Initiatives in Production and Office Sites

Environmental Consideration in the Value Chain

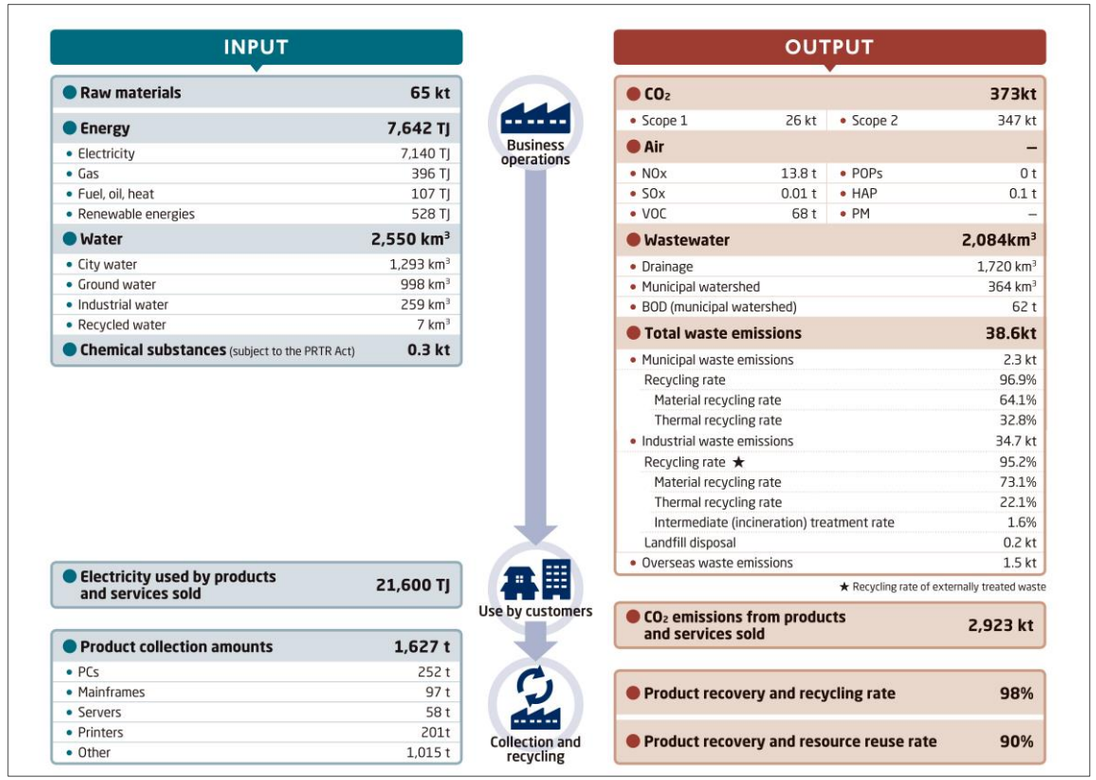
NEC takes steps to reduce environmental impacts along the entire value chain, from purchasing, procurement and R&D to product manufacture, usage, disposal, and recycling. We use ICT to measure the environmental burden at each location regularly, and publish this. In addition, we set targets for reducing the various environmental burdens for each location, and systematically conduct measures to minimize them.

Purchasing & procurement	• Green procurement policies • Green procurement guidelines • Complying with the RoHS directive • Complying with the REACH regulations
R&D	• Using bioplastics in products
Manufacture & sale	• Development of environmentally friendly products • Examples of environmentally friendly products and services • Reducing greenhouse gas emissions • Reducing waste and properly processing waste materials • Reducing the use of chemical substances • Reducing water consumption • Responding to environmental risks
Use	• CO_2 emissions in the product use phase
Disposal & recycling	• Product collection and recycling

Environmental Burden from Business Activities

Material Balance

The inputs of energy and raw materials for business activities and the outputs of environmental burden substances arising from these activities are managed as a material balance. We aim to reduce the environmental burden across the entire supply chain by managing the material balance not only for the Company itself, but also for the lifecycle of the product.



Material Balance

Collection and Verification of Data

Environmental data for plants and offices worldwide are compiled using NEC's proprietary environmental performance management solution, GreenGlobeX.

