Environment

04

Contributions to the Global Environment

Expectations are high for activities to protect that global environment at ICT companies. Thus far, we have established a Green ICT Vision 2020 that focuses on three areas—the realization of a low-carbon society, the promotion of a recycling-based society, and the preservation of biodiversity—and are promoting a multifaceted approach.

The proactive promotion of activities necessitates the upgrading and strengthening of an environmental management framework. We will make efforts to strengthen a global, seamless environmental management framework as the NTT Group. To this end, we will aggressively pursue protection of the global environment in all processes pertaining to our business activities, ranging from reduced electricity usage and improvements in efficiency as well as procurement to operations and waste disposal.

We will thereby help to establish an environmentally friendly society and ensure that the Earth remains in a healthy state for future generations through our core businesses.

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 Green ICT Vision that applies that 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 Group-wide consideration and action 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 being disseminated among employees of the Group as a set of guidelines for the implementation of environmental protection activities.

→Click here for details regarding the NTT Communications Group Global Environment Charter.

Green ICT Vision 2020

In fiscal 2010, the NTT Communications Group formulated Green ICT Vision 2020, which sets forth new policies for environmental protection activities and numerical target values for fiscal 2020. We are promoting our three "eco" initiatives of Green of ICT, Green by ICT, and Green with Team NTT, in order to help enrich and streamline social activities as well as to support the harmonious coexistence of all living things on our beautiful planet.

The promotion of these initiatives enables us to address the need to achieve a low-carbon society, promote a recycling-based society, and preserve biodiversity, as well as to help create a society that cares and shows consideration for the global environment, humans, and other living things.

Green of ICT:	**Reducing the increasing environmental impact of ICT equipment and facilities through the use of technology and process innovations.**
Green by ICT:	**Reducing society's environmental impact through the use of ICT to improve transportation efficiency for people and goods, and by moving away from resource-intensive operations to, for example, a paperless workplace.**
Green with Team NTT:	**Initiatives to reduce environmental impact in employees' homes and local communities.**

Activity Achievements in Line with CSR Indicators

In fiscal 2015, in line with the three focus areas—the realization of a low-carbon society, the promotion of a recycling-based society, and the preservation of biodiversity—we worked to reduce the environmental impact associated with our business activities and in particular took steps to reduce our CO_2 emissions and improve the final disposal rate both in Japan and overseas. In specific terms, we achieved results across the Group, including the expansion of environmental management at overseas bases, the extension of greenhouse gas reduction initiatives across our global operations, and the implementation of measures to improve the final disposal rate.

In fiscal 2016, we will maintain our focus on reducing environmental impact both in Japan and overseas. In advancing a variety of global measures, we will continue to channel our energies toward reducing electric power consumption, recycling waste, cutting back the volume of paper use, and promoting initiatives aimed at preserving biodiversity.

Fiscal 2015 Activity Achievements

Priority Activity	Measure	Fiscal 2015 Targets		Fiscal 2015 Achievements		
		Qualitative Target(s)	Quantitative Target(s)	Status of Specific Activities	Quantitative Result	Self-assessment
Creating a Low-Carbon Society	Reduction of own CO_2 emissions	Reduce electricity use through energy-saving activities, R&D technologies, and operational improvements	CO_2 emissions: 278,000 t-CO_2 or less (CO_2 emission coefficient is 0.33 kg-CO_2per kWh.)	• Expanded buildings with SmartDASH and climate controls for reducing the electricity used in air conditioning systems, upgraded to LED lighting, turned off power to equipment used in degenerated services • Continued promotion of energy-saving activities	266,000 t-CO_2	★★★
Promoting a Recycling-Oriented Society	Improve recycling rates	Thoroughly implement the 3Rs—reduce, reuse, recycle—for all resources associated with our business activities.	Recycling rates Dismantled telecommunications equipment: At least 99% Construction waste (Specified Materials): At least 99% Construction waste (Other): At least 75% Office waste: At least 88%	• Improved the recycling rate for glass and ceramic scrap from dismantled telecommunications equipment • Subcontracted to processing companies with higher recycling rates	Recycling rates Dismantled telecommunications equipment: At least 99.9% Construction waste (Specified Materials): At least 100% Construction waste (Other): At least 71.5% Office waste: At least 89%	★★
	Reduce paper usage	• Strengthen measures at the level of individual organizations based on data on multifunction printer usage • Promote paperless working style that utilizes ICT equipment	8,500 sheets per person	• Strengthened measures at the individual organization level based on multifunction printer usage data • Promoted paperless meetings • Reduced paper usage by reassessing business systems	6,565 sheets per person	★★★
Biodiversity Conservation	Biodiversity conservation using ICT	Proactively develop and provide products and services that contribute to the preservation of social biodiversity	—	• Worked to conserve coral reefs through business activities at NTT Plala • Undertook wildlife damage countermeasures that efficiently employ IT at NTTPC • Disseminated information about the environment and ecology at NTT Resonant (goo Green Label)	—	★★★

Self-assessment: ★★★ Good progress ★★ Basically on target ★ Slightly behind target

(Scope: 14 domestic companies of the NTT Communications Group)

*1 The CO_2 emission coefficient is 0.33 kg-CO_2 per kWh.

*2 Final disposal rate is calculated as the volume of waste transported to the final processing site divided by the total volume of waste generated.

Activity Indicators and Achievements (at Overseas Bases) Item

Item	Implementation rate*
Switch off unnecessary lighting, air-conditioning, and PCs	80%
Promote the sorting and recycling of waste according to the circumstances of each building	43%
Implement double-sided and double-page office paper printing	75%

* Implementation rate = Number of bases implementing target ÷ total number of bases

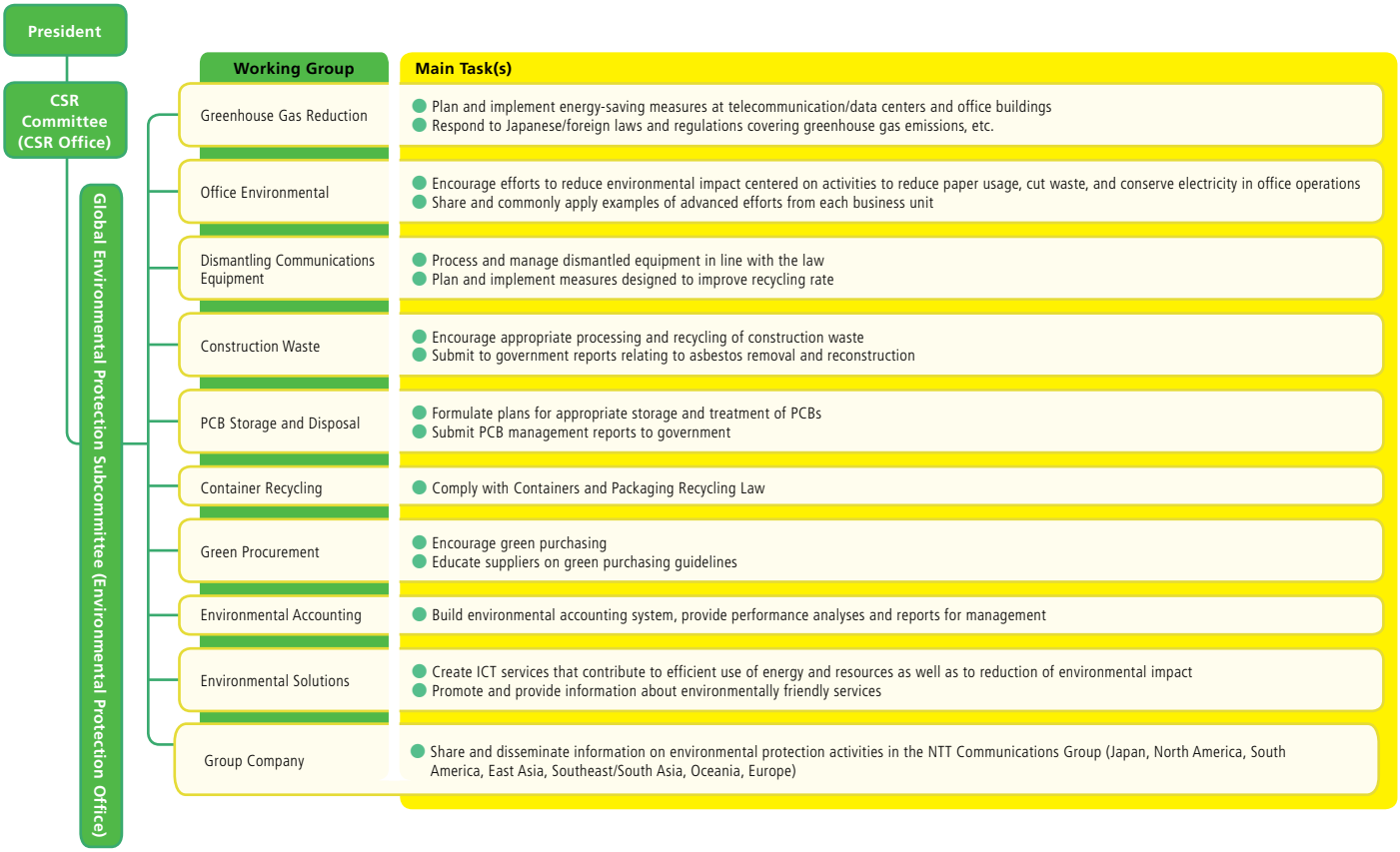
Environmental Management

Promotion Framework toward Reduction of Environmental Impact and Fiscal 2015 Initiatives

In order to continuously promote environmental protection initiatives, we formed a working group for each issue, involving the entire NTT Group in tackling environmental issues. Specifically, we hold Environmental Protection Subcommittee meetings at Group companies twice a year to formulate an overall plan encompassing a wide range of issues, including the reduction of greenhouse gas emissions and waste and the promotion of environmental solutions. Through these meetings, we also share information on the results of actions taken and promote the horizontal deployment of various initiatives. In recent years in particular, we have been making efforts to ascertain and curb environmental impact by means of Scope 3 at the supply chain level and have expanded the scope of the categories covered since fiscal 2014.

