

NTT West Group



Environmental Report 2015



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**All of us at NTT West will continue
our contribution toward reducing
the environmental load by working
together as one on the
“Green NTT West Strategy.”**

村尾 和俊

Kazutoshi Murao

President

Nippon Telegraph and Telephone West Corporation



NTT West Group has been proactively working on the resolution of environmental issues as the responsibility of a company that consumes a significant 2 billion kWh of electricity per year. NTT West Group established the “Green NTT West Strategy” in June 2012 where we declared our maximum effort in reducing power use and other environmental issues. In order to “achieve the Environmental Grand Design,” “expand our environmental and energy business,” and “promote activities for biodiversity conservation,” which are the three pillars of the “Green NTT West Strategy,” we have made the following achievements and efforts in FY 2014.

For the first pillar, which is the “achievement of the Environmental Grand Design,” we have set a target to achieve by FY 2020 on (1) measures to address global warming; (2) reduction of paper resources; and (3) reduction of wastes.

As part of the measures to address global warming, our goal is to reduce total power use by at least 20% compared to FY 2010. Currently, our plan has been progressing smoothly, with the amount of power use in FY 2014 cut down by as much as about 50 million kWh compared to the total power use in FY 2013. This is equivalent to the amount of power consumed by about 14,000 general households. Our main efforts were to conserve power consumption by lights and air-conditioning systems, such as by introducing the use of LED lights and ensuring the proper brightness of lights in office buildings (cutting down on unnecessary use of lights). We also encouraged employees working on the same floor or in the same organizational unit to take leave at the same time so as to achieve further power saving. For telecommunication facilities, we have implemented power-saving measures such as switching to energy-saving air-conditioners, ensuring that outdoor air-conditioner units are cleaned before the peak season, and introducing outdoor air cooling systems at telecommunication equipment rooms and data centers.

In order to cut down on the use of paper resources by ensuring that telephone directories, which consume the largest amount of paper, are printed in appropriate quantities, we took thorough actions to check with new and moving subscribers whether they wish to have a copy, and do not distribute directories to those who do not wish to receive one. We also strived to reduce the use of pure pulp by establishing a “closed loop recycle system for phone directories,” in which old directories are collected and reprocessed into new ones. In addition, in

order to reduce the use of office paper in our routine work as much as possible, we have also been reviewing our working style by implementing measures such as promoting paper-free meetings, thoroughly ensuring double-sided and collective printing, and allocating multi-function printers appropriately.

To reduce the amount of wastes, we made an effort to ensure the reuse of unwanted items in our office at other parts of the organization, for example, for industrial wastes generated from dismantled telecommunication facilities, for example, we strived to recycle them through cleaning and repair. For those that were not reusable, we tried our best to recycle them as materials. Also, we promoted sorting and recycling of wastes generated from constructions works through environmental education for construction site agents. Thanks to these efforts, we were able to achieve zero emissions* with the total final waste disposal rate maintained at below 1% for three consecutive years.

Under the second pillar, which is the “expansion of our environmental and energy business,” we are currently making contributions to reduce the load on the environment with the use of ICT (information and communications technology). For example, we are aiming to develop new services that can help to prevent global warming. Some of them include using “Hikari Box+” to develop applications for grasping the power usage at home, and gathering smart meter data and providing them to alliance partners.

In relation to “promoting activities for biodiversity conservation,” which is the third pillar, we have been carrying out activities that centered on the “NTT West Midori Ippai Project.” This project started with a size of about 2,000 participants in 18 prefectures, but the activities have expanded to a total of 30 prefectures involving 11,526 participants by FY 2014. We will continue to increase the number of participants in this project so that the significance of these biodiversity conservation activities can be understood by as many employees as possible at NTT West.

Each and every one of our group employees at NTT West will work together as one and continue our contribution toward further reduction of the environmental load by engaging actively in and continuing to implement the “Green NTT West Strategy.”

* This is the concept advocated by United Nations University. It aims for production that does not generate any waste overall by using all waste products and by-products generated from industries as resources for other industries. NTT West Group defines a 1.0% or less final disposal rate as zero emission.

NTT West Group Environmental Report 2015

The CSR activities of the NTT West Group are based on the “NTT West Spirit,” which is a corporate philosophy formulated at the birth of our business. Our CSR activities are comprised of three pillars. The first pillar is “Thorough compliance,” which is the origin of CSR activities. The second pillar is “Safe society,” which is an expectation of the society. The third pillar is “Value creation through business.” To fulfill our corporate social responsibility, the NTT West Group has been working on CSR activities with the above mentioned three pillars to contribute to the realization of a sustainable society.