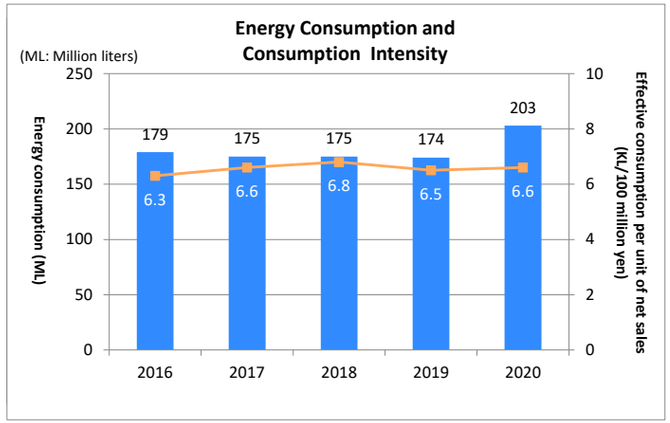
Energy

Energy Consumption

NEC is taking steps to prevent global warming by targeting year-on-year reductions of 1% in energy consumption intensity in logistics.

In fiscal 2020, the amount of energy consumption was 203 ML. This increase was due to a wider scope of companies worldwide included for data collection than the previous fiscal year.

In fiscal 2020, the NEC Group continued to implement initiatives to reduce energy consumption at all of its business sites.



Energy Consumption and Energy Consumption Intensity

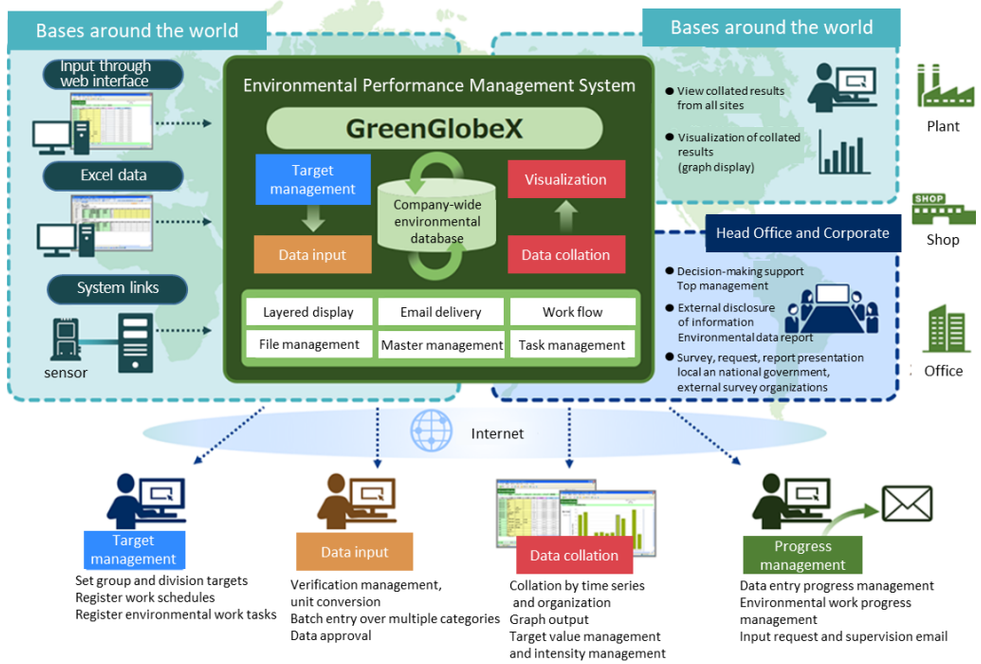
NEC's Environmental Solutions

Environmental Performance Management Solution GreenGlobeX

NEC provides the "GreenGlobeX" cloud service as an efficient management solution for the environmental performance of corporate plants and offices throughout the world.

Central management of environmental data collected globally not only reduces the operation load, but also complies with statutory reporting obligations (data collection, collation, and report preparation), under the Act on the Rational Use of Energy and the Act on Promotion of Global Warming Countermeasures. The service is ready for global application, with three-language interface options in Japanese, English, and Chinese, and a unit conversion function. Currently around 30 companies are using the service, which is helping them to achieve efficient collection of environmental data.