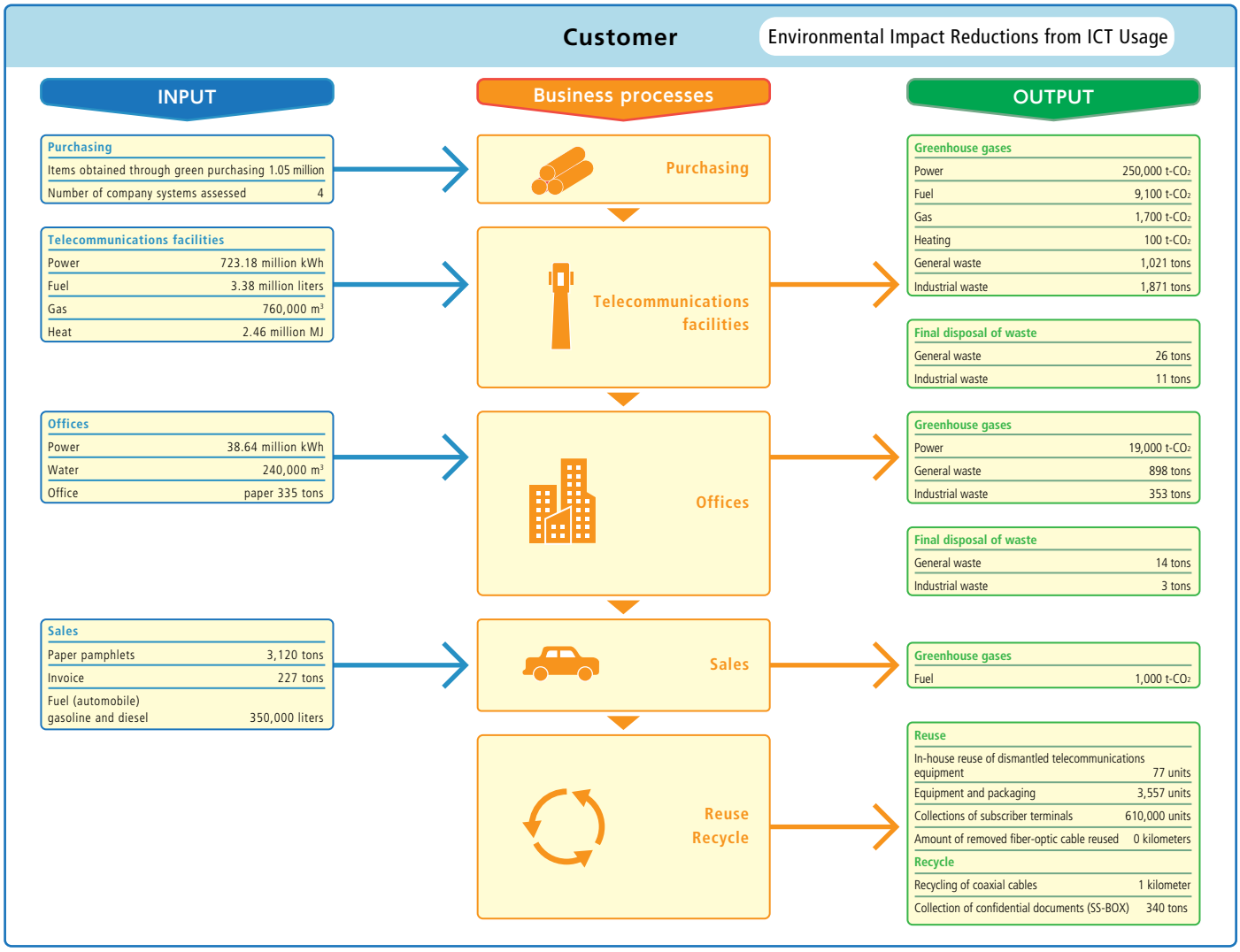
As far as the environmental management structure for our bases in Japan is concerned, we are promoting environmental protection activities at 14 companies. At our overseas bases, with a view to promoting global environmental management we are expanding our management bases, assigning officers responsible for environmental matters, gathering activity information, and encouraging the sharing of information between bases in Japan and overseas. In the years to come, we will hold global environmental management meetings and would like for these to lead to further reductions in environmental impact.

Environmental Protection Framework



Working Group	Main Task(s)
Greenhouse Gas Reduction	● Plan and implement energy-saving measures at telecommunication/data centers and office buildings ● Respond to Japanese/foreign laws and regulations covering greenhouse gas emissions, etc.
Office Environmental	● Encourage efforts to reduce environmental impact centered on activities to reduce paper usage, cut waste, and conserve electricity in office operations ● Share and commonly apply examples of advanced efforts from each business unit
Dismantling Communications Equipment	● Process and manage dismantled equipment in line with the law ● Plan and implement measures designed to improve recycling rate
Construction Waste	● Encourage appropriate processing and recycling of construction waste ● Submit to government reports relating to asbestos removal and reconstruction
PCB Storage and Disposal	● Formulate plans for appropriate storage and treatment of PCBs ● Submit PCB management reports to government
Container Recycling	● Comply with Containers and Packaging Recycling Law
Green Procurement	● Encourage green purchasing ● Educate suppliers on green purchasing guidelines
Environmental Accounting	● Build environmental accounting system, provide performance analyses and reports for management
Environmental Solutions	● Create ICT services that contribute to efficient use of energy and resources as well as to reduction of environmental impact ● Promote and provide information about environmentally friendly services
Group Company	● Share and disseminate information on environmental protection activities in the NTT Communications Group (Japan, North America, South America, East Asia, Southeast/South Asia, Oceania, Europe)

Fiscal 2015 Material Flow



In performing these calculations, we have referred to unit emission databases and other materials—produced through studies by the Ministry of the Environment and other government ministries and agencies—and expanded the scope of target categories. Of the 15 target categories, our calculations include 10 that are relevant.

■ Volumes of Scope 3 Emissions by Category

Categories	Share	Greenhouse Gas Emissions (t-CO_2)
1 Purchased goods and services	13.13%	546,620
2 Capital goods	15.47%	644,126
3 Fuel and energy activities not included in Scope 1 and 2	1.97%	76,565
4 Upstream transportation and distribution	0.13%	5,218
5 Waste generated through business activities	0.01%	219
6 Business travel	0.37%	14,478
7 Employee commutation	0.32%	12,270
8 Upstream lease assets	0.00%	0
9 Downstream transportation and distribution	0.00%	0
10 Processing of products sold	0.00%	0
11 Use of products sold	63.30%	2,460,312
12 Disposal of products sold	2.61%	101,263
13 Downstream leased assets	0.00%	0
14 Franchise	0.65%	25,394
15 Investment	0.00%	0
TOTAL	100.00%	3,886,464

Environmental Accounting in Fiscal 2015

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 Environmental Accounting Guidelines 2005, issued by the Ministry of the Environment, and NTT Group Environmental Accounting Guidelines. The environmental conservation cost in fiscal 2015 declined by approximately ¥1.12 billion year on year to ¥1.91 billion, consisting of around ¥0.7 billion in investments and about ¥1.21 billion in expenses, owing to the completion of investment plans for the building out of systems to reduce air conditioner electricity usage.

On the other hand, the economic benefit derived from environmental conservation in fiscal 2015 decreased by approximately ¥0.87 billion from the previous fiscal year to ¥1.71 billion. Equipment re-use had the effect of reducing the cost of new purchases by around 70% compared with the previous year.

■ Environmental Conservation Costs (Categories Corresponding to Business Activities) (Millions of yen)

Category	Key Measures		Investment		Expenses	
			FY2014	FY2015	FY2014	FY2015
(1) Business area cost			1,606	693	415	468
Breakdown	1. Pollution prevention costs	• Oil tank facility for power generator use • Management of items using PCBs	121	117	112	24
	2. Global environmental conservation costs	• Measures to reduce CO_2 emissions resulting from electricity use	1,485	576	89	174
	3. Resource circulation costs	• Waste disposal and reuse expenses	0	0	213	270
(2) Upstream/downstream costs	• Measures to recover, recycle and reuse telecommunications equipment		114	7	755	496
(3) Administration costs	• Environmental conservation management activities		—	0	74	69
(4) R&D costs	• Allocated portion of NTT Group environmental R&D costs		—	0	56	169
(5) Social activity costs	• Costs of supporting volunteer participation		—	0	3	5
(6) Environmental remediation costs			—	0	0	0
Total			1,719	699	1,303	1,206

■ Economic Benefit Associated with Environmental Conservation Activities (Real Financial Impact) (Millions of yen)

		FY2014	FY2015
Revenue	Revenues from sales (cables, metal scrap, etc.)	185	90
Cost reductions	Reductions in expenses derived from measures such as reduced electricity usage	795	722
	Reductions in cost of purchases due to reuse of dismantled telecommunications equipment	1,114	408
	Decrease in postal and paper costs from utilization of Mypage	475	480
	Other	7	10
Total		2,576	1,710

Target period: April 1 - March 31
Scope: 14 domestic companies of the NTT Communications Group
Tabulation and disclosure: Figures were tabulated in line with the Ministry of the Environment's Environmental Accounting Guidelines 2005 and NTT Group Environmental Accounting Guidelines. Expenses include personnel expenses but exclude depreciation.

