valley" is a situation where markets around the world are always waiting for a solution. So, carbon neutrality is an extremely attractive business opportunity for companies. It is also a great opportunity for researchers to achieve results that can be utilized in the international community. Researchers who take advantage of this opportunity to find a solution that the market is waiting for, and the companies that put it into practical use will undoubtedly be praised and respected worldwide.

Today's symposium was held by representative R&D hubs in Japan to get together aiming to achieve carbon neutrality. 4 representatives of each organization reported on the status of their activities.

1. Activity Report of the Zero-emi Vision Study Working Group
2. Large-scale CCS Demonstration Project in Tomakomai
3. The Background and Future Outlook of Institutional Technology, University of Tokyo
4. Battery Development under NIMS-ABC COI-NEXT Project, NIMS

Under the leadership of President KASHIWAGI, a panel discussion was also held. I expect that all participants could get inspiration that went beyond simply gathering information. As a Zero Emission Hub in addition to the Zero-emission Bay that was reported today, I believe this includes AIST/GZR, of which I am the director.

Now I would like to introduce GZR. GZR was announced by then Prime Minister Abe at the Green Innovation Summit in October 2019. It was established in January 2020 with the aim of embodying the establishment of a “Global Zero Emission Research Center”. GZR is formulated by the Japanese government’s “Environment Innovation Strategy”. Solving the global issue of the Earth’s climate change, to bring together the wisdom of the world, to develop basic science and industrial technology. Our philosophy is to realize the ET Revolution, that is, the revolution of environment & energy technology.

In April 2021, a research base was established at AIST Tsukuba West. Artificial photosynthesis, hydrogen, energy device, carbon recycling, etc., 10 research themes have been brought together to further strengthen R&D activities. Specifically, to make renewable energy the main power source, as well as in renewable energy storage, transportation, and carbon recycling, and the development of innovative biomass that significantly increases carbon fixation, “BECCS” which combines biomass utilization with CO2 storage and Bio-CCS.

In addition, we are working on negative emission technologies such as natural minerals of CO2 and fixing technology. Many research teams and researchers are also participating in the government’s Green Innovation Fund Project. A collaboration system with many of the companies participating today is being prepared. However, we have set goals for achieving carbon neutrality by 2050 and even 2030. In order to clear considering the time of subsequent social implementation, there is not much time to spend on R&D. Recently, based on these results, I scolded and encouraged the GZR members.

The role of GZR is not limited to these R&D activities. Strengthening collaboration with various institutions in Japan and overseas is also an important mission. So at first, we organize the international conference RD20, which aimed at building the momentum for international joint research achieving carbon neutrality among major research institutions in G20 countries, such as NREL of the US, and Fraunhofer (ISE) of Germany.

At the 3<sup>rd</sup> RD20 held in October last year, in addition to task force activities aimed at structuring international joint research projects, we have compiled a Leaders’ Statement on our determination and concrete initiatives to strengthen collaboration among participating organizations. As a research institute supporting Japan’s industrial sector, AIST fully supports companies that are trying to create new innovations, and RD20 will also appeal to the world. So that the results here can contribute to the early realization of carbon neutrality, AIST will continue to work on this issue.

We will be accepting applications for participation in RD20 to be held in October this year, so please be aware of that. Another important mission is to create a collaborative space for domestic industries, research institutions and universities, etc. as an innovation hub. For this purpose, Tokyo Zero-emission Innovation Bay, Zero-emission Bay was established in June 2020. Zero-emission Bay holds seminars for

members at least once a month, it is not uncommon for more than 100 people to participate.

When we held the seminar under the theme of Tomakomai CCUS in May, there were 305 participants, the largest number ever. In addition, four companies, ENEOS, Tokyo Gas, Tokyo Electric Power and Nippon Steel, started activities last year.

As noted in today's report by the Zero-emi Vision Study Working Group, with the participation of an additional 11 companies, the result of the discussions held by the 15 companies were presented as a quantitative vision of carbon neutrality, using Tokyo Bay as an example.

We also created a publicity version of the Zero-emission Bay Map, which is our main activity of disseminating information, and we were able to present it to the world at the COP 26 Japan pavilion last November. I would like to express my gratitude to all of our members for their cooperation to date, and I hope that we can work together to create new partnerships and collaborations through the further utilization of Zero-emission Bay.

We welcome memberships at any time, so if you are interested in expanding your zero-emission and carbon neutrality, we hope you will consider to becoming a member.

We hope that today's symposium will prove an opportunity for Zero-emission Bay to further invigorate its activities under the leadership of its President KASHIWAGI, to promote cooperation and collaboration among all of you, and overcome the difficult challenges of achieving carbon neutrality.

I would like to conclude the meeting. Thank you very much for your time today.