GGX conceptual image



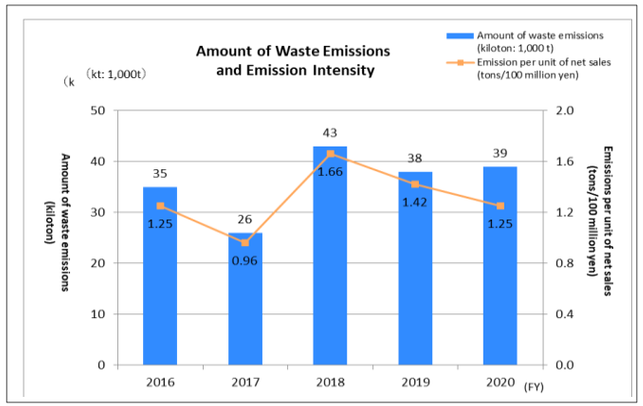
Environmental Performance Management Solution

Waste and Pollution

Waste Emissions and Emission Intensity

In fiscal 2020, our waste emissions (both general and industrial waste) amounted to approximately 39 kilotons. This increase was due to a wider scope of companies worldwide included for data collection than the previous fiscal year. If data had been collected within the same scope as fiscal 2019, waste emissions for fiscal 2020 would have decreased by 4.7% year on year.

To ensure increased thoroughness in processing waste, NEC performs regular site inspections at plants where waste processing is outsourced to ensure that the outsourced industrial waste is processed correctly.



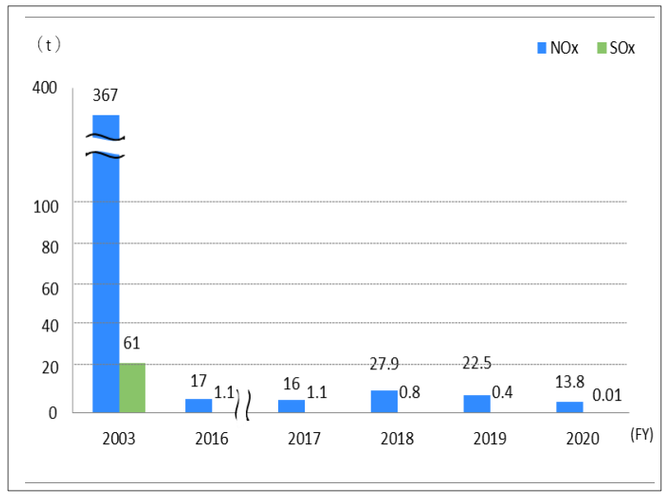
Amount of Waste Emissions and Emission Intensity

	FY2016	FY2017	FY2018	FY2019	FY2020
Amount of waste emissions	35,295 t	25,853 t	42,593 t	38,318 t	38,318 t
General waste	2,771 t	2,198 t	2,251 t	2,156 t	2,156 t
Industrial waste	29,060 t	20,225 t	36,611 t	35,030 t	35,030 t
Specially controlled industrial waste	3,035 t	3,113 t	3,380 t	633 t	633 t
Overseas waste	428 t	317 t	351 t	499 t	499 t

Breakdown of Waste Emissions

NOx and SOx Emissions

We lowered the total sulfur oxide (SOx) emissions to 0.01 tons in fiscal 2020, a reduction of 99% compared with fiscal 2003. We also lowered our nitrogen oxide (NOx) emissions to 13.8 tons, a reduction of 97% compared with fiscal 2003.

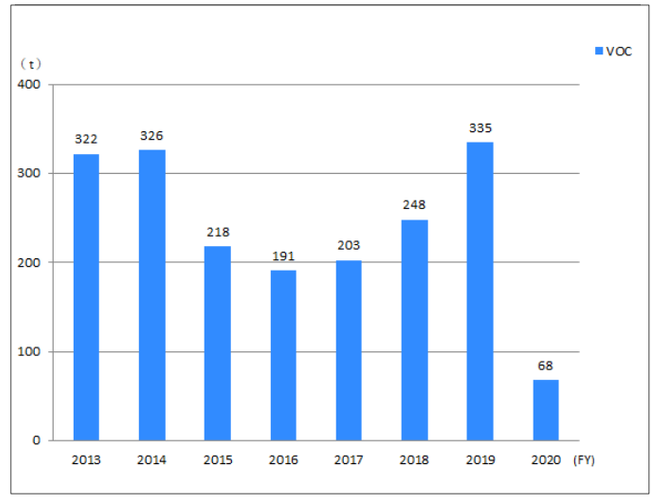


NOx and SOx Emissions

VOC Emissions

Volatile organic compound (VOC) emissions in fiscal 2020 were 68 tons, a reduction of 79% compared with fiscal 2013.