We have summarized our CSR activity efforts in general in annual CSR reports, which have been released since FY 2005.

In addition, believing that it is a corporate social responsibility to realize a sustainable society by paying attention to the environment, NTT West Group has been releasing the details of all its environmental conservation activities to the public on the Group’s website. At the same time, outline of the Group’s environmental conservation activities as well as topics for the fiscal year are also included in the annual Environmental Report, which has been released since FY 2000. We would appreciate it if you could send your valuable comments to the following e-mail address.

CSR Activity Report

NTT West Group 3 Pillars of CSR Activities

“NTT West Spirit
(NTT West Spirit, Action Policies, Code of Conduct)
<http://www.ntt-west.co.jp/csr/spirits.html>

CSR website page

<http://www.ntt-west.co.jp/csr/>

Annual Report “CSR Report”

Report on Environmental Conservation Activities

“Activity to Protect Global Environment” Website

<http://www.ntt-west.co.jp/kankyo/>

Outline of the NTT West Group’s environmental conservation activities and topics for the fiscal year

Annual Report “Environmental Report”

Coverage in Environmental Report

Coverage on Website

All Environmental Conservation Activities within the NTT West Group

FY 2015 Environmental Report Reporting Scope, etc.

Applicable to

◆ 29 NTT West Group companies

Organization Charts

<http://www.ntt-west.co.jp/corporate/about/sosikizu.html>

Group Companies

<http://www.ntt-west.co.jp/corporate/about/group.html>

Applicable period

◆ P04~P07 (Topics) :

Based on activities, etc. from April 2014 to September 2015

P08~P27 (Environment Data) :

Based on records from April 2014 to March 2015

Reference

◆ “Environmental Report Guidelines 2012,” Ministry of the Environment

NTT Group Integrated Report “Annual Report 2015”

<http://www.ntt.co.jp/ir/library/annual/index.html>

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Employee Trainings that Add Greater Value to Our Environmental Protection Activities

At the NTT West Group, all our employees work together as one to pursue activities for protecting the environment, and we have been conducting in-house trainings regularly to promote this endeavor. Employees have been appointed as environmental personnel, who are responsible for promoting activities related to environmental protection at the individual workplace. We have conducted environmental education sessions for our environmental personnel to enhance their understanding toward the significance of activities for environmental protection and biodiversity conservation as well as to enable exchange of information among them. This process provided us with a hands-on opportunity to learn about the global trends in environmental protection and also the importance of environmental protection activities in the respective regions.

Environmental business trainings, which aim to contribute to environmental protection through businesses that make use of ICT, were held with the objective of utilizing NTT West's optical network services to connect people and things as well as to invigorate local communities. These sessions helped to develop the potential for new activities and services by making visible the connection among people and things in the real world. At the same time, they also provided the opportunity for us to look at case examples that make use of ICT.

To develop our environmental protection activities at the NTT West Group into something even more meaningful, we believe it is important to continue interacting and exchanging ideas with different people inside and outside our group, including the local communities, society and our customers. Together with our in-house trainings, we hope to add more value to our environmental protection activities while interacting with a wide network of people.

Employee Training (1)

Training Session for NTT West Group Midori Ippai Environment Personnel



The “5th Training Session for NTT West Group Midori Ippai Environmental Personnel” was held on two days from June 4 to June 5, 2015 at the “NTT West Midori Ippai Shionoe no Mori,” the base of NTT West Kagawa’s activities. The objectives of this training session are to deepen participants’ understanding toward the significance of the biodiversity conservation activities and to promote exchange of ideas among the environment personnel and NTT West Group employees who are promoting the conservation activities. A total of 58 environment personnel, who are responsible for promoting the Midori Ippai activities, attended the training from different parts of Japan, ranging from Ishikawa in the central region to Okinawa in the south.

At this session, review was conducted on global trends in environmental protection, such as the 5th Assessment Report by the Intergovernmental Panel on Climate Change (IPCC) released in the previous year and overview of the 12th Meeting of the Conference of the Parties (COP12) to the Convention on Biological Diversity (CBD), biodiversity conservation activities in Kagawa Prefecture, as well as activities of the NTT West Kagawa Group. Also, a group discussion was held on “raising the awareness on biodiversity conservation,” which is an important agenda of the United Nations Decade on Biodiversity (UNDB).

