NTT Communications Corporation Sustainability Report 2021

Environment

Contributions to the Global Environment

Achieving Carbon Neutrality for a Green and Sustainable Future

The public's expectations and the responsibilities of ICT companies for activities to protect the global environmental protection are growing. We have been promoting a multifaceted approach with a focus on realizing a low-carbon society, promoting closed-loop recycling, and preserving biodiversity and have established and announced the Environmental Statement and Eco Strategy 2030.

In March 2021, we reviewed the Eco Strategy 2030 to respond to rapidly changing global and social conditions and set specific goals and initiatives for decarbonization. In addition to reducing the environmental impact of our own business activities, we will contribute to reducing the environmental impact of society as a whole while aiming to achieve both solutions to environmental problems and economic development.

Moving toward the transition to a decarbonized and recycling-oriented society, which is a matter of global concern, the NTT Communications Group has set forth its Environmental Statement and Eco Strategy 2030. It has also been working to reduce environmental impact by improving the efficiency of all of society through ICT solutions and by lowering its own carbon emissions. As a leading ICT company, we place a heavy burden on the global environment by providing ICT infrastructure services based in telecommunications buildings, data centers, and other facilities that consume large amounts of power due in part to growing public demand. Actively developing and introducing advanced technologies to reduce our environmental impact not only contributes to the sustainability of society but also enhances our own sustainability. In fiscal 2021, as an urgent measure to address the rapid advance of climate change, we will more intensively promote environmental initiatives by adding specific targets to our Eco Strategy 2030, such as the renewable energy usage rate, reduced CO_2 emissions, transitioning the Company fleet in Japan to EVs, and reviewing our environmental management system in order to make our own CO_2 emissions from data centers, networks, and other facilities carbon neutral by fiscal 2030. In recent years, we have accelerated our efforts to reduce our environmental impact by actively collaborating in R&D with a diverse range of industries. We will continue to fulfill our responsibilities as an ICT company by systematically and proactively engaging in every step along the way, from implementation of basic measures to the adoption of advanced technologies, toward realizing a green future.

Masami Okada
Head of Infrastructure Design

*Targeted GHG Protocol: Scope 1 (direct emissions of greenhouse gases from our own sources) and Scope 2 (indirect emissions from the use of electricity, heat, and steam supplied by other companies)

Fiscal 2020 Activity Results

Actions Implemented in Line with CSR KPIs

In line with the three underpinning themes of fiscal 2020: Realizing a Low-carbon Future, Implementing Closed-loop Recycling, and Planning a Future of Co-existing with Nature, we worked to reduce the environmental impact associated with all our business activities and achieved Groupwide results. In particular, we continued our measures to reduce power consumption and introduced renewable energy (including virtually renewable energy by using non-fossil fuel certificates), which helped us to reduce CO_2 emissions. We also made significant progress in the digitization of paper documents as part of our efforts to move into the era of remote work and continued to promote the 3Rs (reduce, reuse, and recycle), thereby improving the landfill rate. In fiscal 2021, we will continue pursuing various measures with a focus on activities that include reducing electricity consumption, introducing renewable energy, promoting waste recycling, and preserving ecosystems in order to contribute to reducing the environmental impact of our Group as well as society as a whole.

◆ Fiscal 2020 Activity Results

Initiatives	Medium-term Targets (Form We Want to Take in Five Years)	Fiscal 2020				Scope of Activities (Boundary)		
		Targets	Specific Activities	Quantitative Results	Assessment	Within the Organization	Outside the Organization	Scope

CSR Priority Activities | Realizing a Low-carbon Future   Relevant SDGs ▶ 7 13

Initiatives	Medium-term Targets	Targets	Specific Activities	Quantitative Results	Assessment	Within	Outside	Scope
Cutting carbon emissions from businesses	We will raise power efficiency per data transmission in our telecommunications businesses, including data centers, by at least 10 times compared to fiscal 2013 levels (fiscal 2030 target).	Raise power efficiency per data transmission in our telecommunications businesses, including data centers, by at least 10 times in 2030 compared to fiscal 2013 levels (fiscal 2020 target: 4.5 times higher) ● Implement the following energy management measures to further reduce electricity use ● CO_2 emissions: 233 kt-CO_2 (CO_2 emission factor: 0.454 kg-CO_2/kWh) - Telecommunications facility: 217 kt-CO_2 - Offices: 16 kt-CO_2	● Introduction of renewable energy (including virtually renewable energy by using non-fossil fuel certificates) ● Power saving and decarbonization of telecommunications buildings (including data centers) - Adjustment of telecommunications facility intake - Improvement of airflow control using humidity sensors - Optimization of indoor temperature - Air-conditioning control - Increase installations of automated air-conditioning control systems ● Reduction of power consumption in offices - Setting the office attendance rate target (30% or less; achieved about 20%)	● Introduction of renewable energy (including virtually renewable energy by using non-fossil fuel certificates): 0.4 billion kWh (percentage of power used: 8.4%) ● Power efficiency: Increased by 6.3 times compared to fiscal 2013 ● CO_2 emissions: 192 t-CO_2 (CO_2 emission factor: 0.415 kg-CO_2/kWh) - Telecommunications facilities (including data centers): 176 kt-CO_2 - Offices: 15 kt-CO_2	★ ★ ★	●		Group companies in Japan
Cutting society's carbon emissions through products and services	We will contribute to reducing CO_2 emissions across society by at least 10 times more than the NTT Communications Group's own emissions (fiscal 2030 target).	Expand the use of the Environmental Solutions Label System to contribute to reducing CO_2 emissions across society by at least 10 times more than the NTT Communications Group's own emissions in 2030 (fiscal 2020 target is 15.3 times more)	Maintain and promote the sales of Environmental Solutions Label-certified services capable of contributing to reducing CO_2 in society	Result: 18.3 times more	★ ★ ★	●	●	Group companies in Japan

Achievement levels based on self-assessment ★★★: Target achieved   ★★: Target almost achieved   ★: Target only partially achieved

Initiatives	Medium-term Targets (Form We Want to Take in Five Years)	Fiscal 2020			Scope of Activities (Boundary)		
		Targets	Specific Activities	Quantitative Results	Assessment	Within the Organization	Outside the Organization
							Scope

CSR Priority Activities | Implementing Closed-loop Recycling   Relevant SDGs ▶ 12

| Realizing a low environmental impact business model | Implementing a low environmental impact business model | ● Building and maintaining a low environmental impact business model
 - Implementing measures to reduce electricity use
 - Installing energy saving equipment
 - Appropriately managing hazardous substances | ● Installation of energy saving equipment
 ● Installation of direct and indirect ambient air-conditioning system
 ● Increase in the number of buildings with airflow control systems
 ● Appropriate management of PCBs, asbestos, and other hazardous substances
 ● Effective use of water resources | — | ★★★ | ● | Group companies in Japan |
| Thorough implementation of a 3R policy in businesses | Thorough implementation of a 3R (reduce, reuse, and recycle) policy with regard to all resources relevant to our business activities - Improvement in the landfill rate: 1.5% or lower (fiscal 2030 target) | ● Continue the implementation of a 3R (reduce, reuse, and recycle) policy with regard to all resources relevant to our business activities
 - Improvement in the landfill rate: 2.0% or lower
 - Reduced use of plastic and promotion of recycling
 ● Promote a paperless working style that utilizes ICT equipment | ● Enhanced promotion of the 3R policy
 ● Confirmation of waste process flow and method and promote thermal recycling to improve the landfill rate
 ● Reduced paper consumption and plastic emissions by establishing remote work | Landfill rate: 1.6% | ★★★ | ● | Group companies in Japan |

CSR Priority Activities | Planning a Future of Co-existing with Nature   Relevant SDGs ▶ 14 15

| Facilities that show consideration for biodiversity | ● Facility construction, maintenance, and repair based on NTT Group building concepts
 ● Compliance with action guidelines with regard to biodiversity conservation | ● Facility construction, maintenance, and repair based on NTT Group building concepts
 ● Compliance with action guidelines in regard to biodiversity conservation | ● Facility maintenance based on NTT Group building concepts
 ● Compliance with action guidelines in regard to biodiversity conservation
 ● Offering our stations for observing the migration of Chinese sparrow hawks | — | ★★★ | ● | Group companies in Japan |
| Utilize ICT to contribute to biodiversity | Utilize ICT to contribute and respond to biodiversity | Utilize ICT to contribute and respond to biodiversity | ● Expansion of Mimawari Rakutaro to 50 local governments nationwide
 ● Information dissemination and educational activities through the goo Green Label | — | ★★★ | ● | ● | Group companies in Japan |

Achievement levels based on self-assessment ★★★: Target achieved   ★★: Target almost achieved   ★: Target only partially achieved

Basic Philosophy and Vision

While emphasizing the philosophy in the Global Environmental Charter, established by the NTT Group, our environmental protection activities take shape as the NTT Communications Group Global Environmental Charter and Eco Strategy 2030, which applies the philosophy to the characteristics of our business. We set initiative goals and implement measures on an ongoing basis.

NTT Communications Group Global Environmental Charter

The NTT Group has established the NTT Group Global Environmental Charter to promote Groupwide consideration and actions relating to environmental protection from a global perspective. This philosophy and policy form the basis for the NTT Communications Group Global Environmental Charter, which is disseminated among employees of the Group as a set of guidelines for the implementation of environmental protection activities.

In fiscal 2021, we plan to review the NTT Group's Environment and Energy Vision and Sustainability Charter and strengthen the NTT Group Global Environmental Charter to further accelerate our decarbonization efforts and contribute to the global environment. We will also update the NTT Communications Group Global Environmental Charter to better meet public expectations as a leading company.

For more information on the NTT Communications Group Global Environmental Charter, see:
https://www.ntt.com/en/about-us/csr/eco/details.html

Environmental Statement and Eco Strategy 2030

While closely monitoring global environmental trends, we reviewed the environmental activities of the NTT Communications Group in November 2016 and established the NTT Communications Group Environmental Statement and Eco Strategy 2030. In fiscal 2020, we revised the Eco Strategy 2030 in response to increasing corporate roles and responsibilities regarding global climate change.

Working in unison, each and every NTT Communications Group employee around the world will engage in environmental activities to realize a future in which people and the planet remain in harmony by providing technologies and services that pioneer eras.

The NTT Communications Group Environmental Statement

We are dedicated to global environmental management for a future in which people and the planet remain in harmony, and we will address three futures by providing technologies and services that pioneer eras.

Realizing a Low-carbon Future
We are contributing to the reduction of CO$_2$ emissions and facilitating adaptation to climate change risk.

Implementing Closed-loop Recycling
We are working toward more effective resource allocation.

Planning a Future of Co-existing with Nature
We are contributing to the preservation of ecosystems.

Note: The NTT Communications Group Environmental Statement will be updated based on revisions made to the NTT Group Global Environmental Charter.