Environmental Management Structure

Acquiring ISO 14001 Certification

Five companies within the NTT Communications Group had acquired ISO 14001 certification as of March 31, 2016. Through contracts with outside environmental consultants, certified departments and companies undergo internal audits once a year to ensure appropriate implementation of environmental management and continual improvements that will allow a steady reduction of the environmental impact of business activities. Regular reviews and renewal examinations are also undertaken by an independent certification body. Outstanding issues are thus identified and remedial measures swiftly taken. Besides initiatives centering on reductions of office paper and electricity usage and the promotion of waste recycling, we are encouraging measures toward the creation of an environmentally friendly society.

■ ISO 14001-Certified Company

ISO 14001-Certified Company		Date of Certification
NTT Communications Corp.	Procurement Dept.	October 1999
	Solution Services Dept.	March 2004
NTTPC Communications, Inc.		November 2003
NTT BizLink, Inc.		March 2007
NTT Com Solutions Corp.		April 2007
NTT Plala Inc.		December 2011

As of March 31, 2016

Environmental Audits and Environmental Surveys

Guided by its Global Environmental Charter, the NTT Communications Group issues twice-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 10 working groups (WGs) that drive the Group's environmental protection activities. In addition to sharing information and calling for further development of effective initiatives, we are promoting environmental management on a Groupwide basis.

Compliance with Environmental Legislation and Regulations

The NTT Communications Group devotes itself to ensuring legal compliance and proper risk management while liaising closely with the other corporations of the NTT Group. Including environmental laws and ordinances that look to curtail pollution, emissions standards and the PRTR Law*, legislation of all kinds is fully communicated to related departments, and independent guidelines have been established for in-house application. We are also enhancing compliance education. We were not involved in any litigation or legal violations pertaining to environment-related accidents, infringements, fines or complaints during fiscal 2015. We plan to continue our Companywide efforts to prevent environmental pollution and comply with related laws and regulations.

* PRTR Law: 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

NTT Communications issued its Guidelines for Green Procurement in 1999. In 2010, the Company brought these guidelines into compliance with the Energy-Saving Performance Guidelines enacted by the NTT Group and, at the same time as adding the energy-saving (Green of ICT) perspective of ICT itself that was considered an issue, renamed the Energy-Saving Performance Guidelines as the Guidelines for Green Procurement.

By applying these guidelines, NTT Communications has added an environmental conservation element to such areas as its own approaches to environmental conservation in the selection criteria of suppliers with which the Company allows dealings and in procurement.

Through its green procurement initiatives NTT Communications works to improve its environmental conservation activities hand in hand with all its suppliers and would like to continue to be of service in realizing further contributions to society.

■ Status of Green Procurement and Green Purchasing

	Fiscal 2011	Fiscal 2012	Fiscal 2013	Fiscal 2014	Fiscal 2015
Green procurement of goods excluding office supplies (1,000 units)	1,230	1,380	1,410	1,200	1,050
Green procurement of office supplies (1,000 units)	350	260	240	250	200

Environmental Education Initiatives

We offer environmental education to all employees, aiming to raise 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 just employees, but also their families and business partners.

In fiscal 2015, while continuing to offer environmental education in a variety of places, including all-employee training sessions, we undertook a range of environmental awareness and education activities, including a cleanup of the areas surrounding our offices and promotion of the ecocap movement. In addition, woodland conservation activities were carried out at NTT Com Solutions and NTT Com Marketing in a bid to raise the level of understanding regarding the importance of protecting the natural environment.

Creating a Low-Carbon Society

Although the advancement and spread of ICT have given rise to such benefits as an affluent society and convenient lifestyles, the increase in power consumption due to ICT-related equipment is placing enormous pressure on the environment. Fully aware of this situation, NTT Communications Group employees set targets from three viewpoints—telecommunications, offices and overseas bases—and are working together to reduce CO_2 emissions. Particularly in the case of improvements in the energy efficiency of telecommunications equipment, which account for around 90% of total CO_2 emissions from business activities, they are currently making efforts to be the first in the industry to introduce leading-edge technologies.

Reduction of Greenhouse Gases

Fiscal 2015 Results and Fiscal 2016 Outlook

When calculating the volume of greenhouse gas emissions that we generate, we include in the scope buildings owned by other companies, including those buildings where we rent space as well as data centers (DCs) that provide colocation services, in addition to buildings owned by the NTT Communications Group.

In fiscal 2015, CO_2 emissions*1 by the NTT Communications Group totaled 266,000 t-CO_2. This was 12,000 t-CO_2 less than the Group's established target and a decrease of approximately 1.5% compared with the previous fiscal year. Furthermore, in fiscal 2015 sales per unit of CO_2 emissions improved around 6.0% compared with their fiscal 2014 level due mainly to a decrease in the amount of CO_2 emissions and an increase in sales.

In the case of telecommunications equipment, we concentrated our efforts on proactively curtailing the power used for air-conditioning by, for example, conducting "airflow improvement" initiatives in the server and machinery rooms at communication and data center buildings and installing integrated air-conditioning control systems such as SmartDASH. In offices, we continued with the detailed energy-saving measures that had been implemented previously. By taking these initiatives we had a major effect and data center sales remained robust, ending in the results given above.

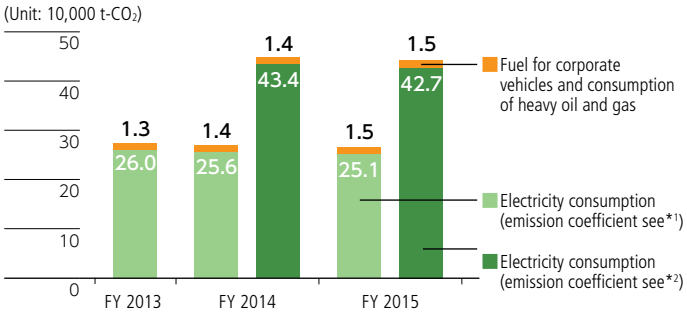
In fiscal 2016, the NTT Communications Group will continue to make a concerted effort to save energy. By deploying R&D technologies and introducing energy-saving rules and other new measures, we set a target for CO_2 emissions of 272,000 t-CO_2 or less.

At our overseas facilities, fiscal 2015 CO_2 emissions showed an upward trend, totaling approximately 348,000 t-CO_2 (approximately 338,000 t-CO_2 for data centers and 10,000 t-CO_2 for offices), reflecting a significant increase in demand for cloud services and data centers, the commencement of operations at new data centers, as well as the wider scope of calculation. We are working to reduce electricity use at overseas data centers by operating highly energy-efficient buildings and facilities, such as data-center buildings that have acquired LEED*2 certification. To the same end in Japan, we are also rolling out high-performance solutions designed to reduce air-conditioning energy consumption. We will continue these measures in fiscal 2016.

We are taking steps to consolidate the servers, air-conditioning, UPS, lighting, and other equipment and facilities previously set up and operated by customers at data centers with the aim of improving the efficiency of society's power consumption by providing energy-efficient data centers and cloud services.

*1 CO_2 emissions are calculated using the fiscal 2020 CO_2 emission coefficient target of 0.33 kg-CO_2 per kWh of the Federation of Electric Power Companies in Japan.
*2 An acronym for Leadership in Energy and Environmental Design, LEED is a certification system for entire buildings promoted by the U.S. Green Building Council that evaluates energy savings and environmental impact.

■ CO_2 Emissions from Business Activities

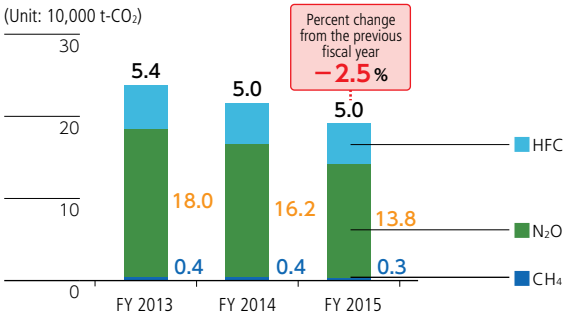


(Scope: 14 domestic companies of the NTT Communications Group)

*1 The CO_2 emission coefficients used in the light green bars are the fiscal 2020 target of 0.33 kg-CO_2 per kWh of the Federation of Electric Power Companies in Japan.

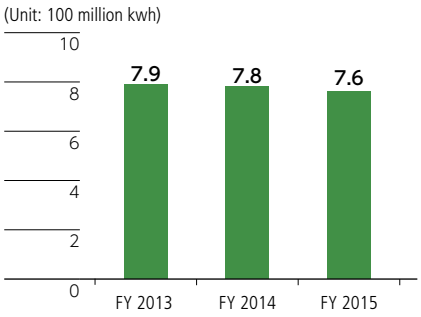
*2 The CO_2 emission coefficients used in the dark green bar are from electric power companies.