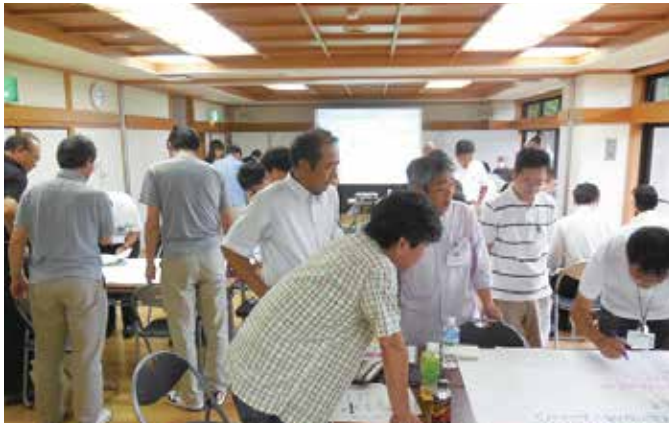


Employee Training (1)

Training Session for NTT West Group Midori Ippai Environment Personnel

From this training, we learned that environmental changes on earth have been progressing as simulated since the 1970s. If the growth in global population, industrialization, and increase in food production and use of resources were to continue in this state, there will be a sharp decline in population as a result. It is said that biodiversity has declined by 40%, and each individual will have to take concrete actions in order to change the current situation.

At the lecture by Mr. Wada, deputy manager at Kagawa Prefecture, he mentioned that degraded forests and unattended bamboo groves are on the increase in Kagawa, and hoped that we can broaden the network of concerned individuals to carry out biodiversity conservation activities.



Participants of the training felt that the session was a meaningful one. Some of the feedback include "I thought I understood the current situation, but I was not aware that biodiversity has declined by 40%," "I have been taking part in the Midori Ippai Project without giving much thought to it, so this training was a good chance for me to think about its significance again," "it was very meaningful to be able to interact with environment personnel from other prefectures."

Each and every member promoting the Midori Ippai Project in different parts of the country will continue to pursue these activities in order to address the environmental issues of the respective regions with a global vision.

For more details on the Training Session for NTT West Group Midori Ippai Environment Personnel, please visit the following webpage.
<http://www.ntt-west.co.jp/kankyo/create/line128/>





Employee Trainings that Add Greater Value to Our Environmental Protection Activities

Employee Training (2)

Bamboo-cutting in Training Session for NTT West Group Midori Ippai Environment Personnel



On June 4, 2015, we conducted a bamboo-cutting activity at “NTT West Midori Ippai Shionoe no Mori” in Kagawa Prefecture. Bamboos can gain considerable height if they are left unattended. This may block out sunlight needed by other plants, thereby allowing only bamboos to grow and consequently the loss of biodiversity in the forests.

At “NTT West Midori Ippai Shionoe no Mori” in Kagawa, members have been engaging in activities to restore natural forests with biodiversity since 2014 by cutting down bamboos and planting wild cherries (yamazakura).

A total of 58 environment personnel from different parts of Japan, ranging from Ishikawa in the central region to Okinawa in the south, attended this Training Session for NTT West Midori Ippai Environment Personnel. They took part in the cutting activity to remove bamboos that started to grow again at the location where wild cherries were planted in 2014.

Participants spread themselves across the slope in the forest, where they used a sickle to cut down young bamboos that were about twice their height under the guidance of representatives from the Forest Owners’ Co-operative. Participants were taught to cut the bamboos at an angle from slightly above, and thanks to the advice, those who were not good at bamboo cutting at first were able to perform the work efficiently. All the tall young bamboos were cut down in no time.

Participants also had a hands-on experience to cut down bamboos that were more than 20 meters tall using a saw. This one-day experience has helped the participants to realize the importance of continuing such efforts in order to enrich biodiversity in the forest, as it will be dominated by bamboos again if maintenance is not carried out regularly.