NTT Communications Corporation Sustainability Report

2021

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Eco Strategy 2030

Under Eco Strategy 2030, we have set out specific initiatives[1] to help realize the three futures outlined in the Environmental Statement. In fiscal 2020, following the declaration of the NTT Group's Environment and Energy Vision in May 2020, we also added specific targets for our renewable energy usage rate, reducing CO_2 emissions, and converting our corporate fleet in Japan to EVs as a countermeasure to rapidly changing climate conditions.

We intend to achieve carbon neutrality (virtually zero emissions)[2] by fiscal 2030 through measures such as increasing our rate of renewable energy use to 50% or more.

Three Futures We Are Targeting		Initiative	
	Realizing a Low-carbon Future	Rate of renewable energy use in the Company[3]	We will increase the rate of renewable energy use in the NTT Communications Group to 50% or more.
		Reducing CO_2 emissions from the Company (Scopes 1 and 2)	We will reduce CO_2 emissions in the NTT Communications Group by 50% compared to fiscal 2018[4].
		Reducing CO_2 emissions from the supply chain (Scope 3)	We will reduce CO_2 emissions from the supply chain by 15% compared to fiscal 2018.
		Conversion rate of our corporate fleet to EVs in Japan (%)	We will make EVs account for 100%[5] of our corporate fleet used in Japan.
		Contributing to the reduction of CO_2 emissions across society	We will contribute to reducing CO_2 emissions across society by at least 10 times more than the NTT Communications Group's own emissions.
		Adapting to climate change	We will play our part in adapting to climate change by actively promoting initiatives through all our activities and by collaborating with our stakeholders.
	Implementing Closed-loop Recycling	Final waste disposal ratio	We will aim to keep the final disposal ratio of the waste generated by the NTT Communications Group at 1.5% or less.
	Planning a Future of Co-existing with Nature	Preservation of ecosystems	We will play our part in preserving ecosystems by actively promoting initiatives through all our activities and by collaborating with our stakeholders.

Note: The NTT Communications Group Eco Strategy 2030 will be updated based on revisions made to the NTT Group's Global Environment and Energy Vision.

[1] Quantitative targets for fiscal 2030
[2] Targeted GHG Protocol: Scope 1 (direct emissions of greenhouse gases from our own sources) and Scope 2 (indirect emissions from the use of electricity, heat, and steam supplied by other companies)
[3] Including the amount used by other companies at the data centers
[4] Equivalent to 1.5℃ SBT
[5] 50% by fiscal 2024 (to begin with)

Environmental Management

Promotion Framework for Reducing Environmental Impact

In order to continuously promote environmental protection initiatives in a Groupwide effort, we have established the Global Environmental Protection Subcommittee within the CSR Committee, headed by the managing executive officer in charge of CSR, and also formed working groups for each related issue. The Global Environmental Protection Subcommittee formulates an overall plan that encompasses a wide range of issues, including the reduction of greenhouse gas 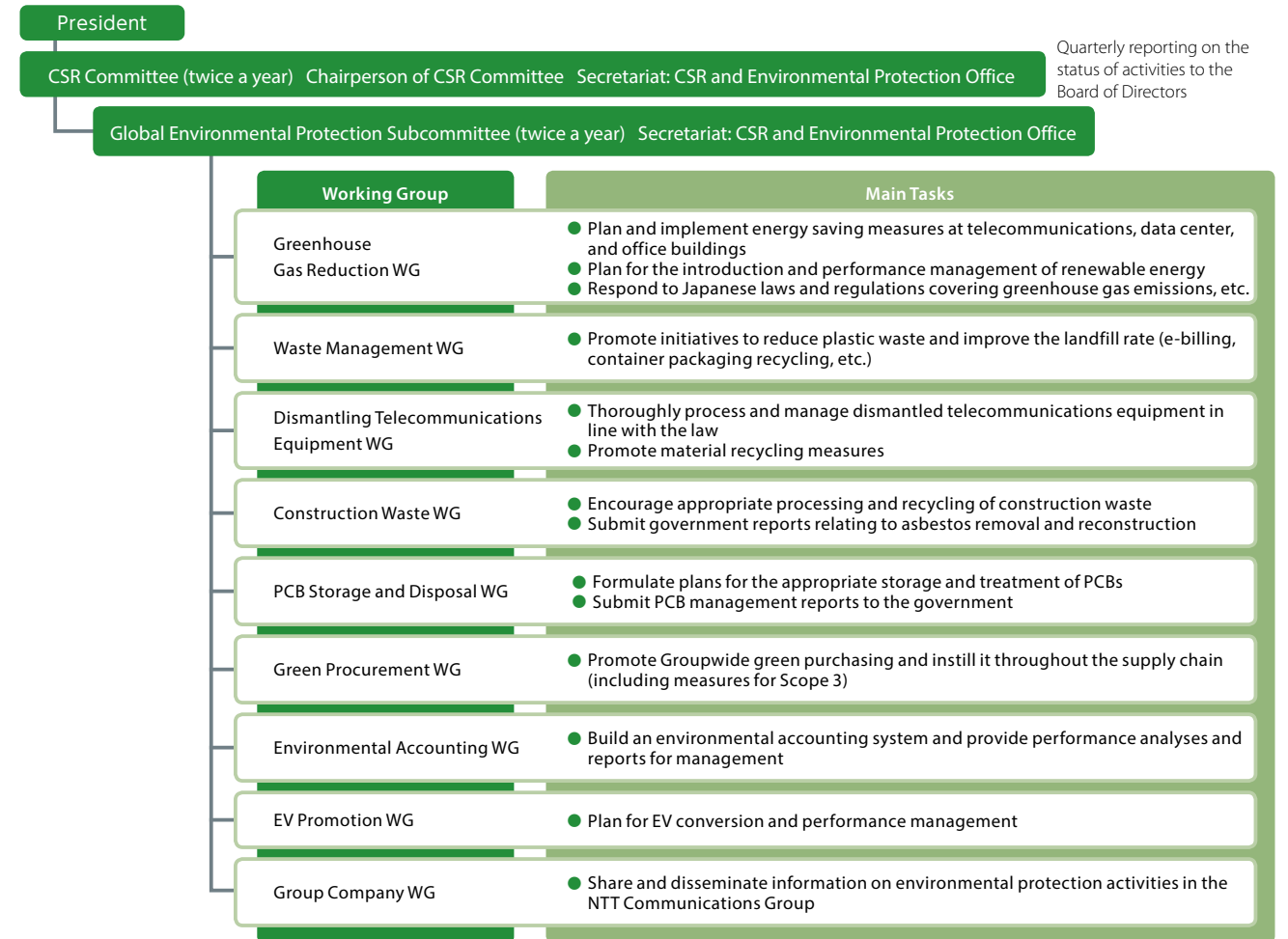emissions and waste, shares information on the results of actions taken, and promotes the horizontal deployment of various initiatives.

In fiscal 2020, we reviewed our environmental management structure in line with new targets added to our Eco Vision 2030, which includes the introduction of renewable energy, reduced greenhouse gas (CO_2) emissions, and having EVs account for 100% of our corporate fleet in Japan, and we have worked Groupwide to engage in environmental protection activities and initiatives toward achieving them.

◆ **Environmental Protection Framework**

President

CSR Committee (twice a year)　Chairperson of CSR Committee　Secretariat: CSR and Environmental Protection Office

Quarterly reporting on the status of activities to the Board of Directors

Global Environmental Protection Subcommittee (twice a year)　Secretariat: CSR and Environmental Protection Office

Working Group	Main Tasks
Greenhouse Gas Reduction WG	● Plan and implement energy saving measures at telecommunications, data center, and office buildings ● Plan for the introduction and performance management of renewable energy ● Respond to Japanese laws and regulations covering greenhouse gas emissions, etc.
Waste Management WG	● Promote initiatives to reduce plastic waste and improve the landfill rate (e-billing, container packaging recycling, etc.)
Dismantling Telecommunications Equipment WG	● Thoroughly process and manage dismantled telecommunications equipment in line with the law ● Promote material recycling measures
Construction Waste WG	● Encourage appropriate processing and recycling of construction waste ● Submit government reports relating to asbestos removal and reconstruction
PCB Storage and Disposal WG	● Formulate plans for the appropriate storage and treatment of PCBs ● Submit PCB management reports to the government
Green Procurement WG	● Promote Groupwide green purchasing and instill it throughout the supply chain (including measures for Scope 3)
Environmental Accounting WG	● Build an environmental accounting system and provide performance analyses and reports for management
EV Promotion WG	● Plan for EV conversion and performance management
Group Company WG	● Share and disseminate information on environmental protection activities in the NTT Communications Group

(As of March 31, 2021)

Environmental Impact of Business Activities

Fiscal 2020 Material Flow

Environmental Impact of Business Activities

Input

Procurement	
Items purchased through green procurement	3.30 million
Procurement systems assessed	8 companies

Telecommunications Facilities	
Power	420 million kWh
Fuel	1.31 million l
Gas	190,000 m³
Heat	2.07 million MJ

Offices	
Power	30 million kWh
Water	60,000 m³
Paper	47 t

Sales	
Paper (brochures)	7 t
Invoices	143 t
Fuel (automobile)	55 kl

Business Processes

Procurement

Telecommunications Facilities

Offices

Sales

Reuse and Recycle

Output

Telecommunications Facilities (including data centers)	
Power	172 kt-CO_2
Fuel	3.5 kt-CO_2
Gas	400 t-CO_2
Heat	100 t-CO_2
General waste generated	427 t
Industrial waste generated	3,888 t
General waste landfills	3 t
Industrial waste landfills	4 t

Offices		
	Greenhouse gases (power)	12 kt-CO_2
	General waste generated	394 t
	Industrial waste generated Including plastic waste generated	62 t / 48 t
	General waste landfills	5 t
	Industrial waste landfills	2 t
	Total wastewater volume	60,000 m³

*We separate waste insofar as possible to improve the recycling rate.

Sales		
	Fuel (greenhouse gases)	0.1 kt-CO_2

Reuse		
	In-house reuse of dismantled telecommunications equipment	124 units
	Equipment and packaging	7,797 units
	Amount of removed fiber-optic cable reused	1.2 km

Recycle		
	Collection of confidential documents	167 t

(Scope: NTT Communications Corporation and 15 Group companies)

Calculation of CO₂ Emissions

For Scope 3, we calculated 10 relevant categories out of 15 target categories by referring to unit emission databases and other materials produced through studies by the Ministry of the Environment and other government ministries and agencies.