■ Other Greenhouse Gas Emissions (Converted to CO_2 Equivalents)



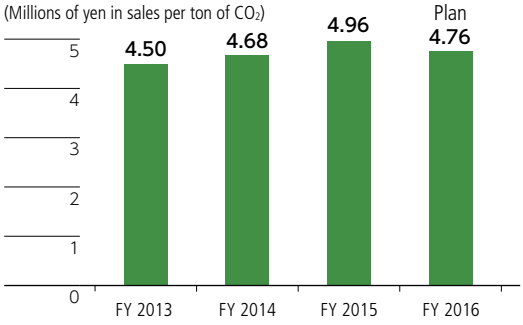
(Scope: 14 domestic companies of the NTT Communications Group)

■ Power Purchases



(Scope: 14 domestic companies of the NTT Communications Group)

■ CO_2 Emissions per Unit of Sales



Initiatives Related to Telecommunications Facilities

Fiscal 2015 Results and Plans for Fiscal 2016

In fiscal 2015, CO_2 emissions decreased approximately 1.7% from their fiscal 2014 level, to 250,000 t-CO_2 (12,000 t-CO_2 below our target), due to factors such as the start of sales at our new data centers in Tokyo and Osaka, the augmentation of cloud server equipment and expanded measures to reduce electricity use in air conditioning systems.

We expect CO_2 emissions to trend upward in fiscal 2016 due to ongoing robust data center and cloud service sales. However, we have set our emissions target at below 255,000 t-CO_2, which we aim to achieve through new measures that include the application of R&D technologies, "airflow improvement" initiatives and equipment removal for the purpose of right-sizing telecommunications equipment.

Building Cutting-Edge Data Centers with Advanced Low-Carbon Technologies

Data centers require a constant supply of electric power to operate. As a global ICT company, we proactively introduce the latest equipment and technologies from around the world with the aim of reducing the carbon footprint of our data centers.

For example, in Japan, the Osaka 5 data center, which was built in 2016, features improved cooling efficiency and lower power consumption in air conditioning systems, owing to the deployment of an indirect external air cooling system that takes advantage of cooler temperatures outside the building and an air circulation method that blows air from walls, a first of its kind in the industry. Overseas, our Hong Kong Financial Data Center, one of the largest in Hong Kong, was expanded and upgraded in 2015 with server racks featuring better cooling efficiency and the cooling wall system. Moreover, water-side economizers switch off air conditioners during cold weather and turn to cooling towers instead as thermal exchangers. This improves energy efficiency by roughly 16% for the entire air conditioning system.

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

Ongoing Efforts to Cut Air Conditioner Power Consumption at Existing Telecoms Facilities

Having targeted a 20% reduction in the electricity consumed by air conditioning, we have implemented a range of measures, such as SmartDASH, an automated system that visualizes temperature zones in server rooms, detects areas that are too cold, and automatically readjusts temperatures, as well as Aisle Capping, which is a technique that physically separates the intake (low temperature) and exhaust (high temperature) air from IT equipment by strategically placing vinyl sidewalls and ceilings around IT equipment in the aisles between rows of server racks.

In fiscal 2015, we implemented "airflow improvement" initiatives across a total of 135 buildings for the purpose of optimizing the use of electricity in air conditioning.

Key initiatives included the installation of Blank Panels, which block the front of unused spaces in server racks in telecommunications buildings and data center buildings, as well as measures to improve airflow, such as the integration of hot air flows from ICT equipment and the adjustment of cold air flowing up from the floor. Other measures entailed upgrading to high-efficiency air conditioners, reviewing energy-conserving operations, and optimizing room temperature. Moreover, we upgraded all lighting to LEDs in Japan.

NTT Communications will continue to implement measures in Japan and overseas to bring about further reductions in power consumption.

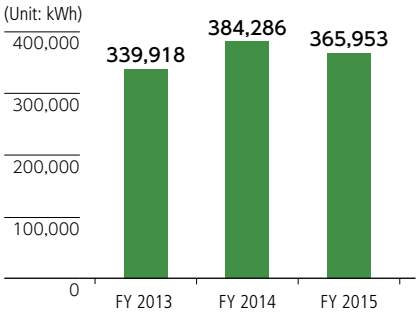
Introducing Solar Power Generation Systems that Actively Utilize Renewable Energy

NTT Communications has been engaged in power generation using solar power generation systems at its communications and data center buildings in Tokyo since 2009.

Currently having four system units in operation, we generated approximately 366,000 kWh of electricity in fiscal 2015. The power generated is used to light communal areas of the buildings.

Overseas, we generate solar power at our data centers in Singapore and Malaysia. We have installed a solar-powered heating system at our Hong Kong data center, a wind power generation system at our data center in India, and hydroelectric power generation systems at our data centers in Vietnam and Germany. In fiscal 2015, these facilities generated approximately 46.0 million kWh of electricity. In the years to come, we will continue to promote the utilization of environment-friendly renewable energy.

■ Overall Amounts of Electricity Generated by Solar Panels at Data Centers in Japan



■ Solar Panels Installed at Tokyo No. 5 Data Center

■ Solar Panels Installed on the Rooftop of Our Data Center Building in Malaysia

→ Click here for details regarding solar power generation.

Office Initiatives

Fiscal 2015 Results and Plans for Fiscal 2016

From the perspective of supplying services to customers, communications facilities — including data centers and telecommunications buildings—necessitate the constant use of a specific amount of electric power. For that reason, drastic measures to save electricity in their offices are to be expected.

In fiscal 2015, we continued to follow energy-saving measures that have been in place since the Great East Japan Earthquake. Accordingly, CO_2 emissions amounted to 16,000 t-CO_2 (approximately on target), the same level as in fiscal 2014. Although we will relax these measures slightly in fiscal 2016, focusing instead on energy-saving measures through better work efficiency, we are targeting emissions of 17,000 t-CO_2 or less. We intend to meet this objective by revising energy-saving rules and by increasing the deployment of thin-client PCs.

Summer and Winter Energy-Saving Measures

In addition to summer and winter energy-saving measures, the NTT Communications Group implements ongoing electricity-saving measures—including the use of energy-saving settings on PCs, the operation of fewer lighting fixtures and elevators, and the adjustment of air-conditioner settings—and strives to reduce its energy consumption in Japan.

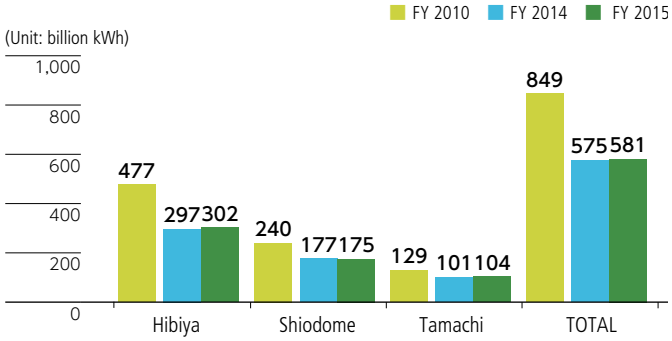
During the summer months, the Group targeted a reduction in electricity consumption of 30% from the fiscal 2010 level. Over the period in question, the Group accordingly undertook a variety of measures. For example, every effort was made to maintain higher air-conditioner settings (at 28°C in summer), cut back the number of lights employed, encourage the use of stairs when going up four floors or down five, and encourage employees to wear summer clothing and switch off office automation equipment when leaving the office. Thanks largely to these endeavors, in fiscal 2015 the Group achieved a reduction in electricity consumption measured in kWh of approximately 31% at its three principal Hibiya, Shiodome, and Tamachi buildings. As in summertime, we introduced measures to save energy in winter, including setting air-conditioning temperatures at 20°C.

In the same way as at our bases in Japan, we are adopting an aggressive stance on measures to save energy at our overseas facilities, having established as an indication the switching off of unnecessary lighting, air-conditioning and personal computers. The main initiatives involve switching off lighting, air-conditioning and PCs when not in use and at the end of the work day; using the power saving setting on PCs; and making a thorough effort to adjust office thermostats. In this way, we are promoting the same level of energy saving awareness as at our offices in Japan. Besides these, we are implementing a variety of initiatives in each region.

- East Asia region: Upgraded to LED lighting, adjustments to air-conditioner settings in the summer and winter, stopped using air conditioners in the spring and fall
- Southeast and South Asia region: Turn off lights during lunch hour and while working when possible, deploy LED lighting, make sure power is turned off when the last person leaves the office
- Europe region: Automatically turn off lighting and air conditioners, car leasing
- United States: Environment Day, make sure power is turned off when the last person leaves the office

In China and Vietnam, we also set power saving targets, take a proactive and progressive approach to reduction measures and aim to meet these targets.

■ Average Electrical Consumption in Office Buildings between June an September



■ Automatically Changing the Settings of PCs to Electricity Saving Mode

■ Elevator Display Promoting the 4 Up, 5 Down Campaign

Encouraging Energy Conservation in Offices by Finely Managing Individual Air Conditioners

NTT Communications manages individual air conditioners for each floor section of its office buildings as a way to conserve energy. At the Hibiya Building, our head office, employees are prohibited in principle from using individual air conditioners. However, individual air conditioners can be used in the event that building temperatures (28°C in the summer and 20°C in the winter) impede work or employee health, or when the building-wide air conditioning system is off. As an example of energy conservation using individual air conditioners, a logbook is kept for when they are used, by whom and for how long. The individual air conditioners work on a three-hour timer, just in case someone forgets to turn them off. The last person to leave the office is responsible for making sure each floor air conditioner is turned off. All of our offices take these and other incremental steps with the aim of effecting a major conservation of energy usage.

Promoting Use of the Company's Internal Cloud

NTT Communications possesses a number of internal systems to provide its services to customers. Migrating these internal system networks to and integrating them with internal ICT infrastructure by means of a private cloud using server virtualization not only lessens environmental impact by rationalizing the number of servers, but the move also contributes to more robust service business continuity plans (BCPs) for customers utilizing the system. Based on the awareness of these kinds of aims, the Company is working to develop utilization of its internal cloud.

As of the end of fiscal 2015, we had migrated 223 internal systems to the internal ICT infrastructure, a move that reduced the number of servers that accommodate the migrated system by around 57%.