Emissions were significantly reduced following a reorganization of the Group's production-oriented companies.



VOC Emissions

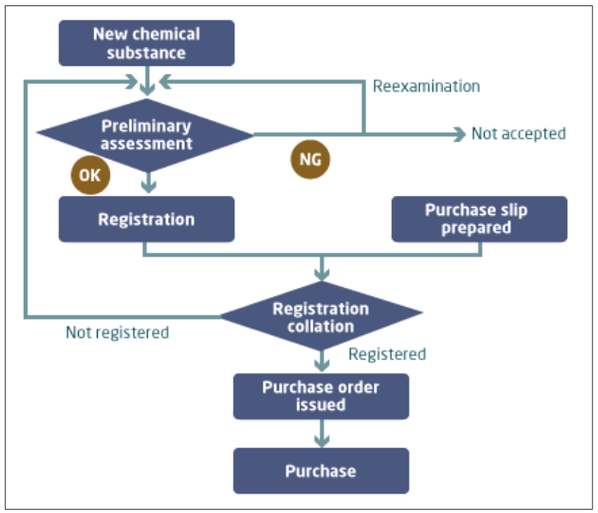
Chemical Substances

NEC carefully examines environmental impact and safety in all phases of handling chemical substances, from receipt and use to disposal. NEC takes all possible measures to reduce consumption of chemical substances and to replace harmful substances with safer ones.

Preliminary Evaluation of Chemical Substances

Since 1979, NEC has been conducting preliminary evaluations to examine environmental and safety aspects carefully when using a new chemical substance for the first time. These preliminary evaluations are a series of strict examinations of physical properties, toxicity, handling methods, emergency response, recycling methods, environmental impact, and other items related to chemical substances. Only substances that have passed these examinations are allowed to be purchased.

Safety data sheets (SDS) are obtained from manufacturers or prepared independently for all chemical substances used. These are used for reference when making judgements in considering safety countermeasures to apply when using the chemical substances. Manufacturing assessments are also carried out in all manufacturing processes to evaluate environmental and safety aspects of the chemical substances and production facilities.



Reduction in Use of Strictly Regulated Chemical Substances

- Ozone depleting substances
The use of all specific chlorofluorocarbons as a cleaning agent in manufacturing processes was discontinued in 1993. By the end of fiscal 2011, efforts to totally discontinue the use of specific chlorofluorocarbon for refrigerant in air conditioners and specific halon used in fire extinguishers achieved a reduction of 96%, almost completely abolishing them.

- Environmental endocrine disruptors
In fiscal 1999, we abolished the use of all agrochemicals and pesticides prescribed in Strategic Programs on Environmental Endocrine Disruptors (SPEED) ’98 released by the Japan Environment Agency (currently the Ministry of the Environment).

Strict Control of Equipment and Parts Containing PCBs

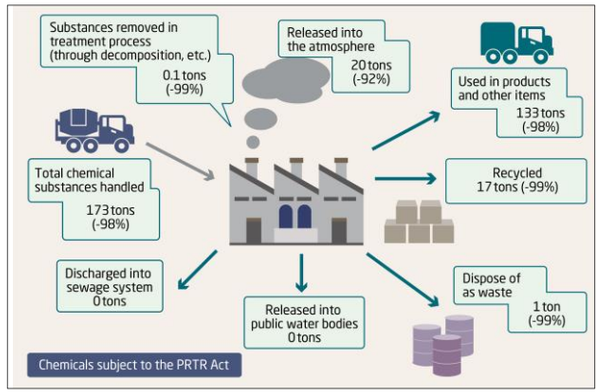
At present, NEC strictly controls disposed devices (equipment and parts, including fluorescent light stabilizers) containing polychlorinated biphenyl (PCB) at its three plants and five Group companies under stringent double and triple measures for preventing leakage.

The Law Concerning Special Measures for Promotion of Proper Treatment of PCB Waste was revised in 2016, changing the processing period set in the basic plan for the disposal of polychlorinated biphenyls. In compliance with the change, NEC is revising its disposal plans to ensure that waste is processed within the set deadline.