◆ CO₂ Emissions by Scope and Category

Category	Composition Ratio (%)	CO_2 Emissions (kt-CO_2)
Scope1 (direct emissions of greenhouse gases from our own sources, such as fuel combustion)		7
Scope2 (indirect emissions from the use of electricity, heat, and steam supplied by other companies)		187
Scope3 (indirect emissions other than Scopes 1 and 2, such as emissions by others related to our activities)	100	3,809
Category 1 (purchased goods and services)	23.3	889
Category 2 (capital goods)	8.5	324
Category 3 (fuel and energy activities not included in Scopes 1 or 2)	1.0	37
Category 4 (upstream transportation and distribution)	0.2	8
Category 5 (waste generated through business activities)	0.0	0
Category 6 (business travel)	0.2	8
Category 7 (employee commutations)	0.2	7
Category 8 (upstream leased assets)	–	–
Category 9 (downstream transportation and distribution)	–	–
Category 10 (processing of products sold)	–	–
Category 11 (use of products sold)	59.0	2,246
Category 12 (disposal of products sold)	2.2	84
Category 13 (downstream leased assets)	5.4	207
Category 14 (franchise)	–	–
Category 15 (investments)	–	–

Note: Scope 1 includes CO₂-equivalent emissions of greenhouse gases other than CO₂ (CFC substitutes, etc.) (Scope: NTT Communications Corporation and 15 Group companies)

Environmental Accounting in Fiscal 2020

The NTT Communications Group tabulates its environmental conservation costs (categories corresponding to business activities) and the economic benefit derived from its environmental conservation activities (real financial impact) in line with the Environmental Accounting Guidelines 2005, issued by the Ministry of the Environment, and the NTT Group Environmental Accounting Guidelines.

The environmental conservation cost in fiscal 2020 increased by approximately 130 million yen year on year to 2.39 billion yen, consisting of around 900 million yen in investments and about 1.49 billion yen in expenses. This was mainly due to a decrease in investments for environmental conservation.

Meanwhile, the economic benefit derived from environmental conservation in fiscal 2020 increased by approximately 120 million yen year on year to 1.68 billion yen, mainly due to reduced power charges resulting from energy saving measures and an increase in revenue from sales of cables, metal scrap, and other items.

◆ Environmental Conservation Costs (Categories Corresponding to Business Activities) (Millions of Yen)

Category	Key Measures		Investment		Expenses	
			FY2019	FY2020	FY2019	FY2020
(1) Business area cost			850	862	1,219	1,302
Breakdown	Pollution prevention costs	Oil tank facility for power generator use Management of items using PCBs	231	289	164	145
	Global environmental conservation costs	Measures to reduce CO_2 Emissions resulting from electricity use	618	573	526	612
	Resource circulation costs	Waste disposal and reuse expense	0	0	529	545
(2) Upstream/downstream costs	Measures to recover, recycle, and reuse telecommunications equipment		73	42	47	45
(3) Administration costs	Environmental conservation management activities		0	0	73	117
(4) R&D costs	Allocated portion of the NTT Group's environmental R&D costs		0	0	1	23
(5) Social activity costs	Costs of supporting volunteer participation		0	0	2	2
(6) Environmental remediation Costs			0	0	0	0
Total			924	904	1,342	1,488

◆ Economic Benefits Associated with Environmental Conservation Activities (Real Financial Impact) (Millions of Yen)

Category	Key Measures	FY2019	FY2020
Revenue	Revenues from sales (cables, metal scrap, etc.)	239	315
Cost reductions	Reductions in expenses as a result of measures such as those related to reducing electricity use	391	490
	Reductions in purchase cost as a result of reusing dismantled telecommunications equipment	400	441
	Decrease in postal and paper costs due to increased use of Mypage (online account page)	533	433
	Others	0	0
Total		1,565	1,681

Period: April 1 to March 31 of each year
Scope: NTT Communications Corporation and 15 Group companies
Tabulation and disclosure: Figures were tabulated in line with the Ministry of the Environment's Environmental Accounting Guidelines 2005 and the NTT Group Environmental Accounting Guidelines. Expenses include personnel expenses but exclude depreciation.

Environmental Management System

Acquiring ISO 14001 Certification

Two companies in the NTT Communications Group have acquired ISO 14001 certification as of March 31, 2021. We have contracted outside environmental consultants to perform annual internal audits of the certified companies and departments in order to ensure the appropriate implementation of environmental management and continual improvements that will allow for a steady reduction of the environmental impact of business activities. Regular reviews and renewal examinations are undertaken by an independent certification body as well. Outstanding issues are thus identified, and remedial measures are taken swiftly. Besides our initiatives centering on reductions of office paper and electricity use and the promotion of waste recycling, we encourage the adoption of measures aimed at creating an environmentally friendly society.

◆ **Companies Certified under ISO 14001**

Companies Certified		Date Certified
NTT Communications Corp*	Procurement Promotion and Strategy, Procurement and Billing Department	October 1999
	Business Solution, Solution Services Department	March 2004
NTTPC Communications, Inc.		November 2003

*As of July 1, 2021

Percentage of employees of target organizations to total employees: 23%

Environmental Management

Guided by its Global Environmental Charter, the NTT Communications Group shares yearly PDCA and other reports at the Global Environmental Protection Subcommittee, an organization that comes under the CSR Committee. These reports outline details of the various activities administered by the nine working groups that drive the Group's environmental protection activities. In addition to sharing information and calling for the further development of effective initiatives, we are promoting environmental management on a Groupwide basis.

Compliance with Environmental Legislation and Regulations

The NTT Communications Group is committed to ensuring legal compliance and proper risk management while liaising closely with the other NTT Group companies. All legislation, including environmental laws and regulations aimed at curtailing pollution, emissions standards, and the PRTR Law*, is fully communicated to related departments, and independent guidelines and enhanced compliance education have been established for in-house application. We were not involved in any litigation or legal violations pertaining to environment-related accidents, infringements, fines, or complaints in fiscal 2020.

We will continue our Companywide efforts to prevent pollution and comply with related laws and regulations.

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

Promoting Green Procurement

One of the pillars of the NTT Group's medium-term management strategy is the promotion of ESG management, and the NTT Group Environment and Energy Vision was formulated in May 2020 as part of this strategy. In October of that year, the NTT Group was approved by the SBT initiative and revised the NTT Group Green Procurement Guidelines in April 2021 based on the same vision and the external environment. In line with this revision, NTT Communications has also revised its guidelines.

In the revised Guidelines for Green Procurement, NTT Communications clearly specifies factors in our set of criteria applied when selecting suppliers, such as the supplier's actions toward environmental conservation and an environmental conservation element of the procured item. The guidelines also include a request for cooperation from our suppliers in reducing CO_2 emissions and state we will procure preferentially from suppliers taking action to reduce greenhouse gas emissions.

Through our efforts for green procurement (procuring products taking into account their impact on the environment) under the guidelines, we will work to improve our environmental protection activities with our suppliers and seek to commit to further social contribution.

◆ **Status of Green Procurement (10,000 Units)**

	FY2016	FY2017	FY2018	FY2019	FY2020
Green procurement of goods, excluding office supplies	90	154	204	257	330
Green procurement of office supplies	20	22	21	24	33

Sharing of Green Procurement Policies

NTT Communications holds individual briefing meetings with suppliers to mutually share our basic approach and requirements for them with regard to the procurement of environmentally sound parts and products. In fiscal 2020, we briefed 52 suppliers on our policy, of which 50 were informed about paper reduction and electronic contracting and 2 about the plastic packaging reduction initiative.

We will continue to closely communicate with our suppliers and work together to promote green procurement.

Environmental Education Initiatives

We offer all employees environmental education with the intention of raising their awareness of environmental matters. We are also proactive in environmental awareness activities as part of our CSR efforts, extending the scope of participation to include not only employees but also their family members and our business partners.

In fiscal 2020, we conducted CSR training targeted for all employees (93.8% of them attended) as well as lectures on the topic of "SDGs and Business Activities" to learn about domestic and international social trends such as the SDGs, ESG investment, decarbonization efforts, and global risks.

We are working to raise employee awareness by posting monthly reports on how much electricity and paper is used and how much waste is generated in each office.

In addition, we held an SDG photo contest as an extension of the biodiversity-related photo contest that had been held until fiscal 2019, with the goal of providing employees and their families with an opportunity to think about the SDGs and helping them relate the SDGs to their own lives so that they can take action. The contest received approximately 200 entries.

We have also been conducting a range of environmental awareness and educational activities, including a cleanup of the areas around our offices and the seaside, promotion of the ecocap movement, and woodland conservation efforts (NTT Com Solutions and NTT Com Marketing). In light of the COVID-19 pandemic, however, we decided to temporarily suspend these activities in fiscal 2020. We will continue to explore the possibility of resuming activities to raise employee awareness in fiscal 2021.

◆ **During a lecture**

Lecturer: Kazuo Tase, President and CEO, SDG Partners, Inc.

◆ **SDGs Photo Contest President's Award given for "Freezing Spring"**
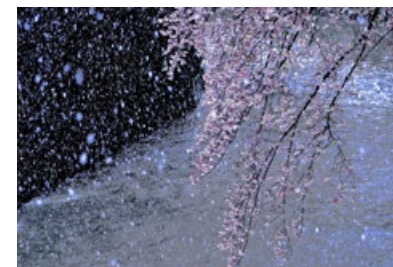
Hiroshi Seo
NTT Limited Japan (seconded)
Related SDGs: 13 take urgent action to combat climate change and its impacts

CSR Priority Activities

Realizing a Low-carbon Future

Our Approaches

We are taking a variety of approaches to reduce CO_2 emissions, an urgent issue for achieving the SDGs and a sustainable future. These include saving energy and improving the efficiency of our facilities, introducing renewable energy (including virtually renewable energy by using non-fossil fuel certificates), offering services that incorporate excellent low-carbon features, and engaging in environmental contribution activities. For our environmental initiatives in relation to our facilities, we have set targets from the two viewpoints of telecommunications facilities and offices, and all of our employees are working together to reduce CO_2 emissions. Particularly, since electricity consumption accounts for more than 90% of total CO_2 emissions from business activities, we can expect great advantages as a result of saving energy and improving the energy efficiency of telecommunications equipment. We are thus making strong efforts in such respects as leading the industry in introducing cutting-edge technologies.

Primary Concept

While the advancement and spread of ICT has helped to bring about an affluent society and convenient lifestyles, the increase in power consumption from ICT-related equipment is placing enormous pressure on the environment. In this context, SDG 13 urges taking action to combat climate change and its impacts and reducing CO_2 emissions, the main cause of climate change and is a matter of utmost urgency not only for humans but also for the prosperity of all living things. As part of our initiative to contribute to the creation of a low-carbon society, we set "Realizing a Low-carbon Future" as one of the themes for our Environmental Statement.

In fiscal 2021, we will continue to update the NTT Communications Group's Environmental Statement and Eco Vision 2030 to better meet public expectations as a leading company and further accelerate our decarbonization efforts and protect the global environment.