Looking ahead, we plan to migrate and integrate our internal ICT infrastructure in Japan with that overseas, while working on efforts to reduce environmental impact on a global basis.

Transportation Initiatives

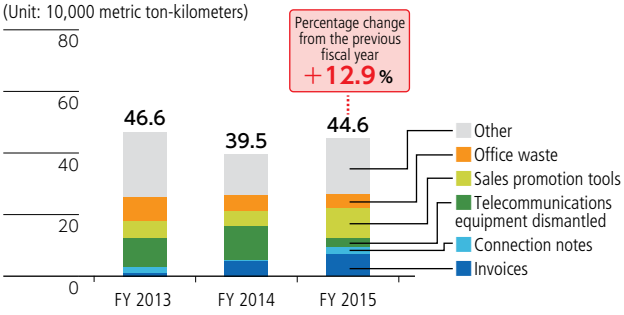
Fiscal 2015 Results and Fiscal 2016 Outlook

We annually audit the amount of transportation for invoices, sales promotion tools, and office waste. We voluntarily seek ways to streamline transportation, such as reducing the number of transportation trips, the volume of items transported and the transportation distance, and otherwise enhance logistics.

In fiscal 2015, NTT Communications aimed to reduce transportation with digital versions of sales tools and manuals, but the volume of waste transported more than doubled compared with the previous year on account of an organizational shuffle and the removal of old equipment. As a result, transportation rose 12.9% year on year to 446,000 metric ton-kilometers.

In fiscal 2016, we will continue efforts to reduce transportation volume by encouraging the use of digital versions of internal tools and pamphlets.

■ Goods Transportation Volume under the Revised Energy Conservation Law



(Scope: NTT Communications [non-consolidated])

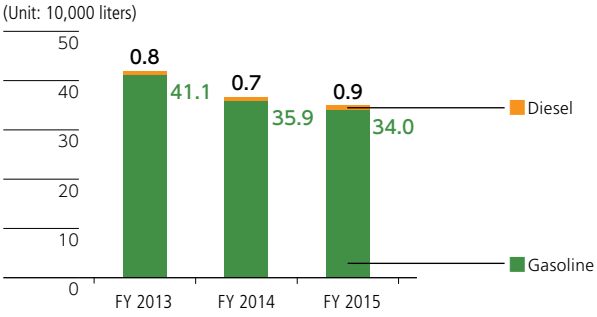
Reducing Fuel Use by Company Vehicles

To help solve pollution problems and contribute to the realization of a low-carbon society, we have devised measures to introduce environmentally friendly vehicles and are addressing a reduction in the amount of fuel used by Company vehicles across the entire group.

The Company is currently reviewing the number of its sales vehicles and steadily promoting measures that include the more widespread adoption of driving techniques that show consideration for the environment. As a result, gasoline and oil consumption by Company vehicles in fiscal 2015 totaled 340,000 liters and 90,000 liters, respectively. Compared with the previous fiscal year, this figure represents a decrease of approximately 17,000 liters (5%).

For the introduction of eco-cars, we had set a target for 100% in fiscal 2015, and 99% was achieved that year through the optimum stationing of vehicles and a switching over to ecocars.

■ Fuel Consumption by Company Vehicles



(Scope: 14 domestic companies of the NTT Communications Group)

Preventing Air Pollution and Promoting Energy Conservation through Electric Propulsion Ships

The undersea cable-laying ship Subaru is one of the few ships in Japan with an electric propulsion system (i.e., electricity from a generator drives the propulsion motor). The system helps prevent air pollution by reducing NOx and SOx contained in engine exhaust. Since the Subaru was built for a specialized use, unlike standard cargo vessels, the ship is characterized by low fuel consumption. Furthermore, in operating the ship, we realized energy savings of about 10% per year by efficiently controlling the number of generator-driven engines operating, for example, running three engines when heading to a construction site and running two engines when returning.

In addition, rust and seashells on the hull are eliminated by sandblasting to reduce resistance in the water, and very smooth paint conforming to the International Convention on the Control of Harmful Anti-Fouling Systems on Ships (AFS Treaty) is used to paint the hull after sandblasting, to conserve energy.

We are also conserving energy by introducing LED lighting for ships and reducing their environmental impact by replacing their air-conditioning systems.

■ Cable-Laying Ship Subaru (9,557 tons)

● Ship Energy Efficiency Management Plan (SEEMP) Implementation

The adoption of SEEMP became a mandatory requirement in July 2011 under the MARPOL international treaty for the prevention of marine pollution caused by ships. As a result, it is now a compulsory requirement for ship operators to adopt the most effective operating methods (which include speed reduction, selection of the most appropriate route taking into consideration ocean currents and weather conditions, and proper maintenance) in order to curtail the amount of CO_2 emitted and to promote improvements in energy efficiency.

Reducing the Carbon Footprint of Society through Our Services

Fiscal 2015 Results and Fiscal 2016 Outlook

In addition to lowering carbon ourselves, we aim to help society reduce its carbon footprint by promoting our low-carbon services to customers. To this end, we have declared Green ICT as a vital management vision. Green ICT can be broadly divided into Green of ICT, which aims to reduce the environmental impact of ICT, as well as Green by ICT, which effectively deploys ICT to help reduce the environmental impact of society. In fiscal 2015, we advanced the development of solutions and services that strongly reduce CO_2 emissions in line with this vision, and proactively obtained and displayed designations from the Environmental Label System that describe the impact of our solutions and services in an easy-to-understand format.

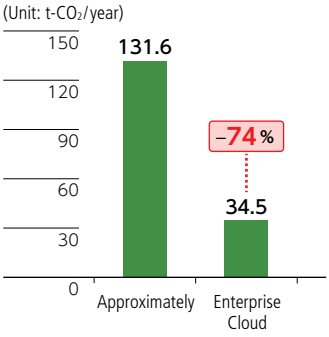
In fiscal 2016, we plan to measure the environmental impact of Nexcenter facilities as well as expand sales of cloud services and data center services in a bid to reduce the environmental impact of society.

Reducing CO_2 by Enterprise Cloud Service

On a global basis, NTT Communications provides ICT solutions, including networks, cloud services, applications and security. In addition to contributing to society, these solutions help reduce environmental impact by curtailing CO_2 emissions.

Linking data centers, networks and servers, Enterprise Cloud is one example of a cloud service for companies that we are uniquely positioned to offer as a telecommunications operator. The service features a host of options, such as the ability to allocate resources flexibly in accordance with customer needs. As the core service can be used for backbone operations, customers can utilize Enterprise Cloud as a virtual server in place of servers and storage that they previously had to install and operate themselves. This service reduces the number of servers that companies need to operate, achieving a decrease equivalent to 97 t-CO_2 per year (approximately 74%) for small- and medium-sized companies. The service's system environment can be configured to use consistent specifications in Japan and overseas, thereby reducing configuration and operational costs substantially compared to what a client would experience if installing their own independent systems.

■ **CO_2 Reduction Effect by Enterprise Cloud**



California Sacramento 3 Data Center Supports ICT Companies in Silicon Valley

The United States represents over 50% of the global data center market, reflecting its robust ICT industry and growth in outsourcing of ICT environments, as companies increasingly use cloud resources. This market in the United States has been expanding by 19% or so annually. In April 2015, NTT Communications opened its third data center in Sacramento, the California Sacramento 3 (CA3) Data Center, to better serve its customers there.

This data center is located in a seismically stable area within 15 minutes of an international airport. Many ICT companies are drawn to this data center for its security and excellent environmental performance. Specifically, the data center features leading-edge air conditioning systems that utilize external air and cold water for cooling, realizing strong energy conservation through efficient temperature management.

Environmental Solutions Label System

The NTT Group is exploring the idea of an Environmental Solutions Label System 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 objective evaluation of environmental impact reduction benefits. The entire NTT Group provides these environmentally friendly services in order to help reduce the environmental impact caused by society.

In utilizing this certification system, we at NTT Communications Group have registered a cumulative total of nine solutions for the Environmental Solutions Label, including Enterprise Cloud, Arcstar IP Voice and Arcstar Universal One Mobile in fiscal 2015. We aim to obtain more designations for the Environmental Solutions Label.

■ **Environmental Solutions Label**

Acquisition of eco-ICT Mark

After performing a self-assessment of our CO_2 reduction measures, we 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 with a seventh version publicly announced in February 2016. We will continue to participate in this initiative and work to instill the guidelines throughout the Group on an ongoing basis.

* ICT Ecology Guideline Council: The council was established on June 26, 2009 by the following 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 Industry Consortium (a designated nonprofit organization).

■ **eco-ICT Mark**

→ Click here for details on the eco-ICT Mark for telecommunications carriers.

Promoting a Recycling-Oriented Society

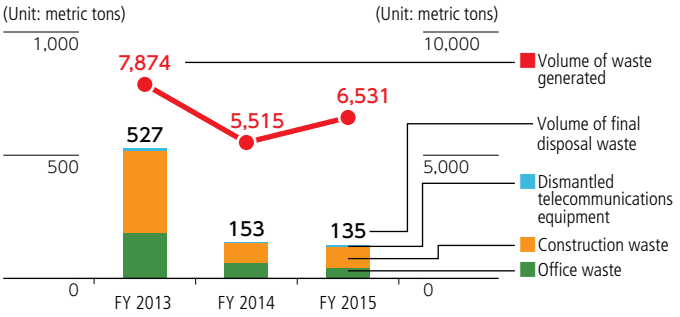
In aiming to contribute to the realization of a recycling-oriented society, we work to improve our reuse and recycling rates on a daily basis while building business models with low environmental impacts. Specifically, the NTT Communications Group is working to reduce the volume of waste in three areas—dismantled telecommunications equipment, construction waste and office waste—and promoting reuse and recycling in various aspects of its business.