For more details on the Bamboo-cutting activity in the Training Session for NTT West Group Midori Ippai Environment Personnel, please visit the following webpage.
<http://www.ntt-west.co.jp/kankyo/create/line127/>



Employee Trainings that Add Greater Value to Our Environmental Protection Activities

Employee Training (3)

Environmental CSR Business Training Session on Sustainable “ICT-based Businesses” that Aim at Invigorating Local Communities



By utilizing its optical network services, NTT West Group “connects and designs” everything under the sun, including the connection between people, people and things, and between things. By doing so, we aim to contribute to the creation of new cultures that will enrich people’s lives, as well as the invigoration of local economies and revitalization of local communities and towns. If depopulation can be prevented by revitalizing local communities and towns in a sustainable way, this will also help to conserve the nature and ecosystem of satoyama (village forests) that are maintained by the surrounding people. To do so, we have been holding “Environment CSR Business Trainings” since FY 2014 with the aim to invigorate the economy of local communities in a sustainable way. The FY 2015 session was held on May 14 and 15 at the southern Omiya district in Omiya-cho, Kyotango, Kyoto.

Mr. Kazuma Higashida, representative of Tsuneyoshi Department Store, spoke at the training on how to establish business in a rural village. Also, Mr. Sadayoshi Hishikawa, director of an NPO, Inochi no Sato Kyotomura, highlighted that to succeed in establishing a sustainable business in a rural environment, it is necessary to carry out economic activities while leveraging the cooperative relationship between individuals as well as between people and activities. He also explained the “Tsunagari (Connection) Map,” a method for visualizing such cooperative relationships.

Through this session, participants learned that simply introducing an urban business model does not offer a solution to revitalize the local communities, and it would be meaningless unless we examine a sustainable business model within the local economy. Also, sustainable businesses can be created by leveraging cooperative relationships.

Participants also learned the important roles of ICT services, such as the ability to spread “joy” in relation to the point on “connecting people with people,” as well as their potential of making future contributions to invigorate local communities.



For more details on the Environment CSR Business Training Session, please visit the following webpage.
http://www.ntt-west.co.jp/kankyo/action/ach_201506_02/

1-1 NTT West Group Charter for Global Environment

Based on the belief that corporations, which are inseparable from the society, are responsible for promoting activities to protect the environment, we established the “NTT West Charter for Global Environment.” Based on the provisions of the charter, our Group set forth targets and execution management items for promoting activities to conserve the environment.

NTT West Group Charter for Global Environment

Basic Philosophy

In order to harmonize with the nature and to realize sustainable development for years to come, NTT West Group shall, in compliance with the charter, make the best effort in all its business activities together with its group companies toward protecting the global environment.

Main Principles

1. Legal Compliance & Social Responsibility

We shall comply with the relevant laws and regulations on environmental protection, and fulfill our corporate responsibilities from a global perspective.

2. Reduction of Environmental Load

We shall set action goals for reducing greenhouse gas emission, saving energy, saving materials such as the amount of paper used, and cutting down wastes, and we shall strive to make continuous improvements.

3. Establishment & Maintenance of Environmental Management System

By establishing an environmental management system, each office shall take actions voluntarily to protect the environment in order to prevent pollution and reduce environmental risks.

4. Dissemination of Eco-technology

We shall contribute to reducing the environmental load through actively disseminating the achievements of research and development efforts such as through multi-media services.

5. Contributions via Social Support

Cooperating with local residents and the government offices, we shall strive to support the activities for environmental protection.

6. Disclosure of Environment-related Information

We shall engage in active communication within and outside the Group by disclosing information related to the environment.

7. Preservation of Biodiversity

We shall grasp the relationship of biodiversity with business, and promote efforts for it to be inherited by future generations.

Reference: NTT Group Environment Vision "THE GREEN VISION 2020"

With the aim to realize the development of a sustainable society with man and the Earth coexisting in harmony, NTT Group has, in November 2010, established the NTT Group Vision for Environmental Contributions, named "THE GREEN VISION 2020," which sets forth policies on new efforts up to FY 2020 (Figure 1).

"THE GREEN VISION 2020" positions three ongoing environmental themes to be tackled in the future. They are "realization of a low carbon society," "formation of a circulating society," and "conservation of biodiversity."

● 3 Environmental Themes

1. Realization of a low carbon society

To prevent global warming, we aim to realize a low carbon society by cutting down on CO₂ emission from our business activities, while at the same time spread the use of ICT services to contribute to CO₂ reduction in the entire society.

2. Formation of a circulating society

To make effective use of limited resources, we aim to realize the formation of a resource-circulating society by reducing all wastes generated from our business activities as well as cutting down on paper use.

3. Conservation of biodiversity

To contribute to the conservation of biodiversity, we aim to improve and further develop our existing efforts based on a concept that comprises two approaches, one that centers on business activities, and the other that centers on contribution to the society.