Main Achievements in Fiscal 2020 and Goals for the Coming Years

In fiscal 2020, we continued our efforts to raise power efficiency per data transmission in our telecommunications businesses. Our comprehensive activities to improve power efficiency included adjusting telecommunications facility intake/exhaust directions, using humidity sensors to improve airflow, optimizing the room temperature by controlling air-conditioning, and turning off unused equipment. As a result, power efficiency increased by 6.3 times, which exceeded the target of 4.5. In addition, when putting our solutions on the market, those assessed as having a certain level of environmental impact reduction benefits are given the NTT Group's Environmental Solutions Label to make visible their effects. Consequently, our contribution to reducing society's CO_2 emissions was 18.3 times the volume of our own CO_2 emissions, thereby exceeding our target of 15.3. Going forward, we will continue these efforts and strengthen the development of services and solutions that contribute to the realization of a decarbonized society.

In fiscal 2021, we will accelerate our efforts to introduce renewable energy (including virtually renewable energy by using non-fossil fuel certificates) and EVs and make the necessary updates to our Eco Vision 2030, based on the revisions to the NTT Group Environment and Energy Vision, to achieve carbon neutrality* by fiscal 2030.

*Targeted GHG Protocol: Scope 1 (direct emissions of greenhouse gases from our own sources) and Scope 2 (indirect emissions from the use of electricity, heat, and steam supplied by other companies)

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Reduction of Greenhouse Gases

Fiscal 2020 Results

CO₂ Emissions

FY2020 Target: **233** kt-CO₂ or lower

FY2020 Result: **192** kt-CO₂ **YoY −18.6%**

(FY2019 result: 235 kt-CO₂)

We were able to meet our CO_2 emissions target* for fiscal 2020, mainly by introducing renewable energy (including virtually renewable energy by using non-fossil fuel certificates), while further striving to save energy in telecommunications buildings such as data centers and promoting remote work, which resulted in a decrease in power consumption in offices. The CO_2 emissions per unit of sales were 0.18 t-CO_2 per millions of yen.

In fiscal 2021, the NTT Communications Group will work together to expand the introduction of renewable energy, continue its ongoing energy saving activities, and utilize R&D technologies and new measures to reduce CO_2 emissions by 20% from the previous fiscal year. Through these efforts, we plan to become carbon neutral by fiscal 2030, with virtually zero CO_2 emissions generated by our data centers, networks, and other facilities.

Furthermore, we intend to continue providing energy-efficient data centers and cloud services to society, having customer servers and their peripheral equipment, including air-conditioning, UPS, and lighting, integrated at our data centers, consequently improving the efficiency of public power consumption.
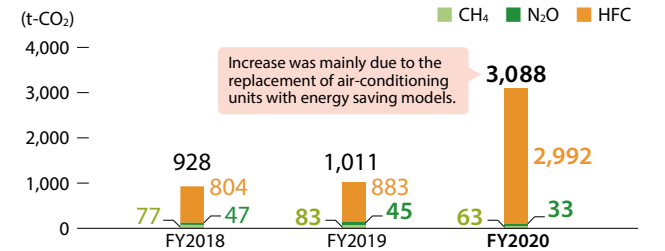
*CO_2 emissions were calculated using emission factors obtained from electric power companies.

◆ CO₂ Emissions from Business Activities

(kt-CO₂)

■ Electricity consumption*
■ Fuel for corporate vehicles and consumption of heavy oil and gas

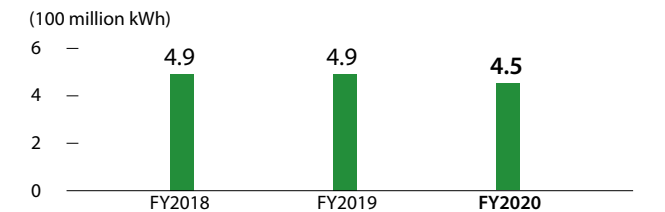|	FY2018	FY2019	FY2020
Total	242	235	192
Fuel	8	8	7
Electricity	234	227	185
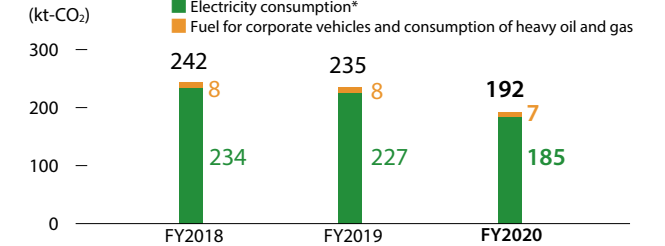
(Scope: NTT Communications Corporation and 15 Group companies)
*CO_2 emissions were calculated using emission factors obtained from electric power companies.

◆ Other Greenhouse Gas Emissions (Converted to CO₂ Equivalents)

(t-CO₂)

■ CH₄ ■ N₂O ■ HFC

Increase was mainly due to the replacement of air-conditioning units with energy saving models.

	FY2018	FY2019	FY2020
Total	928	1,011	3,088
HFC	804	883	2,992
N₂O	47	45	33
CH₄	77	83	63

(Scope: NTT Communications Corporation and 15 Group companies)
Emissions from Company vehicles, telecommunications buildings (including data centers), and offices Figures retroactively adjusted to reflect changes in the scope of calculation.

◆ Power Consumption (Scope 2)

(100 million kWh)

	FY2018	FY2019	FY2020
	4.9	4.9	4.5

(Scope: NTT Communications Corporation and 15 Group companies)

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Expanding the Use of Renewable Energy

Following our Odori Building in Chuo-ku, Sapporo, which became the NTT Group's first building to be powered with 100% renewable energy (including virtually renewable energy by using non-fossil fuel certificates) in April 2020, we remained committed and achieved a 100% renewable energy rate in 9 of our 89 telecommunications buildings.

In fiscal 2021, we will expand the use of renewable energy by greening an additional 22 buildings.

◆ **NTT Communications Odori, Sapporo 4 Chome Building**
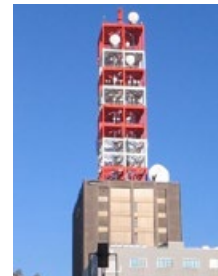
◆ **Rate of Renewable Energy Introduced (including virtually renewable energy by using non-fossil fuel certificates)**
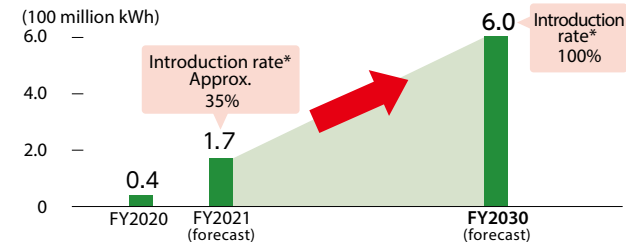
(Scope: NTT Communications Corporation and 15 Group companies)
*Targeted GHG Protocol: Indirect emissions from the use of electricity supplied by other companies in Scope 2.

Evaluation by Public Organizations

In fiscal 2020, NTT Communications was evaluated as "S" class, the highest rank, as an outstanding energy saving business that achieved its targets, under the business operator classification system implemented by the Agency for Natural Resources and Energy based on the Act on Rationalizing Energy Use (Energy Conservation Act).

Other evaluations include: "S" (Otemachi Place, Granpark Tower, and Shiodome Building), "AAA" (Akihabara UDX), and "A" (Sumitomo Fudosan Kachidoki Building) ratings from the Tokyo Metropolitan Government for our global warming countermeasure plans for five specified tenant buildings*, and an "AA" (energy derived carbon dioxide) rating from Nagano Prefecture for a report on the implementation of global warming countermeasures at the Ishido Building (Nagano City).

*Specified tenant buildings: Those occupied by businesses that use at least 6 million kWh of electricity per year or lease at least 5,000 m2 of floor space.

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Initiatives Related to Telecommunications Facilities (Including Data Centers)

FY2020 Results

CO_2 Emissions

FY2020 Target

217 kt-CO_2 or lower

FY2020 Result

176 kt-CO_2 YoY −19.3%

(FY2019 Result: 219 kt-CO_2)

In fiscal 2020, our CO_2 emissions decreased as a result of the augmented and expanded measures such as reducing electricity use in air-conditioning systems by making visible the power usage status of machinery and server rooms. Although there was a rise in demand for sales at data centers in Tokyo and Osaka as well as the installation of new cloud servers, we were nevertheless able to achieve our target.

CO₂ emissions are rising in fiscal 2021 due to ongoing robust data center and cloud service sales. However, we intend to meet our emissions target at a year-on-year reduction of 20% by expanding visualization of power usage, implementing newly developed technologies, improving airflow, and optimizing equipment for telecommunications services.

Building Cutting-edge Data Centers with Advanced Low-carbon Technologies

Data centers require a constant supply of electric power to operate. As an ICT company, we proactively introduce leading edge equipment and technologies for reducing the carbon footprint of our data centers.

For example, our relatively new data centers are equipped with improved cooling efficiency and lower power consumption in its air-conditioning systems owing to the deployment of an indirect external air-cooling system that applies the cooler temperatures outside the building and an air circulation method that blows air from the walls. In addition, we have installed an indirect evaporative air-conditioning system for the new data center in Tokyo. This made us the industry's first to use the system, which is expected to reduce the annual energy cost by 60% compared to a conventional air-conditioning system.

In addition to the air-conditioning system, we are working toward decarbonization by adopting a fire extinguishing system that does not affect the ozone layer, by using nitrogen gas, an alternative halon gas, and by introducing a solar power generation system and automatic motion sensor lighting system.

We are accelerating efforts to reduce the carbon footprint of our data centers by continuing to introduce leading-edge equipment and technologies.

Comparison to a conventional air-conditioning system | **60** % reduction per year
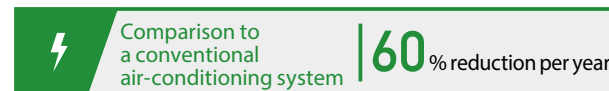
Start Providing Renewable Energy to Data Centers

With the expansion of the digital society, demand for power in data centers is increasing year by year. The issue is that while it is possible to improve the energy consumption efficiency of data centers, it is not possible to eliminate power consumption itself.

NTT Communications has started using renewable energy in the data centers it opened in Tokyo in fiscal 2020. These are capable of supplying power to the racks in the server room upon customer request, and we also offer Green Power Certificates to verify the use of green power.

Going forward, we will expand our efforts to spread the use of renewable energy not only inside the Company but with our customers.

Ongoing Efforts to Cut Air-conditioner Power Consumption at Telecoms Facilities

In past efforts to reduce power consumed by air-conditioning, we have implemented a range of measures, including SmartDASH® an automated system that visualizes temperature zones in server rooms, detects areas that are too cold, and automatically controls air-conditioning, and Aisle Capping, a technique that physically separates the intake (low temperature) and exhaust (high temperature) air from IT equipment by placing sidewalls and ceilings around IT equipment in the aisles between rows of server racks.