Fiscal 2015 Results and Fiscal 2016 Outlook

In fiscal 2015, the final disposal of waste from dismantled telecommunications equipment amounted to 10.7 tons, construction waste 82.2 tons and office waste 42.4 tons. The total volume of final disposal waste decreased 17.3 tons compared with the previous fiscal year to 135.3 tons, while the total volume of waste generated increased 1,016.2 tons to 6,531.4 tons.

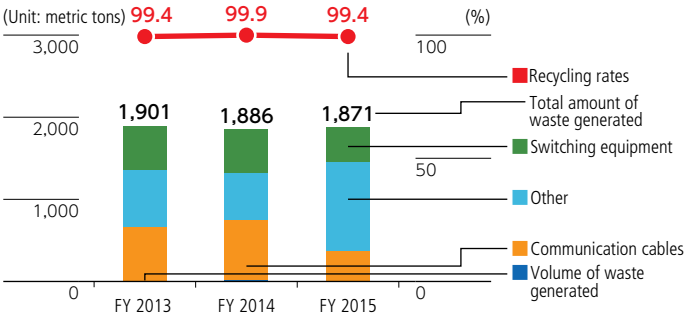
These initiatives led to minor improvements in the recycle rates for office and construction waste. Comparing both with the previous fiscal year, we were able to increase the office waste ratio from 88.2% to 89.5% and that for construction waste from 92.5% to 96.6%.

■ NTT Communications Group Final Disposal Waste and Total Waste Generation



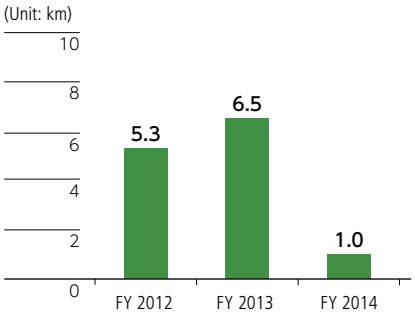
(Scope: 14 domestic companies of the NTT Communications Group)

■ Total Volume and Recycling Rates of Dismantled Telecommunications Equipment



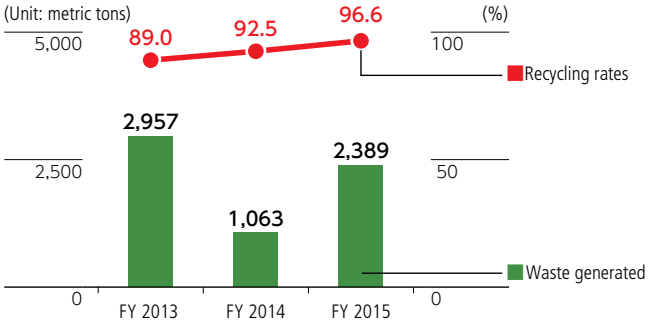
(Scope: 14 domestic companies of the NTT Communications Group)

■ Volume of Reused Fiber-Optic Cable



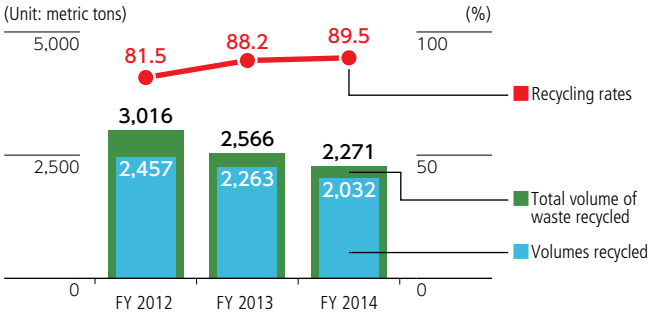
(Scope: 14 domestic companies of the NTT Communications Group)

■ Construction Waste Generation and Recycling Rates



(Scope: 14 domestic companies of the NTT Communications Group)

■ Total Office Waste and Recycling Rates



(Scope: 14 domestic companies of the NTT Communications Group)

Building Business Models with Low Environmental Impact

Initiatives to Improve Final Disposal Rate

We believe one of our most important obligations as a company that provides ICT services is to create business models that emphasize recycling. In line with this belief, we have been accelerating efforts since fiscal 2013 to improve the final disposal rate at our data centers, telecommunications buildings and office buildings.

We implement these measures focusing in particular on 7-8 buildings each year, starting with local surveys, checking the disposal workflow, and interviewing waste management companies about their disposal methods and requesting changes when needed. As a result, the final disposal rate for office waste, which was 6.1% in fiscal 2013, has been reduced to 1.9% as of fiscal 2015.

Thorough Implementation of 3Rs in Office Buildings

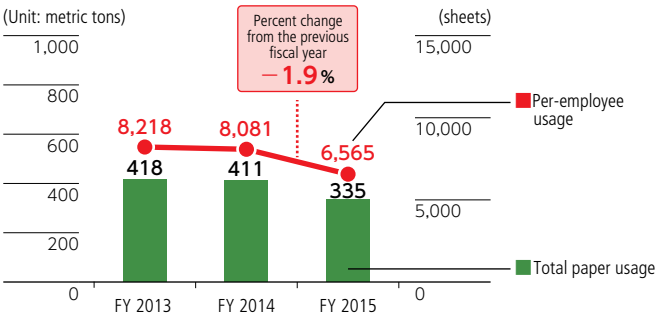
Reduction in Paper Use for Business Purposes

NTT Communications is working to reduce usage of all kinds of paper for business purposes, including paper for business purposes and paper for printing customer billing statements. In fiscal 2007, we established a paper usage indicator per full-time employee in order to reduce office paper usage.

Specifically, we encourage reduction efforts that include the number of sheets used and the double-sided printing rate by the use of printing log data from IC card multifunction printers. Initiative status data are collected by individuals and sections, with the results disclosed to all employees on a monthly basis. As a result of having continued to encourage the digitization of paper documents and paperless meetings that make use of projectors and tablets, in fiscal 2015 paper consumed per full-time employee (converted to A4-size office paper) was 6,565 sheets, which beat the target of 8,500 sheets.

Turning to our operations outside Japan, Group companies also reduced copy paper usage and promoted paperless meetings. Targets were set and initiatives accelerated in China, Korea, Hong Kong, Thailand, Indonesia, Vietnam, the United Kingdom, Columbia and Germany.

■ Total and Per-Employee Office Paper Usage (Sheets)



(Scope: 14 domestic companies of the NTT Communications Group)

Thorough Water Conservation Initiatives

NTT Communications is working to reduce the amount of water used in its offices. As one aspect of these activities, in May 2013 we began installing water-saving valves on the toilet units at our head office building (the NTT Hibiya Building). As the water-saving valves are capable of measuring and separating the flow of the amount of water necessary, we were able to cut our water use by around 45%. The valves also employ usage data to verify water savings and the degree of environmental contribution.

We have installed these water-saving valves in 90 toilet units within the NTT Hibiya Building. The annual water-saving effect for fiscal 2015 was a decrease of approximately 4% compared with the NTT Hibiya Building's overall water usage prior to the valves' installation.

Effective Utilization of Food Waste

In addition to giving due consideration to the effective utilization of materials in offices, dealing with waste from cafeterias is taking on added importance. NTT Communications has introduced a raw garbage disposal machine to deal with the waste generated by its employee cafeteria. A system to recycle the waste into organic compost is in operation, with the Gunma branch of NTT East Kanshi-netsu acting as subcontractor.

In fiscal 2015, we processed 23 tons of kitchen waste. As a result, this was recycled and generated 2.3 tons of compost, which was put to use by farmers in the Kanto region and elsewhere.

This initiative is not merely an effective utilization of resources, as it is also important to note the CO_2 reduction effect from disposing of less waste by incineration. In continuing to promote this initiative we are strengthening environmental considerations in our day-to-day operations and at the same time improving employee awareness.

■ Bags of Compost

Biodiversity Conservation

Together with the prevention of global warming, the preservation of ecosystems, where living things co-exist in an intricate balance, has recently developed into a major environmental challenge with regard to the creation of a sustainable society.

NTT Communications has established a set of action guidelines with regard to biodiversity conservation in order to promote activities that take concerns in this area into consideration. Giving thorough consideration of all aspects of business activities, from the construction of facilities to their operation and dismantling, the Company implements multifaceted initiatives along the lines of environmental contribution activities that naturally include participation in local conservation activities and the dissemination of information.

Development of Activities in Line with Action Guidelines

Having formulated Biodiversity Conservation Action Guidelines, we have proactively developed approaches in line with each of the three environmental contributions through ICT—Green of ICT, Green by ICT and Green with Team NTT—that have been promoted for some time.

There is a growing awareness, on a global scale, with regard to biodiversity conservation. In the years to come, we will promote inspection efforts, identify issues and promote improvements across the Group as a whole, including at overseas bases.

