Environmental Action with a Particular Focus on Climate Change

To date, NEC's environmental management initiatives have focused on using ICT to reduce the amount of CO_2 emissions from customers and society. However, we have now expanded our efforts to incorporate a wider range of issues in preparation for the various impacts of climate change. We are thereby providing value with our climate change countermeasures from the perspectives of both "mitigation" and "adaptation." In fiscal 2018, we began assessing the impact of climate change in terms of both risks and opportunities, in line with the recommendations of the TCFD.* Subsequently, in fiscal 2019, we positioned "environmental actions with a particular focus on climate change" as one of our nine "materiality"—priority management themes for ensuring the sustainable growth of NEC. We are broadening our activities through coordination among our business divisions to promote future business expansion.

* TCFD: Task Force on Climate-related Financial Disclosures

Risks and Opportunities

The TCFD recommends we evaluate the issues related to climate change-induced risks and opportunities, such as transition risks arising from changes in regulations and markets, and physical risks associated with disasters and weather phenomena. As NEC has had the experience of having to suspend plant operations in Thailand due to flooding in the past, we are strengthening our response measures, including earthquake countermeasures, to address physical risks from the standpoint of our business continuity plan (BCP). Also, on the issue of carbon pricing, the introduction of which is being considered in various countries, we assess the potential impact it would have on business performance when such systems are adopted. As for opportunities, our current ICT-driven business lineup features a wealth of products, software, and services that provide corporate opportunities for climate change engagement. As such, we believe we can contribute widely to global climate change response initiatives through our business activities.

Overview of Risks

Type	Time Frame	Summary	Main Initiatives
Physical risk (acute/chronic)	Short term	Increase in business expenditures for the impact of abnormal weather and countermeasures	Reevaluate data center disaster countermeasures based on actual records of disaster damage in Japan, and strengthen countermeasures such as capital expenditure if necessary.
Transition risk (Market)		Decrease in earnings caused by declining demand for products and services due to an increase in concerns among stakeholders	Acquire SBT designation and promote initiatives to expand renewable energy to achieve them. Periodically survey major customers' climate change countermeasures.
Transition risk (government policy and laws)	Medium term	If NEC fails to achieve goals due to an increase in greenhouse gas emissions pricing due to the introduction of carbon pricing, it will incur expenses	Discuss and decide on countermeasures to minimize risk in the Business Strategy Council. Expand efficient use of energy and introduction of renewable energy towards achieving the SBT goals.

For further details on our disclosure of information based on the TCFD recommendations, please refer to our Sustainability Report 2020 **"Feature: Response to Climate Change and the TFCD."**

Aiming to Reduce NEC Corporation's CO_2 Emissions to "Effectively Zero" by 2050

In July 2017, we formulated our climate change countermeasure guidelines up to 2050 in order to strengthen NEC's sustainable management base and promote creation of a sustainable society together with our customers. In accordance with these guidelines, we aim to reduce CO_2 emissions associated with NEC's business activities (Scope 1 and Scope 2) to effectively zero by 2050.

Course of Action for Climate Change Towards 2050

NEC's Initiatives Toward Achieving the SBTs

In December 2017, NEC committed to making science-based targets (SBTs) for its greenhouse gas emission reduction targets, aiming to achieve the so-called 2°C target of the Paris Agreement. Subsequently, these targets were designated as SBTs by the Science Based Targets Initiative on October 31, 2018. In fiscal 2020, our targets were categorized under the new standard, "well below 2°C."

The NEC Group's SBTs

Scope 1 + 2*1	Reduce greenhouse gas emissions by 33% compared with FY2018 by FY2031
Scope 3*2	Reduce greenhouse gas emissions from products sold by 34% compared with FY2018 by FY2031

SCIENCE BASED TARGETS
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

*1 Total of Scope 1 (direct greenhouse gas emissions from sources that are owned or controlled by the Company) and Scope 2 (indirect greenhouse gas emissions from consumption of purchased electricity, heat or steam)
*2 Scope 3 (other indirect emissions covering corporate upstream and downstream processes not included in Scope 1 + Scope 2)

CDP* Climate Change "A List"

NEC's climate change initiatives and information disclosure in fiscal 2020 were recognized by its listing on the "A List" of companies holding the highest rating in the CDP* "Climate Change" division.

* CDP: An international non-profit organization that operates a global information disclosure system for investors, companies, municipalities, and countries, and regions to manage environmental impacts. In fiscal 2020, over 8,400 companies worldwide disclosed information through the CDP.

Dialogue with External Experts Regarding Environmental Action with a Focus on Climate Change

Since 2016, we have continued to engage with our stakeholders and to hold dialogues with external professionals.

We explain our environmental activities to gain their understanding. Also, we learn from experts' insights and their information on ESG investors' needs in order to improve our initiatives and information disclosure.