As a further step, we are moving beyond ICT-driven visualization of both temperature and power consumption to continue our work on more finely tuned air-conditioning power management. This includes calculating PUE (Power Usage Effectiveness) of each room to improve low-efficiency rooms

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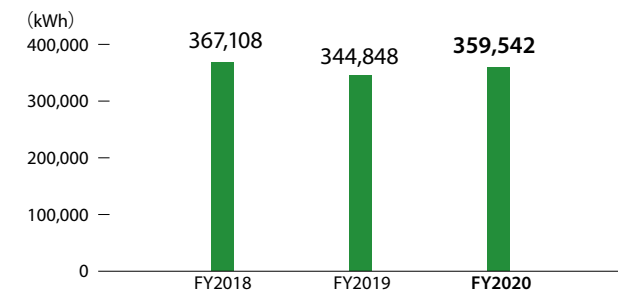by implementing thorough airflow improvement, temperature adjustments, and air-conditioning shutdown initiatives. To address the migration in ICT equipment from old models to highly efficient new ones, we will also seek to cut down on power consumed by ICT and air-conditioning systems through the timely discontinuation of use of the old models.

Introducing Solar Power Generation Systems that Actively Use Renewable Energy

Since 2009, NTT Communications has been engaged in power generation using solar power generation systems at its communications and data centers in Tokyo, and four system units are currently in operation.

◆ **Overall Amounts of Electricity Generated by Solar Panels at Data Centers**

(kWh)

	FY2018	FY2019	FY2020
	367,108	344,848	359,542

Electricity Generated by Solar Power in Fiscal 2020 — Approx. **360,000** kWh

Office Initiatives

Fiscal 2020 Results

CO_2 Emissions

FY2020 Target

16 kt-CO_2 or lower

FY2020 Result

15 kt-CO_2 YoY −10%
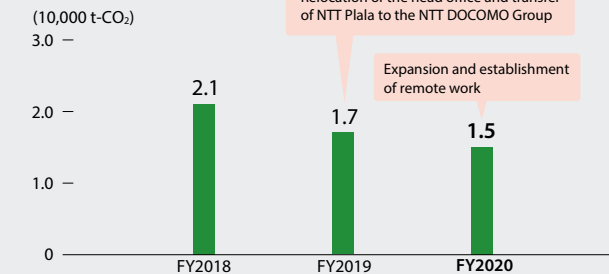
(FY2019 Result: 17 kt-CO_2)

In fiscal 2020, we successfully expanded and established remote work options for our employees in response to social demands brought on by the COVID-19 pandemic, as we had been working to improve our remote work environment as a Companywide initiative. As a result, power consumption in our offices was lower than we had initially expected, and significantly helped to achieve our CO_2 emissions reduction target.

In fiscal 2021, as one of our initiatives for growing remote work needs , we will adopt a free seating system and consolidate offices in the Tokyo metropolitan area, assuming that the maximum office attendance rate will be 30%.

We will work to convert electricity used in offices to renewable energy sources, just as Otemachi Place achieved zero emissions for all electricity used in September 2021, and set a target for reducing CO_2 emissions by 8% compared to fiscal 2020.

◆ **CO_2 Emissions from Offices**

(10,000 t-CO_2)

	FY2018	FY2019	FY2020
	2.1	1.7	1.5

Relocation of the head office and transfer of NTT Plala to the NTT DOCOMO Group

Expansion and establishment of remote work

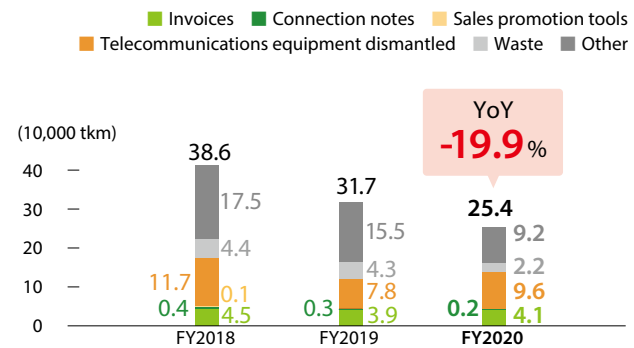(Scope: NTT Communications Corporation and 15 Group companies)

Transportation Initiatives

Fiscal 2020 Results

NTT Communications annually audits the amount of transportation for invoices, sales promotion tools, and office waste. Also, we voluntarily seek ways to streamline transportation such as by reducing the number, volume, and distance required for transport and by otherwise enhancing logistics.

In fiscal 2020, we worked to reduce the amount of paper by digitalizing sales tools and manuals as well as by expanding web-based applications. As a result, total transportation volume was 254,000 tkm. In fiscal 2021, we will continue our efforts to reduce transportation volume by promoting digitalization and the use of Web-based application systems.

◆ **Goods Transportation Volume under the Revised Energy Conservation Law**

Legend: Invoices ■ Connection notes ■ Sales promotion tools ■ Telecommunications equipment dismantled ■ Waste ■ Other

(10,000 tkm)

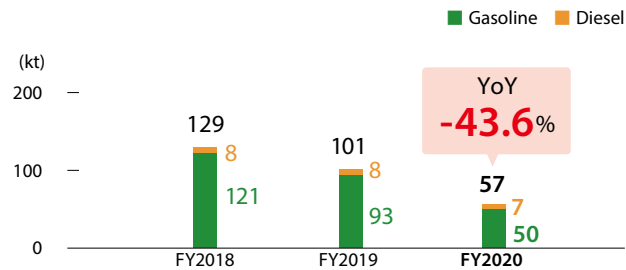|	FY2018	FY2019	FY2020
Total	38.6	31.7	25.4
Other	17.5	15.5	9.2
Waste	4.4	4.3	2.2
Telecommunications equipment dismantled	11.7	7.8	9.6
Sales promotion tools	0.1		
Connection notes	4.5	3.9	4.1
Invoices	0.4	0.3	0.2

YoY -19.9%

(Scope: NTT Communications Corporation)

Reducing Fuel Use by Company Vehicles

To help solve pollution problems and contribute to the realization of a low-carbon society, we are working to have EVs account for 100% of our corporate fleet by fiscal 2030 under the EV100 initiative declared by the NTT Group in October 2018. We are also reviewing the number of our sales vehicles and steadily promoting eco-driving and other measures to reduce the volume of fuel used by Company vehicles across the entire Group.

In fiscal 2020, we made full-scale efforts to introduce EVs, replacing 31 vehicles with EVs and scrapping 68 vehicles with the expansion of remote sales. As a result, gasoline and diesel consumption by Company vehicles in fiscal 2020 totaled 50,000 liters and 7,000 liters, respectively. The combined volume declined by 44,000 liters, or 43.6%, year on year.

◆ **Fuel Consumption by Company Vehicles**

Legend: ■ Gasoline ■ Diesel

(kt)

	FY2018	FY2019	FY2020
Total	129	101	57
Diesel	8	8	7
Gasoline	121	93	50

YoY -43.6%

(Scope: NTT Communications Corporation and 15 Group companies)

For more information on EV100, see:
https://japan-clp.jp/climate/reoh

Preventing Air Pollution and Promoting Energy Conservation through Electric Propulsion Ships

The subsea cable-laying vessels Kizuna and Subaru utilize an electric propulsion system* that optimizes the number of engines in operation in accordance with the load from the type of the subsea cable being laid and changes in the weather at sea. By controlling the number of engines in operation, we keep down the amount of heavy fuel oil A used while reducing emissions of, for example, CO_2, NOx, and SOx.

When in operation, we work to optimize fuel consumption by the most effective operating methods (including optimum route selection that takes into account the ship's speed, ocean currents, and weather conditions as well as other factors) in order to curtail the amount of CO_2 emitted based on a Ship Energy Efficiency Management Plan (SEEMP).

We are also carrying out the partial installation of LED energy saving lighting for the ships.

*An electric propulsion system is a type of ship that turns a generator with its engines, drives motors with the electrical power obtained, and turns propellers and bow thrusters for propulsion.

◆ **Cable-laying ship Kizuna (8,598 tonnes)**

◆ **Cable-laying ship Subaru (9,557 tonnes)**

Reducing the Carbon Footprint of Society through Our Products and Services

Environmental Labeling System for Solutions

The NTT Group is exploring the idea of an Environmental Labeling System for Solutions for self-certification of environmentally friendly ICT solutions and services. To qualify, ICT solutions and services will have to achieve CO_2 reductions of at least 15%, as assessed through the objective evaluation of environmental impact reduction benefits. The entire NTT Group provides these environmentally friendly services to help reduce the environmental impact of society

Although no service obtained the Environmental Labeling System for Solution in the NTT Communications Group in fiscal 2020, we have a cumulative total of 10 solutions registered. Looking ahead, we aim to obtain more certifications for the Environmental Labeling System for Solutions. We will strive to use environmentally friendly energy in our business activities.

Certified Solutions (Excerpt)	CO₂ Reduction Effect
Nexcenter	43%
Enterprise Cloud	74%
Arcstar IP Voice	30%
Arcstar Universal One Mobiles	24%

For more information on the Environmental Labeling System for Solutions, see:

https://group.ntt/en/environment/protect/lowcarbon/label/

Nexcenter, a Data Center that Combines Energy Efficiency and Performance

NTT Communications' data center (DC) service, the Nexcenter, offers leading-edge quality.

The Nexcenter proved to be capable of operating nonstop, 24 hours a day, 365 days a year, with full disaster countermeasures and of reducing CO_2 emissions associated with maintenance, operation, and the use of ICT equipment in a DC by 43% per year compared to a conventional DC with a rotary UPS*, water-cooled air-conditioning, and outdoor air-cooling systems.

*Integrated emergency power generator and UPS (uninterruptible power supply). In the event of a blackout or other power failure, power can be switched to a battery-equipped UPS to provide power until the emergency system is activated.

◆ Nexcenter's CO₂ Emissions per Year
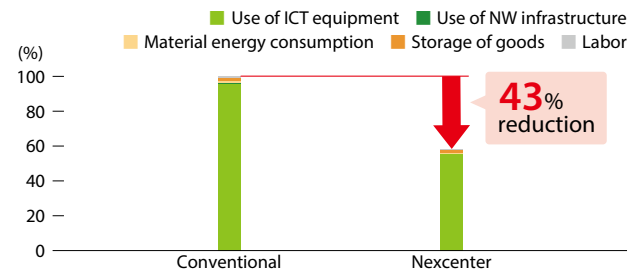
Note: Emissions are from Company vehicles, telecommunications buildings (including data centers), and offices. Figures retroactively adjusted to reflect changes in the scope of calculation.

Acquisition of the Eco ICT Logo

We conducted a self-assessment of our CO_2 reduction measures and submitted an application in accordance with the ICT Ecology Guidelines created by the ICT Ecology Guideline Council* and acquired the eco-ICT Mark.