■ Action Guidelines with Regard to Preservation of Biodiversity

1. Basic Policy: Compliance with NTT Group Biodiversity "Approach Concept," Established by NTT Group

- **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 (Green of ICT)
- Contribute to preservation of social biodiversity in business activities (Green by ICT)
- Deepen understanding of biodiversity, promote nature conservation activities together with employees, their families and the planet (Green with Team NTT)

■ NTT Communications Group Initiatives Relating to Preservation of Biodiversity

Initiative Items	Outlines of Initiatives
We implement actions that take into account the preservation of biodiversity in business activities (Green of ICT)	At the time of construction of a wireless relay station, conducting a habitat survey of the area's plants, birds and insects, and implementing a construction plan that does not destroy ecosystems. Removal of wireless relay stations should be carried out in the same way.
	Providing wireless relay station space in an effort to facilitate the observation of wild bird protection
	Decreasing electric power consumption by making air-conditioning more efficient and improving lighting in communications and office buildings as well as through PC energy-saving measures
	Reducing the impact on ecosystems of product procurement by procuring best-selling devices and green purchasing
	With the prevention of marine pollution as a basic policy, laying submarine cables that protect coral reefs and cleaning the ocean floor before and after laying cables
	Rainwater, recycled water used at data centers in Singapore, Hong Kong and Malaysia for air-cooled chillers and for watering plants. Reducing the amount of electricity used for lighting by efficiently applying natural daylight at data centers and office buildings in Vietnam
	Implementation of initiatives toward 5% year-on-year reduction in amount of water used at Taiwan office
We contribute to preservation of social biodiversity in business activities (Green by ICT)	Information Disseminated about the Environment and Ecology (goo Green Label)
	Work to preserve coral reefs through business activities
	Undertaking wildlife damage countermeasures that efficiently employ IT
We deepen understanding of biodiversity and promote nature conservation activities together with employees, their families and the planet (Green with ICT)	Elimination of disposable chopsticks in cafeteria
	Forest maintenance, logging and tree-planting in cooperation with NPOs (Ome City, Tokyo and Shiroi City, Chiba Prefecture)
	Encouragement of personal cup use at vending machines
	Participation by NTT Taiwan in flora and environmental protection activities organized by the Taiwan Environmental Information Association
	Forest environment conservation and tree planting through Tokyo Greenship Action

Considerations during Data Center Construction

As a global ICT company, we promote biodiversity considerations at our data centers. We promote a multifaceted approach at data centers in Japan and overseas.

Minimizing the Influence and Impact on Local Ecosystems

Large-scale facilities like data centers make it necessary to keep in mind the effect they have on the surrounding ecosystem, such as the use of water resources at such facilities, pollution and drought. Without compromising any unique vegetation in the surrounding area, times of construction and on-site maintenance require a basis that implements ways to derive benefits from them while conserving biodiversity.

Naturally, at the Serangoon Data Center, a way was thoroughly developed to ensure that hazardous substances such as oil do not become mixed into the on-site water and cooling water that makes effective use of rainwater and recycled water (desalination and re-treated water). While actively incorporating a wide range of trees that are native to the area, great consideration is given to the on-site vegetation by conducting felling of those trees through consultation with the National Environment Agency (NEA).

■ Data Center Plantings Give Consideration to Indigenous Species

Consideration for Local Landscaping and Greening

We feel it is important to show consideration for biodiversity in facility designs that contribute to local greenery and in the surroundings.

At the Tokyo No. 6 Data Center, a large-scale urban facility, we took advantage of funding from the Tokyo Metropolitan Park Association's Urban Green Fund, working closely with the community to promote greening activities. The green spaces within the site have been planted into two zones: spring/summer and autumn/winter, so that visitors can enjoy seeing flowers at the site throughout the year. We have sought to achieve harmony between the data center and the surrounding community. For example, we have set up a wind-simulation environment and planted evergreen trees in the southwest corner, which is affected by wind.

■ Spring/Summer Zone

■ Autumn/Winter Zone

Laying of Submarine Cables

In constructing its undersea network infrastructure, 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 fishery industry.

Group company NTT World Engineering Marine Inc. (NTT-WE Marine), which handles the laying, burying and maintenance of underwater cables, promotes a strong awareness toward the preservation of marine ecology.

Consideration Given to Impact of Cable-Laying

We conduct assessments prior to laying underwater cables and work with related government authorities and municipalities in carefully designing cable routes and drawing up construction plans. For example, we seek to avoid coral reefs and other inhabited areas in our efforts to avoid affecting the marine environment.

Moreover, before laying or burying submarine cables, we clean the planned ocean seabed route, bring to the surface debris from the seabed, including discarded nets, rope and wire for proper disposal as industrial waste to preserve the marine environment.

■ Cables Laid on Sand, Away from Coral Reefs

■ Trash Collected from the Bottom of the Ocean

Consideration for the Impact of Cable-Laying Ships

Marine organisms that infest the chain lockers and safety maintaining ballast water of submarine cable-laying vessels have the potential to threaten native ecosystems in other parts of the ocean as vessels navigate from one area to another. As a result, the cable-laying vessel Subaru undertakes thoroughgoing measures to clean its anchor chain locker as part of its efforts to protect ecosystems. With regard to ballast water, ballast water treatment equipment that meets the standards set by the International Maritime Organization (IMO) was installed in January 2014. Since the equipment has an ultraviolet sterilization system that does not use chemical substances, impact on the environment is minimized.

In the case of ship paints, the effect that tin has on ecosystems has been recognized as an issue in recent years. We are therefore thorough in our use of tin-free paints in compliance with the AFS Convention (the International Convention on the Control of Harmful Anti-fouling Systems on Ships).

■ Prior to Hull Painting

■ After Hull Painting

Upon Construction and Dismantling of Relay Stations

Underpinning data communication networks, wireless relay stations are often located in rich natural areas, such as on hills and islands. We thus emphasize consideration for biodiversity in their operation.

As of March 31, 2016, 12 of our 105 wireless stations were in national parks or quasi-national parks. The NTT Communications Group carefully builds micro-roads, recognizing that we need to patrol and maintain these facilities, while adhering strictly to the law and our own environmental assessment methods. In undertaking assessments, we establish specific areas of concern and align construction processes accordingly. We adopt a multifaceted approach toward avoiding and minimizing any impact on the ecosystem. In addition, we strive to restore the environment to its original state prior to construction when dismantling wireless stations. We consult with residents and use local soil in our restoration activities.

We have also been acting appropriately and conducting activities that provide facilities from the perspective of wildlife conservation. For example, every year since September 2012, the Amami Ornithologists' Club NPO has held a Chinese sparrow hawk migration birdwatching meeting within the NTT Communications wireless relay station in Amami City, Kagoshima Prefecture. Wireless relay stations are normally off limits, but having received a request saying that the area is suitable for monitoring the status of the ecosystem, events are held with employees in attendance.

■ Chinese Sparrow Hawk Migration

Contributing to Ecosystem Conservation Using ICT

Contributing through Products and Services

The damage to agriculture caused by wild boars and deer is becoming an issue of increasing concern across Japan's farming and mountain communities. The setting of traps is being used as one countermeasure to minimize the damage caused by wildlife. NTT PC Communications Inc. has developed "Mimawari Rakutaro" as one part of its "field cloud service." This is a wildlife observation and alarm device which utilizes 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 automatically transmit a message 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 caught in a trap by mistake.

Since first going on sale in July 2011, Mimawari Rakutaro has been adopted by 46 local governments across Japan and contributed to ecosystem conservation in woodlands. As a recent example of its use, Wakayama City has deployed Mimawari Rakutaro to monitor traps and send notifications via M2M in order to mitigate damage caused by wildlife and better understand ecosystems.

■ Mimawari Rakutaro

Work to Preserve Coral Reefs through Business Activities

As a leader in media services, NTT Plala, Inc. has taken action to protect coral reefs, which play a vital role in the ecosystem of our oceans, by enlisting the help of its six million members.

Specifically, NTT Plala, Inc. offers tours of coral grafting to members of its Bukatsu DO! service, an online community for adults. Participants in the tour experience coral grafting with employees. NTT Plala engaged in a campaign to preserve coral reefs by donating a number of coral seedlings that matched the number of members of Hikari TV Shopping who participated in this project.

In addition, NTT Plala, Inc. produced and distributed 4K videos about the state of coral reefs and activities to protect them, creating opportunities for people to think more about protecting coral reefs. In January 2016, we began donating a portion of proceeds from people who watched the video for initiatives to protect coral reefs.

NTT Plala, Inc. will continue to protect the environment with help from its members by providing enjoyable projects linked with its business activities.

Educational Activities by goo Green Label Information Dissemination

As an ICT company, we are increasingly expected by society to disseminate information and educational materials online. We will continue such activities through online media to convey the importance of biodiversity, and encourage a diverse range of people to engage in conservation activities.

Activities by goo Green Label

The goo Green Label portal donates 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 over to "goo Green Label," the top design version of the "goo" web portal, and using the search engine. A total of 55 companies, including those in the NTT Group, have currently 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 54.8 million yen have been made to 86 organizations, the majority of which are NPOs engaged in global environmental protection activities.

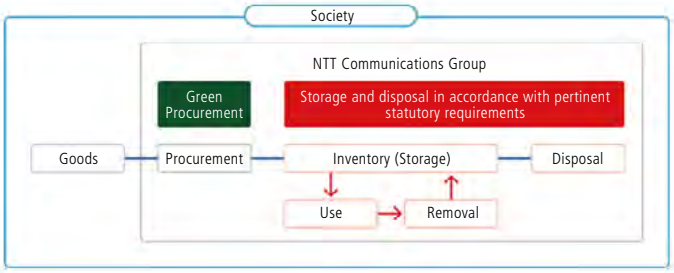
In fiscal 2015, we contributed a total of one million yen to the National Land Afforestation Organization, a public utility association, which undertakes tree-planting activities as part of revival efforts following the Great East Japan Earthquake.

Preventing Environmental Pollution

The NTT Communications Group is taking various steps to avoid a broad range of environmental risks stemming from business activities, such as environmental pollution and hazardous substance leaks. Measures include the formulation of guidelines covering the introduction of low-emission vehicles, improvements to facilities and methods of operation, the bolstering of management, and education and training.