Conformance to the PRTR Act (Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof)

The balance of inputs and outputs of substances used by the NEC Group among the chemical substances that are subject to the PRTR Act (Class I Designated Chemical Substances: 462 substances) is summarized in the following illustration.

Compared with the report of the previous fiscal year, total volume handled increased due to an increase in production volume.
For chemical substances released into the atmosphere and public water bodies (including discharges into sewage systems), NEC has set its own voluntary standards, which are more stringent than the levels required by law, and ensured that these standards were strictly met.



Overview of Chemical Substance Balance Management

Unit: ton/year

Substance	Total volume handled	Volume consumed	Removal treatment	Recycled	Released into atmosphere	Released into public water bodies	Released into soil	Disposal at on-site landfill	Transfer to sewage	Waste
Cobalt and its compounds	11.1	11.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dichloropentafluoropropane (also known as HCFC-225)	2.6	1.8	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0
1,2,4-trimethylbenzene	17.7	17.7	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Toluene	6.2	5.6	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.1
Lead	8.1	1.4	0.0	7.4	0.0	0.0	0.0	0.0	0.0	0.0
Antimony and its compounds	8.2	8.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nickel	22.1	22.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1-bromopropane	35.7	7.9	0.0	8.4	15.8	0.0	0.0	0.0	0.0	0.9
Manganese and its compounds	11.8	11.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Methylnaphthalene	1.8	1.6	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Molybdenum and its compounds	5.5	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Xylene	21.8	19.5	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1
Chromium and trivalent chromium compounds	18.3	18.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PRTR Balance Management Result

Water Management and Efficient Use of Water Resources

We ascertain water consumption and waste water amounts at all of our bases and business sites. The status of our environmental burden, including water consumption, and of our progress on targets for reducing it, is reported annually at the Business Strategy Council and disclosed publicly. If we recognize the possibility of a major impact on our business related to water, reports are made constantly at Business Strategy Council meetings held twice monthly and at the monthly meetings of the Board of Directors. The Board is responsible for overseeing the situation. In addition, at quarterly environmental management promotion meetings held by the manager of the Environmental Management Promotion Department of NEC Corporation, we manage the status of our environmental burden, including water consumption, and the status of progress on reduction targets, report the results to the executive officer in charge of the environment. This officer reports to the Business Strategy Council and the Board of Directors as necessary.

When situations arise that could impact business, such as floods, the division overseeing the supply chain discusses impact forecasts and countermeasures. The countermeasures are deliberated in the Business Strategy Council and the Board of Directors before being implemented.

Response to Water Risk

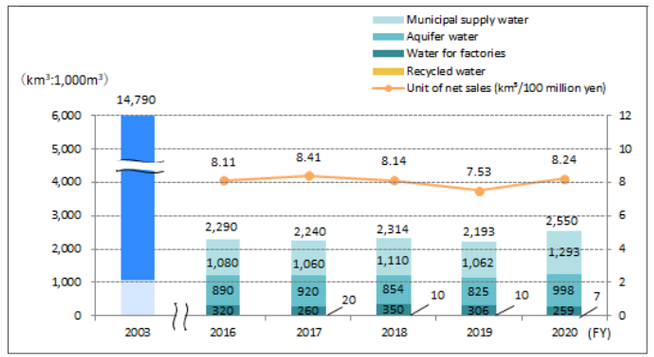
The impact of climate change-induced water risks related to water pollution, depletion, and climate change on the NEC Group's production sites and supply chain was evaluated and confirmed using the Aqueduct water risk platform provided by the World Resources Institute (WRI).
This tool provides a wide range of data including indicators of physical water stress, water quality, legal risks related to water supply, reputation risk, and groundwater risk. We will use these to promote countermeasures and manage these risks continuously.

At our business sites, production sites, and research laboratories, we conduct water volume monitoring and sampling tests at discharge outlets in order to quickly identify any changes. We have also set in-house standards that are stricter than national and local regulations and we take measures to counter water risks.
The impact on ecosystems and habitats from NEC's water consumption amount and the amount and quality of its water discharge is negligible. Please see p. 28 for Environmental Act violations and incidents involving water that occurred in fiscal 2020.

Water Consumption and Consumption Intensity

NEC uses municipal supply water, aquifer water, water for factories, and recycled water. We have reduced water consumption at all of our sites, aiming to achieve a reduction of 0.5% compared with fiscal 2019.
In fiscal 2020, we continued to reinforce our existing water-saving measures. Companywide water consumption rose 16% (compared with fiscal 2019), but the increase was due to a wider scope of companies worldwide included for data collection. If data had been collected within the same scope as fiscal 2019, water consumption for fiscal 2020 would have decreased by 7.5% year on year.