The council created and published guidelines for appropriate CO_2 reduction measures to be implemented by telecommunications carriers, clearly defining the standards for procuring systems and data center services from the viewpoint of reducing power consumption. These guidelines have been subsequently revised, and version 8.2 was published in February 2020 (updated to version 9 in March 2021). We will continue to participate in this initiative and work to disseminate the guidelines throughout the Group on an ongoing basis.

*A council established on June 26, 2009 by five industry organizations: The Telecommunications Carriers Association, the Telecom Services Association, the Japan Internet Providers Association, the Communications and Information Network Association of Japan, and the ASP-SaaS-IoT Cloud Industry Consortium (designated nonprofit organization).

For more information on the Eco ICT Logo, see:
http://www.tca.or.jp/press_release/2010/0701_400.html
(Japanese only)

For more information on the self-assessment checklist, see:
https://www.ntt.com/about-us/csr/eco/ecoict.html
(Japanese only)

CSR Priority Activities

Implementing Closed-loop Recycling

Our Approach

As symbolized by SDG 12, "Responsible Consumption and Production," the thoroughness and extent of penetration of a recycling-oriented society continues to gain in importance as a problem shared by us all. To contribute to the realization of a recycling-oriented society, the NTT Communications Group works to improve reusing and recycling rates on a daily basis while building business models with low environmental impact. Specifically, we are working to reduce the volume of waste in the three areas of dismantled telecommunications equipment, construction waste, and office waste while also promoting reuse and recycling in various areas of our business.

Primary Concept

In order to contribute to the realization of a recycling-oriented society, we organize working groups in the three areas of dismantled telecommunications equipment, construction waste, and office waste, and we are cooperating with other NTT Group companies in the promotion of waste reduction and reuse and recycling in various areas of our business.
In addition to our internal efforts, we are leveraging our knowledge, technologies, and knowhow to contribute to the creation of a recycling-oriented society.

Main Achievements in Fiscal 2020 and Goals for the Coming Years

In fiscal 2020, the final disposal of waste from dismantled telecommunications equipment amounted to 3.1 tonnes, construction waste to 287.7 tonnes, and office waste to 10.5 tonnes. The total volume of final waste disposal decreased by 3.9 tonnes, compared to the previous fiscal year, to 301.3 tonnes, while the total volume of waste generated increased by 4,876.8 tonnes to 19,455.8 tonnes due to increased construction work for disposing concrete blocks. Going forward, we will thoroughly implement the 3Rs in our business activities.

◆ **NTT Communications Group Final Waste Disposal and Total Waste Generation**
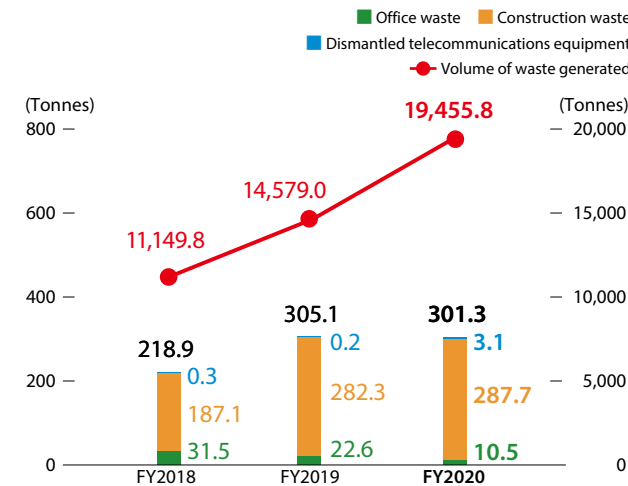
(Scope: NTT Communications Corporation and 15 Group companies)
Figures retroactively adjusted to improve accuracy.

◆ **Total Volume and Landfill Rate of Dismantled Telecommunications Equipment**
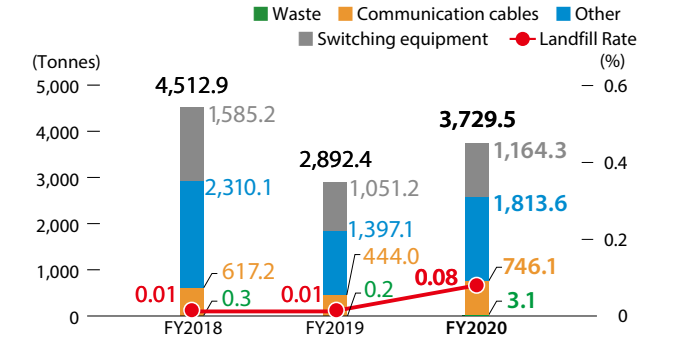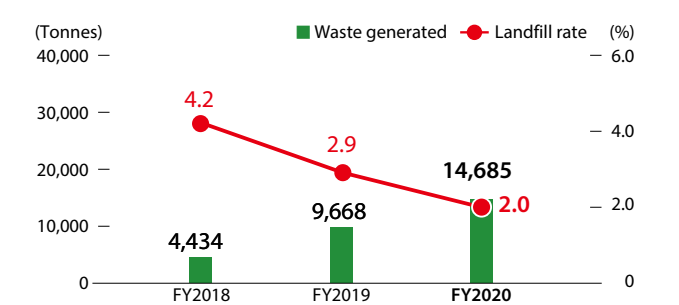
(Scope: NTT Communications Corporation and 15 Group companies)
Figures retroactively adjusted to improve accuracy.

◆ **Volume of Reused Fiber-optic Cable**
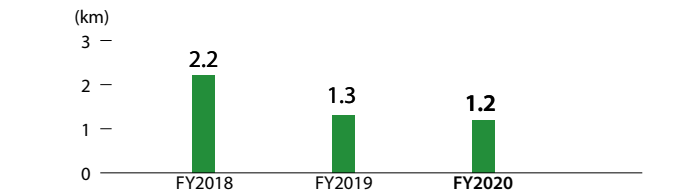
(Scope: NTT Communications Corporation and 15 Group companies)

◆ **Construction Waste Generation and Landfill Rate**

(Scope: NTT Communications Corporation and 15 Group companies)

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## Building Business Models with Low Environmental Impact

Effectively Using Water Resources

Water resources are indispensable for the survival of all living things, including humans, but the increasing world population and economic development have led to concerns over water shortages and pollution. We are striving to use water resources more effectively by recycling and reusing air-conditioning and cooling water in our data centers and switching to water-saving toilets in our major office buildings. We are also developing a water demand prediction system, as part of a social infrastructure that utilizes ICT, to contribute to addressing social issues related to water resources.

Initiatives to Improve the Landfill Rate

We believe that one of our most important obligations as an ICT services provider is to create business models that emphasize recycling. We are therefore carefully selecting waste processors for data centers, telecommunications buildings, and office buildings based on their recycling rates. In selecting waste processors, we seek to ensure proper disposal and improve the recycling rate by screening candidates based on our criteria and consigning work to businesses that meet the qualifications. As a result, the landfill rate of office waste, which was 6.1% in fiscal 2013, has been reduced to 1.0%, as of fiscal 2020.

◆ **Total Office Waste and Final Disposal Ratio**

(Scope: NTT Communications Corporation and 15 Group companies)
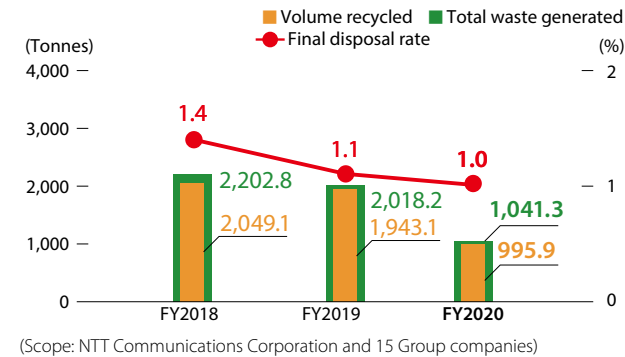
Promoting the Reuse of Fixed Assets

From the perspective of promoting the efficient operation and reuse of fixed assets across the Company, including small assets and equipment, we are matching organizations that need assets with those that do not. Thanks in part to this effort, in fiscal 2020 we reused 124 items of dismantled equipment, 7,897 units of equipment and packages overall, and 1.2 km of removed optical cable. In fiscal 2021, we will continue to promote the reuse of fixed assets and strive to reduce the amount of waste we generate.

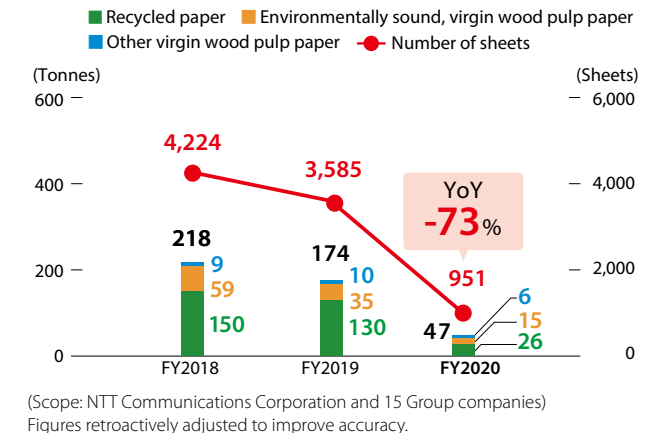## Thorough Implementation of the 3Rs in Office Buildings

Reduction in Paper Use for Business Purposes

NTT Communications is working to reduce its use of all kinds of paper for business purposes, including that for printing customer billing statements. In fiscal 2007, we established a

paper use indicator per full-time employee in order to reduce the use of office paper. Since then, we have been working to raise awareness among employees through various efforts such as curbing the use of paper and increasing the rate of double-sided printing by using printing log data from IC card multifunction printers, and collecting the initiative status data per individual and section and disclosing it to all employees on a monthly basis.

In fiscal 2020, we made significant progress in digitizing paper documents as part of our remote work initiative, resulting in 951 sheets of paper used per full-time employee (converted to A4-size office paper), a substantial decrease from fiscal 2019 (3,585 sheets).

◆ **Total and Per-employee Office Paper Use***

(Scope: NTT Communications Corporation and 15 Group companies)
Figures retroactively adjusted to improve accuracy.
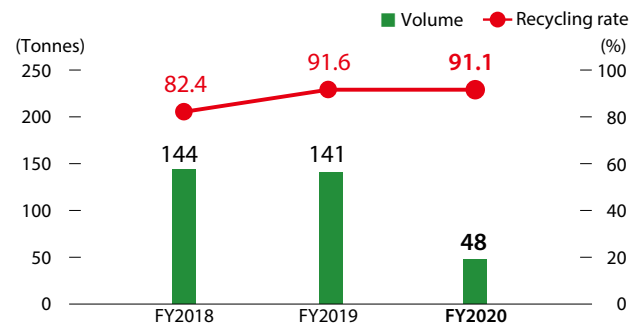
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Response to Plastics Pollution

Concern has been growing around the world over plastic waste, including the pollution of marine environments. NTT Communications upholds the implementation of closed-loop recycling as a CSR Priority and is working on reducing and promoting the recycling of plastic waste.