With regard to chemical substance management systems, in which society has shown a growing interest, the Company has implemented proper management in maintenance departments over the course of its history—based, for example, on the Waste Disposal and Public Cleansing Act, the Law Concerning Special Measures Against PCB Waste and the Electricity Business Act— including the assigning of vice presidents as managers. While conducting storage inspections on a regular basis, we are thoroughly overhauling the system to implement the rapid coordination of information to include senior management under the leadership of the President in the event of an earthquake or other disaster. By means of training sessions on environmental laws, we always keep abreast of the content of law revisions, share information among all Environmental Working Groups and plan optimization of our operations in a timely manner.

■ Framework for Preventing Environmental Pollution in Each Business Stage



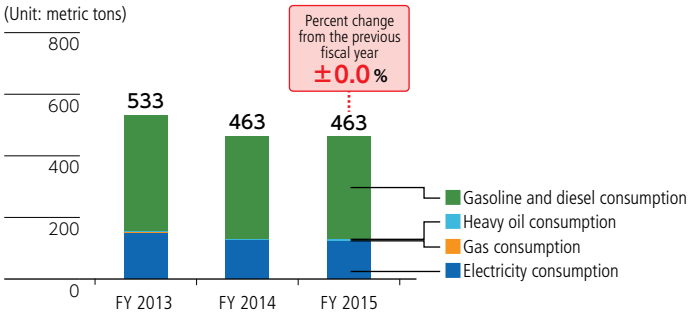
Handling of Environmentally Hazardous Substances

Air Pollution Countermeasures

Our business activities emit NOx and SOx, which cause air pollution. Approximately 70% of the NOx emissions are attributable to the use of gasoline and diesel in our operational vehicles, with the remaining 30% are emitted during the generation of electric power in communications buildings and other facilities. Most SOx (around 93%) is emitted during generation of the electricity we use.

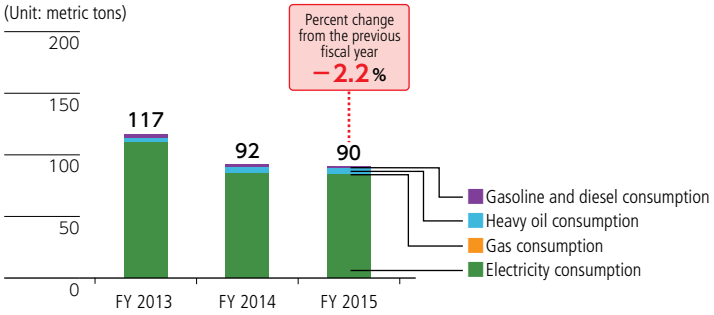
In fiscal 2015, we reduced our emissions of both NOx (by 0 tons year on year, to 463 tons) and SOx (by 0 tons to 90 tons) by 2.2% in both cases thanks to the lower levels of electric power consumed. In the years to come, we will encourage driving techniques that show consideration for the environment and review our vehicle fleet numbers while promoting the mitigation of global warming and the prevention of air pollution by taking steps to reduce electricity usage in our businesses.

■ NOx Emissions



(Scope: 14 domestic companies of the NTT Communications Group)

■ SOx Emissions

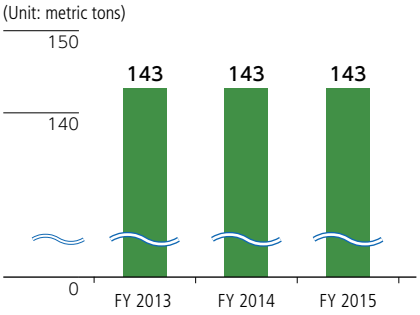


(Scope: 14 domestic companies of the NTT Communications Group)

Ozone-Depleting Substance Countermeasures

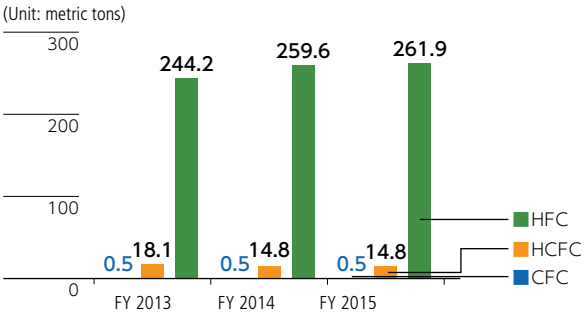
We dispose of ozone-depleting substances in an appropriate manner. The volume of specified halons used in our fire extinguishing equipment in fiscal 2015 was approximately 143 tons, roughly the same as in the previous fiscal year. Meanwhile, the volume of specified Freon gas (CFCs) used in our air-conditioning equipment in fiscal 2015 was up 2 tons from the preceding fiscal year to approximately 277 tons.

■ Volume of Specified Halons Used in Fire-Extinguishing Equipment



(Scope: 14 domestic companies of the NTT Communications Group)

■ Volume of Specified CFCs Used in Air-Conditioning Systems

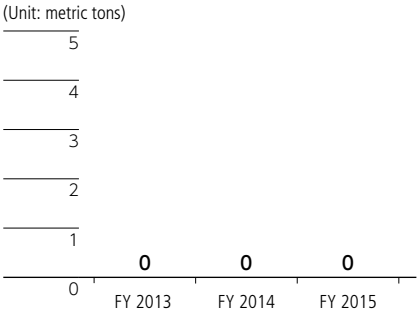


(Scope: 14 domestic companies of the NTT Communications Group)

Asbestos Countermeasures

Asbestos countermeasures for buildings and offices involved implementation of airborne asbestos surveys of buildings for which asbestos had been spray-applied to confirm that levels did not exceed statutory limits, which were revised in September 2006. As there were no buildings demolished in fiscal 2015, there were no asbestos emissions. We are going to continue systematic implementation of appropriate measures such as removal, containment or enclosure of asbestos in buildings where it is present in line with manuals issued by the Japan Construction Occupational Safety and Health Association and individual local authorities.

■ Asbestos Emissions



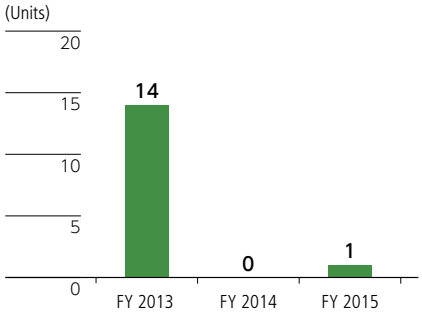
(Scope: 14 domestic companies of the NTT Communications Group)

Storage and Management of PCB

NTT Communications appropriately manages devices that contain polychlorinated biphenyl (PCB). 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.

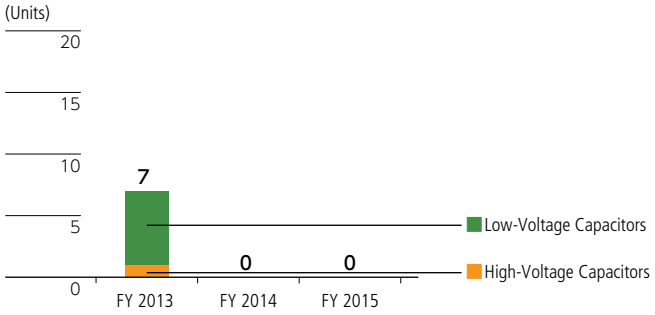
In fiscal 2014, we undertook the proper detoxification processing of 1,415 systems, comprising high-concentration PCB systems stored in Kyushu and Hokkaido and trace PCBs from all over Japan. For our currently stored high-concentration PCB systems, we are coordinating with waste disposal companies with plans to commence detoxication processing in fiscal 2016 for inventory held in Tokyo and in fiscal 2018 for systems stored in Osaka.

■ Number of Transformers Stored



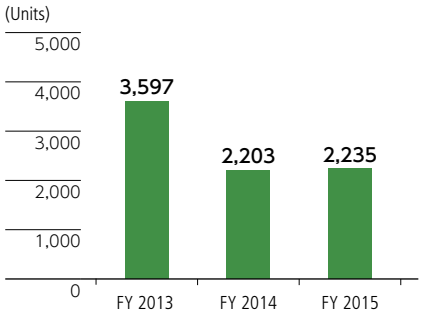
(Scope: 14 domestic companies of the NTT Communications Group)

■ Number of Capacitors Stored



(Scope: 14 domestic companies of the NTT Communications Group)

■ Number of Ballasts Stored



(Scope: 14 domestic companies of the NTT Communications Group)

Chemical Substance Management in Anticipation of Emergency Situations

Against a backdrop of natural disasters that are occurring frequently on a global scale, in recent years society has shown a growing interest in the management systems needed for environmental pollutants in times of emergency. Owning and operating IT infrastructure throughout the world, we have been thorough in establishing storage and management systems while bearing "unlikely events" in mind for some time.

In the management of pollutants and PCBs in particular, we have implemented measures that recognize such factors 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. With regard to such events as major earthquakes and disasters, we have built a rapid verification system designed not only to prevent damage when a disaster first strikes but also from the perspective of preventing secondary disasters. We exercise great care in conducting uninterrupted operations safely and securely.

■ PCB Storage Location

■ Storage of PCBs

Cases of Major Leakage

There were no incidents involving major leakages in the NTT Communications Group in fiscal 2015.

Transport, Import or Export of Toxic Waste

In line with our policy of making an early effort to conduct the detoxification processing of PCBs, in fiscal 2014 we conducted the processing of those stored in Kyushu and Hokkaido. We will process the remainder, held in Tokyo and Osaka, as soon as processing center preparations are complete. We have no plans to transport, import or export any toxic waste.