We will continue to treat limited water resources with care, and conduct forest preservation activities in areas that serve as water sources.

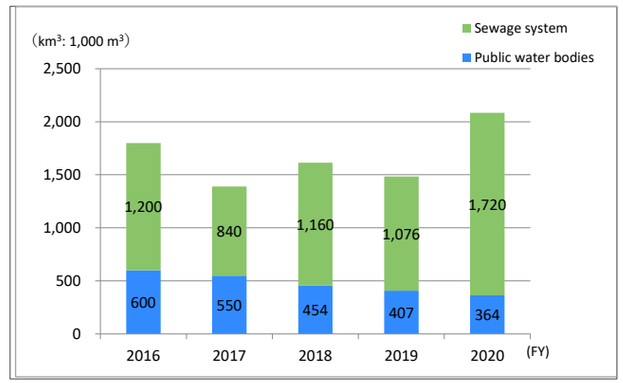


Water Consumption and Consumption Intensity

Wastewater Amount

Since 1997, NEC has adopted in-house standards that are stricter than national and local government standards to ensure that its wastewater amount does not exceed them.

In addition, to minimize the trade-off effect with chemicals related to wastewater treatment, we are taking steps to reduce the amount of chemicals used. Specifically, we constantly monitor the status of water quality to ensure that we do not use more chemicals than necessary. Furthermore, by promoting recycling of water, we have reduced the volume of new chemicals used.



Wastewater Amount

Inclusion in the CDP Water A List

NEC's water management initiatives and information disclosure in fiscal 2020 were recognized by its inclusion among the "A List" companies holding the highest rating in the CDP "Water" division.

Initiatives for Biodiversity

Biodiversity is an important foundation for a sustainable society. At NEC, our environmental policies stipulate that individual employees should increase their environmental awareness and contribute to preserving biodiversity. We strive to minimize the impact of business activities and employees' lives on living organisms, and to actively encourage employees' activities that contribute to biodiversity and provision of ICT solutions.

Biodiversity Conservation Effort at NEC Abiko Plant

NEC Abiko Plant has a spring area onsite known as Yotsuike, thought to derive from the Tone River. The area around the periphery of the pond, has been confirmed as a habitat for an endangered species IB class (EN) of dragonfly designated by the Ministry of the Environment, known as the Oomonosashi Tombo (Copera tokyoensis). Since 2009, NEC has cooperated with Teganuma Aquatic Organism Research Association to promote conservation activities in the area.

Photograph: Teganuma Aquatic Organism Research Association
Oomonosashi Tombo (Copera tokyoensis)

Activities with experts and a local group
(Draining of ponds and creation of an artificial dragonfly pond)

In 2019, we saw the results of preparing a breeding environment by draining ponds to eliminate invasive fish species and creating an artificial dragonfly pond as more Oomonosashi Tombo (Copera tokyoensis) dragonflies were observed than in previous years. We also made effective use of the large volume of freshwater mussels discovered upon draining four ponds in 2012 by conducting preservation activities for an endangered species of IA type (CR) cyprinid in the same artificial pond at our business site. By providing a place for the cyprinids to lay their eggs, the freshwater mussels played an important role in the cyprinids' survival.

Large volume of freshwater mussels discovered upon draining the pond

Released together with cyprinids

Activities in Biodiversity Working Groups

NEC participated in biodiversity preservation activities as a member of a biodiversity working group made up of four organizations* involved with the electrical and electronic industries.

The working group has supported corporate biodiversity initiatives with the publication of *Let's Try Biodiversity! (LTB)—First Corporate Activities in Biodiversity* and *Let's Try Biodiversity Pick Up!—Reducing Plastic Waste in the Ocean Starting on Land*, which summarizes approaches to marine plastic waste.

* Four organizations in the electrical and electronics industry:
The Japan Electrical Manufacturers' Association (JEMA)
Japan Electronics and Information Technology Industries Association (JEITA),
Communications and Information Network Association of Japan (CIAJ), and
Japan Business Machine and Information System Industries Association (JBMIA)

Biodiversity Conservation Activities by Employees