In fiscal 2020, the rate of plastic recycling in offices essentially remained flat, but the amount of plastic generated decreased significantly due in part to the expansion and establishment of remote work. We will continue addressing the concern over plastic pollution through our business activities.

◆ **Volume of Plastic Waste and Office Recycling Rate**

■ Volume ●- Recycling rate

(Tonnes)		(%)
250 —		— 100
200 —	82.4 91.6 91.1	— 80
150 —	144 141	— 60
100 —		— 40
50 —	48	— 20
0 —	FY2018 FY2019 **FY2020**	— 0

(Scope: NTT Communications Corporation and 15 Group companies)

CSR Priority Activities

Planning a Future of Co-existing with Nature

Our Approach

We place a high priority on conservation of biodiversity throughout our business activities, from the construction of facilities to their operation and dismantling, in addition to promoting preservation activities by inspecting the progress of initiatives, finding problems, and making improvements.

Moreover, we will implement multifaceted initiatives for environmental contribution activities, including participation in local conservation activities and the dissemination of information.

Development of Activities in Line with Action Guidelines

Having formulated the Biodiversity Action Plan, we have been proactively developing our approaches. There is a growing awareness on a global scale for biodiversity conservation. In the years to come, we will promote a progress check of efforts, identify issues, and promote improvements across the Group, including at overseas bases.

Primary Concept

As advocated in SDGs 14 and 15, conserving the biodiversity of life below water and on land, together with the prevention of global warming and the preservation of ecosystems, has recently developed into a major environmental challenge with regard to the creation of a sustainable society. NTT Communications has set "Planning a Future of Co-existing with Nature" as part of its environmental declaration and established a set of action guidelines with regard to biodiversity conservation in order to promote environmental preservation activities. Under these guidelines, the entire Group, including its overseas companies, will engage in activities that are in line with the Action Plan.

Biodiversity Action Plan

1. Basic Policy
- Development Centered on Business Activities
  The Group recognizes that all activity is inextricably linked to the planet and to biodiversity, understands that the scope and impact at home and overseas are related depending on the nature of a business, and promotes initiatives that are recognized as having a preservation effect
- Development Centered on Contribution to Society
  In partnership with its stakeholders, the Group widely promotes initiatives toward the preservation of biodiversity, regardless of their relevance to its business.

2. Action Guidelines
- Implement actions that take into account the preservation of biodiversity in business activities
- Contribute to the preservation of social biodiversity in business activities.
- Deepen understanding of biodiversity, promote nature conservation activities together with employees, their families, and the planet.

Main Achievements in Fiscal 2020 and Goals for the Coming Years

We engaged in building, maintaining, and repairing facilities in compliance with the Biodiversity Action Plan as well as the concept of the environmentally friendly Green Building*, established by the NTT Group in addition to ongoing initiatives that leverage the features of ICT enterprises. NTT Resonant disseminated information and raised awareness regarding environmental issues through the "goo Green Label," where users can make a donation to environmental preservation organizations by changing their "goo" web portal to "goo Green Label."

In fiscal 2021, we will continue promoting initiatives by leveraging our capacity to serve society as an ICT enterprise.

*Environmentally friendly buildings with reduced waste emissions that make use of energy, water, and air-conditioning systems to reduce their consumption of natural resources.

Assessing Biodiversity

NTT Communications is committed to biodiversity conservation toward realizing a future of co-existing with nature. It operates biodiversity-friendly facilities and leverages ICT to minimize the impact on ecosystems, based on an understanding of the relationship between biodiversity and our business.

We also strive to pass on abundant biodiversity to future generations through actions to protect ecosystems by cable-laying ships and by assessing the potential environmental impact from the construction and dismantling of relay stations, and we collaborate with stakeholders on these activities as well.

Considerations for Building Construction

Biodiversity-conscious Guidelines

When constructing new buildings such as data centers, we strive to understand the historical, social, geographical, and biological environment characteristics of the building site and its surrounding areas in accordance with the NTT Group's Green Design Guidelines for Buildings, and we reflect that understanding into our designs insofar as possible.

Along with these considerations, we ensure that construction is completed with consideration for minimal noise and vibration and with attention to community beautification during the work. Furthermore, our outdoor air-conditioning units and emergency power generators are designed to generate exhaust heat and noise levels that do not adversely affect the community.

Local Landscaping and Greening

We consider it is important to take into consideration for biodiversity in facility designs toward contributing to local greenery in our surroundings.

At the Tokyo No. 6 Data Center, one of the largest of such facilities in Tokyo, we have been working closely with the community to promote greening activities by applying a subsidy from the Tokyo Metropolitan Park Association's Urban Green Fund. The green spaces at the site have been divided into two zones, spring/summer and autumn/winter, and planted accordingly so that visitors can enjoy flowers there throughout the year. We seek to achieve harmony between the data center and the surrounding environment. For example, we simulated a wind environment around the building and planted evergreen trees in the southwest corner, which is exposed to wind.

◆ Spring/summer zone   ◆ Autumn/winter zone

Laying Subsea Cables

In constructing its subsea communications cable network, NTT Communications' fundamental policy is to prevent marine pollution. We are signatories to treaties on the prevention of marine pollution and, in addition to complying with environmental legislation, undertake initiatives that place importance on coexistence with marine organisms and the fisheries industry.

Group company NTT World Engineering Marine Inc., which handles the laying, burying, and maintenance of subsea cables, develops business with a strong awareness of the need to preserve marine environments.

Considerations for the Impact of Laying Subsea Cables

Prior to subsea cable-laying and burying work, we conduct an environmental assessment and cooperate with related government authorities and municipalities in carefully designing cable routes and drawing up construction plans. For example, we duly consider shallow areas for preserving marine environments and generally exclude coral reefs and other inhabited areas when designing cable routes, insofar as possible, or transplanting them outside the cable-laying area.

There are also cases in which minesweeping operations are undertaken on the seabed prior to laying or burying the cables. We collect debris from the seabed, including fishing nets, rope, and wire pulled out by the minesweeping operations, and we properly process this as industrial waste after returning to port.

◆ Cables laid on sand to avoid coral reefs

◆ Debris collected from the seabed

Measures to Preserve Ecosystems Taken on Cable-laying Ships

There are concerns that the marine organisms that infest the ballast water used to maintain the stability of vessels will destroy ecosystems after being discharged into other parts of the ocean as vessels navigate from one area to another. In order to prevent the destruction of ecosystems by ballast water, the subsea cable-laying vessels Kizuna and Subaru are equipped with ballast water treatment equipment, in accordance with the Ballast Water Management Convention* set by the International Maritime Organization (IMO), so that they discharge water that does not contain marine organisms.

Furthermore, the ballast water treatment equipment installed on both of our cable-laying vessels is an ultraviolet sterilization system, which does not use chemical substances and is thus regarded as having low environmental impact. With regard to ship paints, we use those that are in compliance with the AFS Convention (International Convention on the Control of Harmful Anti-fouling Systems on Ships), which regulates the use of anti-fouling paint containing organic tin compounds on the bottom of hulls.

*Adopted by the IMO in 2004, the convention took effect on September 8, 2017 to prevent the movement of marine organisms across habitat boundaries from affecting the marine environment.

Considerations for the Construction and Dismantling of Relay Stations

Wireless relay stations, the backbone of data communication networks, are often in areas rich with nature such as on hills and islands, so we emphasize consideration for biodiversity in their operations.

As of March 31, 2021, 8 of our 42 wireless stations were in national parks or quasi-national parks. We build micro-roads if needed for the patrol and maintenance of these stations while strictly adhering to the law and our own environmental assessment standards. These assessments identify specific concerns associated with construction processes to enable the application of multifaceted approaches for preventing or minimizing impact on the ecosystem.

In addition, when dismantling a wireless station, we strive to restore the environment to its original state by paying careful attention to the presence of rare animals and plants and using local soil for restoration while also consulting local environmental organizations and residents.

Moreover, we have been offering our stations to support wildlife conservation activities. For example, every year since September 2012, the Amami Ornithologists' Club, an NPO, has convened a meeting for observing the migration of Chinese sparrow hawks on the premises of our wireless relay station in Amami City, Kagoshima Prefecture. Although wireless relay stations are typically off limits, these events are held under the observation of employees in response to a request that identified this area as particularly well suited for monitoring the ecosystem.

◆ Chinese sparrow hawk migration

Contributing to Ecosystem Conservation Using ICT

The damage to agriculture caused by wild boars and deer is becoming an increasing concern across Japan's farming and mountain communities, and traps are being set to minimize damage.

NTT PC Communications Inc. has developed Mimawari Rakutaro as one part of its IOT service. This is a wildlife observation and alarm device that uses an outdoor sensor that transmits data. In this manner, the company is contributing to countermeasures aimed at minimizing the damage caused by wildlife. Employing the communication services of NTT Docomo to transmit a message automatically to a designated mail address when a trap has been activated, the Mimawari Rakutaro device has brought about a significant reduction of the burden placed on patrols. As one version of Mimawari Rakutaro also comes equipped with a camera, the transmission of images further ensures an immediate response should a person be accidentally caught in a trap. Since first going on sale in July 2011, Mimawari Rakutaro has been used by more than 50 local governments across Japan and contributed to ecosystem conservation in woodlands. For example, Saga City is utilizing subsidies for a Ministry of Internal Affairs and Communications ICT project to realize more efficient countermeasures against wildlife damage.

◆ Mimawari Rakutaro

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Contribution through the Provision of Information

In response to growing public expectations that the ICT business provide useful information through Internet media, we will continue to proactively use a variety of online media to communicate the importance of biodiversity and encourage a diverse range of people to engage in ecosystem conservation.

"goo Green Label" Activities

The "goo Green Label" portal is an initiative for donating a portion of the profits generated through use of the site to organizations engaged in environmental protection and social activities. All users can participate in this initiative simply by changing the top design version of the "goo" web portal to "goo Green Label" and using the search engine. A total of 59 companies, including those in the NTT Group, have signed up as Corporate Partners, a program that has been recommended for in-house use within those companies. Since its inception in August 2007, donations totaling 58.79 million yen have been made to 46 organizations, the majority of which are NPOs engaged in global environmental protection activities.
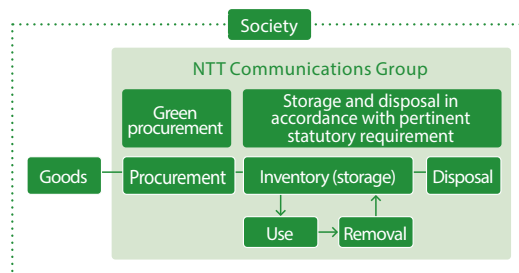
Preventing Environmental Pollution

Our Approach

We are seeking to minimize environmental risks associated with business activities, such as pollution and leaks of hazardous substances, by formulating guidelines for introducing low-emission vehicles, improving equipment and operations, and bolstering management, education, and training.