In March 2020, we held discussions with external professionals with expertise in sustainable management, information disclosure, and responsible investment, to address the question: What is necessary to make "environmental action with a particular focus on climate change" into a core driver of sustainable growth? The dialogue session was attended by the Executive Vice President and CDO of NEC Corporation, the Senior Vice President and CSCO (executive officer in charge of promoting environmental management), and officers from the Environmental Promotion Division and Corporate Communications Division.

Going forward, we will further enhance our activities by taking into consideration the opinions of those experts, who advised us to: "visualize" targets for environment-related activities, present a "long-term vision" for the future, focus on other environmental issues outside of climate change, such as circular economies, and that they expected NEC to show leadership in creating new markets.

Meeting with experts

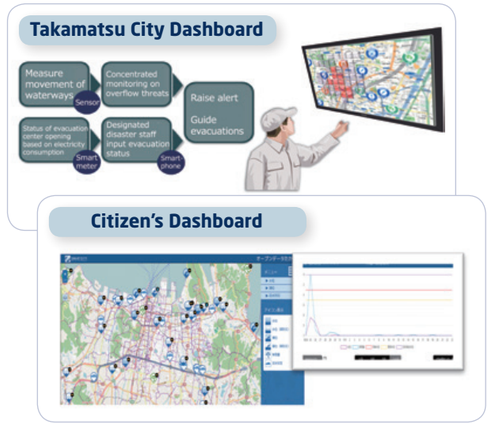
Photograph from left: **Peter D. Pedersen**
Co-Founder of Next Leaders' Initiative for Sustainability (NELIS)
Ayako Sonoda
Representative Director of Cre-en Inc.
Toshiyuki Imamura
Managing Director, Head of Responsible Investment, Nomura Asset Management Co., Ltd.

For further details, please refer to our Sustainability Report 2020
"Environmental Action with a Particular Focus on Climate Change"

Example of Climate Change Countermeasures: Disaster Prevention Initiatives at Smart City Takamatsu

NEC has been promoting the Smart City Takamatsu project in collaboration with Takamatsu City since fiscal 2018. Within the project's framework for leveraging ICT, IoT, and other advanced technologies for urban development, we are also pursuing initiatives for rapid information sharing to support disaster prevention across wide areas. Under this initiative, various disaster prevention data that had existed separately are collected and aggregated, then converted into a standardized form of unified data so that wide area disaster prevention information can be integrated and displayed on the Takamatsu City Dashboard. This leads to faster information sharing among disaster response personnel and multiple local governments by helping them to quickly gain a comprehensive understanding of circumstances.

Furthermore, we are also directing our attention to flood control support measures. Recent torrential rainfall has caused flooding of small and medium-sized rivers in urban areas, resulting in heavy damage. To address this, we are conducting research on river water level prediction using AI, which is expected to contribute to ensuring earlier evacuations of residents in affected areas in the future.

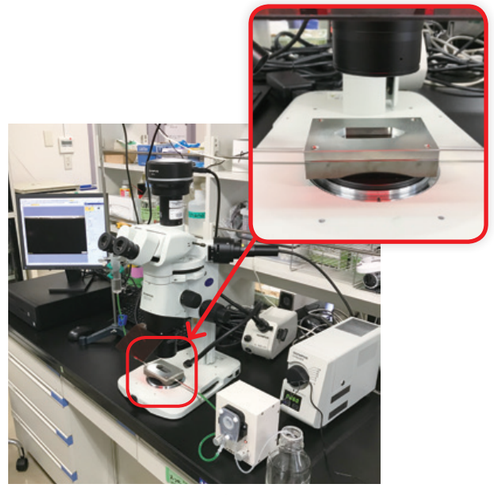


Example of Resource Recycling: Development Support for AI-based Analysis Technology for Microplastics

The problem posed by plastic waste has grown into a global environmental issue. In some cases, the failure to properly dispose of plastic waste results in the plastic being carried away by the wind and rainwater into rivers, and eventually into the oceans. The plastic that has entered the oceans is exposed to ultraviolet rays and other elements that in due course break it down into small particles of 5 mm or less called microplastics. These microplastics continue to exist in the oceans for a considerably long time without decomposing.

With our ICT solutions, NEC is supporting the Japan Agency for Marine-Earth Science and Technology (JAMSTEC) in the development of microplastics-related technologies. Specifically, we are building a system for automatically measuring the size and classifying the shape of fine microplastics through observation with a fluorescence microscope and by utilizing AI. In the future, it is expected that such analytical technology will become established and see widespread deployment, and advancements in the elucidation of the actual situation of marine microplastics will lead to assessments of specific environmental pollution risks, reviews of emissions regulations, and actions in other areas.

Note: The above activities were carried out with support from the Environmental Research and Technology Development Fund (SII-2) of the Environmental Restoration and Conservation Agency



Data on microplastics is acquired by fluorescence microscopy imaging.