Chemical substances are properly managed by our maintenance departments in accordance with the Waste Management and Public Cleansing Act, the Law Concerning Special Measures Against PCB Waste, and the Electricity Business Act, which include the assigning of managers. While conducting storage inspections on a regular basis, we maintain a robust system to ensure the rapid coordination of information among senior management and the president in the event of an earthquake or other disaster. We always keep abreast of the revisions to laws through training sessions, share information among environmental working groups, and optimize our operations in a timely manner.

◆ **Preventing Environmental Pollution at Each Business Stage**

Society

NTT Communications Group

Green procurement

Storage and disposal in accordance with pertinent statutory requirement

Goods → Procurement → Inventory (storage) → Disposal

Use → Removal

Primary Concept

The fact that various effluents and wastes are being generated from production and consumption activities and are causing a rise in environmental pollution is a social issue.

As symbolized by SDG 12, "Responsible Consumption and Production," NTT Communications is reducing wastes and effluents generated from its business activities and is managing and handling hazardous substances properly to prevent environmental pollution as well as to promote the realization of a safe and secure living environment.

Main Achievements in Fiscal 2020 and Goals for the Coming Years

We established our policy and set a target for having electric vehicles account for 100% of the corporate fleet by fiscal 2030. In practice, we reviewed the number of sales vehicles owned and promoted eco-driving to reduce the fuel consumption of Company vehicles across the Group.

In fiscal 2020, we focused on the full-scale introduction of EVs, and with the expansion of remote sales activities, we succeeded in reducing the number of vehicles by 26% year on year and CO_2 emissions by 44%. We will continue to review the number of vehicles owned and promote the use of EVs.
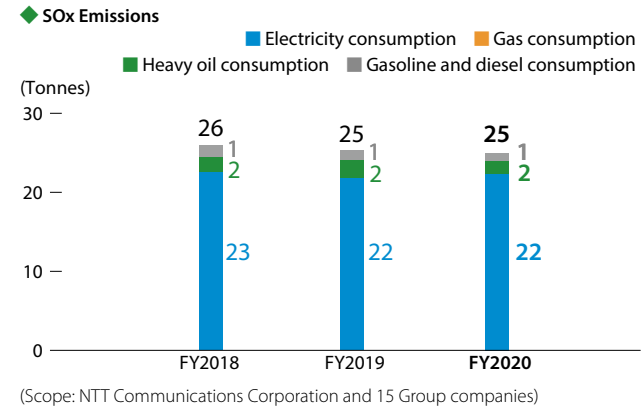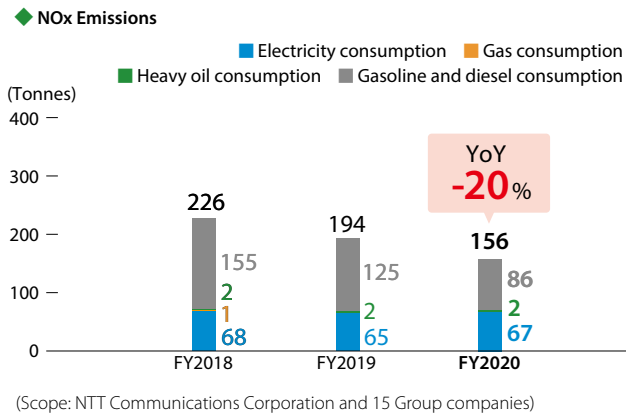
Initiatives to Address Environmental Pollutants

Preventing Air Pollution

Our business activities produce NOx and SOx emissions, which cause air pollution. Among NOx emissions, 55% are attributable to the use of gasoline and diesel in our operational vehicles, while the remaining 45% are emitted as a result of electric power generation at communications buildings and other facilities. Most SOx (89%) is emitted during the generation of electricity that we use.
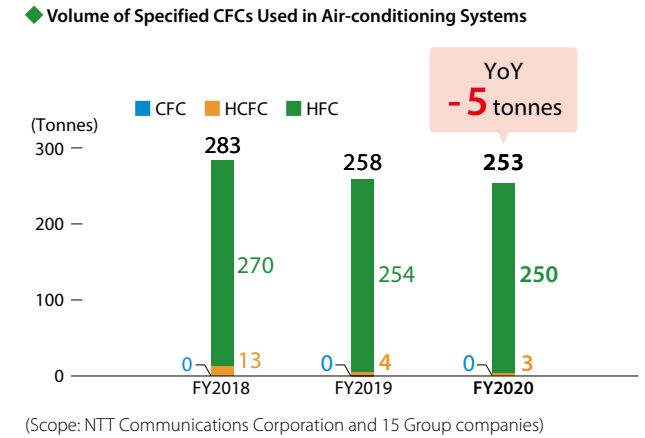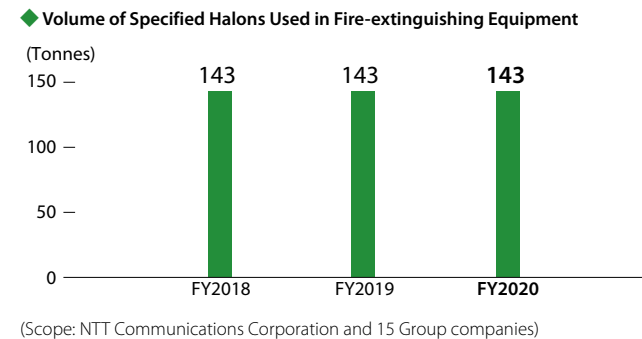
In fiscal 2020, NOx and SOx emissions were 156 tonnes (a year-on-year decrease of 20%) and 25 tonnes (a year-on-year decrease of 1%), respectively, as a result of a decline in the operation of commercial vehicles. We will continue to review our vehicle fleet numbers and promote the use of EVs toward contributing to the mitigation of global warming and prevention of air pollution.

◆ NOx Emissions

■ Electricity consumption   ■ Gas consumption
■ Heavy oil consumption   ■ Gasoline and diesel consumption

(Tonnes)

YoY
-20%

FY2018: 226 (155, 2, 1, 68)
FY2019: 194 (125, 2, 65)
FY2020: 156 (86, 2, 67)

(Scope: NTT Communications Corporation and 15 Group companies)

◆ SOx Emissions

■ Electricity consumption   ■ Gas consumption
■ Heavy oil consumption   ■ Gasoline and diesel consumption

(Tonnes)

FY2018: 26 (1, 2, 23)
FY2019: 25 (1, 2, 22)
FY2020: 25 (1, 2, 22)

(Scope: NTT Communications Corporation and 15 Group companies)

Controlling Ozone-depleting Substances

We dispose of ozone-depleting substances in an appropriate manner. The volume of specified halons used in our fire extinguishing equipment in fiscal 2020 was approximately 143 tonnes, unchanged from the previous fiscal year.

Meanwhile, the volume of specified chlorofluorocarbons (CFCs) used in our air-conditioning equipment in fiscal 2020 fell by around 5 tonnes from the preceding fiscal year to approximately 253 tonnes.

◆ Volume of Specified Halons Used in Fire-extinguishing Equipment

(Tonnes)

FY2018: 143
FY2019: 143
FY2020: 143

(Scope: NTT Communications Corporation and 15 Group companies)

◆ Volume of Specified CFCs Used in Air-conditioning Systems

■ CFC   ■ HCFC   ■ HFC

(Tonnes)

YoY
-5 tonnes

FY2018: 283 (0, 13, 270)
FY2019: 258 (0, 4, 254)
FY2020: 253 (0, 3, 250)

(Scope: NTT Communications Corporation and 15 Group companies)

Addressing Asbestos Concerns

Asbestos remediation for buildings and offices involved the implementation of airborne asbestos surveys of buildings for which asbestos had been spray-applied in order to confirm that levels did not exceed statutory limits, as revised in September 2006. In fiscal 2019, we conducted a survey targeting four buildings and confirmed that airborne emissions were below the statutory limit at all of the buildings subject to legal compliance. We are currently removing asbestos from a building where it is possible. Looking ahead, we will continue appropriate measures, such as the removal, containment, or enclosure of asbestos in buildings where it is present, in compliance with manuals issued by the Japan Construction Occupational Safety and Health Association and local authorities.

Storage and Management of PCBs

NTT Communications appropriately manages devices that contain polychlorinated biphenyls (PCBs). Such devices were used in the past as insulators for electrical facilities. As a policy for PCB storage, we have established a set of guidelines prescribing early detoxification treatment as well as methods for ascertaining conditions and management when the use of equipment containing PCBs is to be continued.

In fiscal 2020, we conducted a survey to uncover electrical equipment that may contain PCBs. We plan to continue detoxifying any newly discovered equipment containing PCBs in the coming fiscal years.

◆ **Number of Transformers Stored**

	FY2018	FY2019	FY2020
Number of Transformers	0	0	6

(Scope: NTT Communications Corporation and 15 Group companies)

◆ **Number of Capacitors Stored**

		FY2018	FY2019	FY2020
Number of Capacitors Stored	High-voltage capacitors	0	0	0
	Low-voltage capacitors	0	0	2

(Scope: NTT Communications Corporation and 15 Group companies)

◆ **Number of Electric Ballasts Stored**

	FY2018	FY2019	FY2020
Number of Electric Ballasts Stored	1,488	123	363

(Scope: NTT Communications Corporation and 15 Group companies)

### Chemical Substance Management in Anticipation of Emergencies

Against a backdrop of natural disasters occurring frequently on a global scale, there is a growing public concern over the management systems for environmental pollutants in times of emergency. As an owner and operator of IT infrastructure, we have been thorough in establishing storage and management systems while also bearing in mind the possible occurrence of unlikely events. In the management of PCBs in particular, we have implemented a management system while taking into account factors such as earthquakes, fires, flood controls, lightning protection, puncture resistance, ventilation, and security. By carrying out periodic inspections, we are constantly confirming that such substances are

properly managed. Moreover, we maintain a system for quickly confirming the secure storage of chemical substances and reliably ensuring operational readiness in the event of major earthquakes and other disasters in order to prevent damage when one strikes as well as in the occurrence of secondary disasters.

◆ **PCB storage location**

◆ **Storage of PCBs**
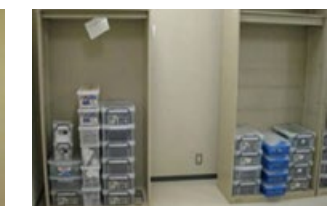
Cases of Major Leakage

There were no incidents involving major leakages in the NTT Communications Group in fiscal 2020.

Transport, Import, and Export of Toxic Waste

Under a disposal plan based on our policy of detoxifying PCBs at the earliest date, we processed waste stored in Kyushu and Hokkaido in fiscal 2014 and in Tokyo in fiscal 2016, and the remaining waste stored in Osaka was detoxified in fiscal 2019.