Figure 1: "THE GREEN VISION 2020"

● Implementing Three Approaches

In THE GREEN VISION 2020, the NTT Group proposes the three approaches of "Green of ICT", "Green by ICT", and "Green with Team NTT." "Green of ICT" refers to efforts to reduce the environmental impacts of our own business activities. "Green by ICT" refers to our efforts to reduce CO₂ emissions across society through providing ICT services. "Green with Team NTT" refers to efforts by group employees and their families to work with local communities to help protect the environment.

NTT West Group is also working on activities for protecting the environment by implementing three approaches, namely, "Green of ICT", "Green by ICT", and "Green with Team NTT."

1-2 Green NTT West Strategy

NTT West has continually been working on the reduction of environmental load. In addition, when considering our corporate social responsibility in the consumption of as much as 2 billion kWh of electricity per year, in order to declare our maximum effort in reducing the use of power and other environmental issues, NTT West Group established the “Green NTT West Strategy” in June 2012. The “Green NTT West Strategy” consists of three pillars. The first pillar is “Achievement of the Environmental Grand Design.” In this activity, we will contribute to society by reducing our environmental load. In the “Deployment of Our Environmental and Energy Business”, which is the second pillar, we will contribute to the environment by deploying business activities using and utilizing ICT. Finally, the third pillar is “Promotion of Activities for Biodiversity Conservation.” In biodiversity conservation activities, individual employees contribute to environmental protection in society.

Achievement of the Environmental Grand Design

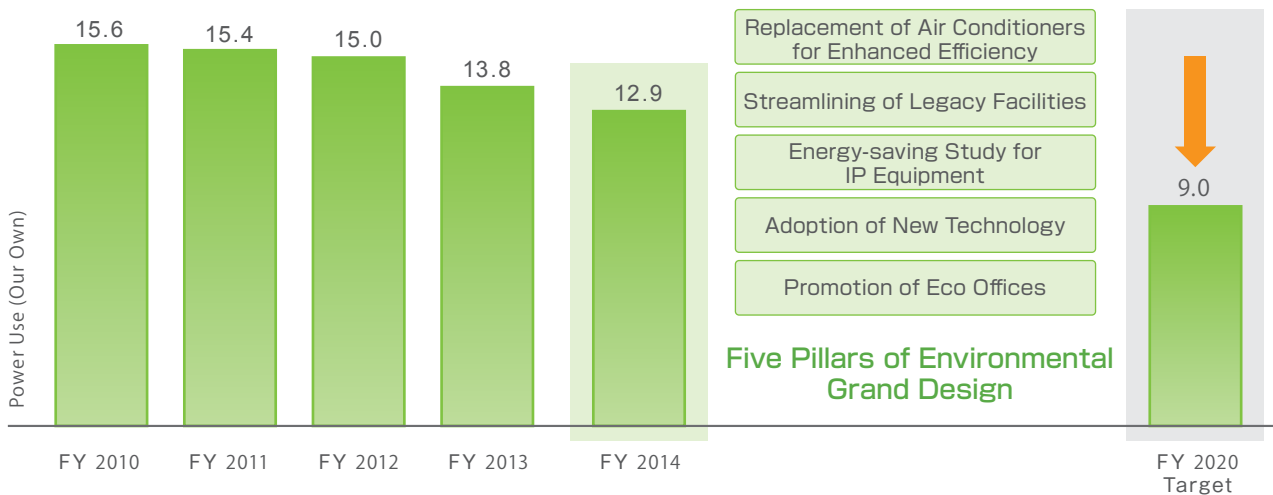
NTT West is contributing to society by setting numerical targets in our Environmental Grand Design and reducing our environmental load.

NTT West will reduce its power use and paper consumption by at least 40% by FY 2020 compared to the FY 2010 level and achieve a final waste disposal rate of 1% or less.

For details, please refer to 1-3. Environmental Grand Design (Page 11) and 3-2. Progress of the Green NTT West Strategy (Page 19).

Target for FY 2020 40% Power Use Reduction

<Unit: 100 Million kWh>



*Our power use is calculated based on the following conditions.

Tenant: 120kWh/m²
 Colocation: 30% of contracted power, PUT (1.6)
 Data center: PUE (1.6)

Deployment of the Environmental and Energy Business

We will contribute to the environment through the deployment of business activities using ICT.

For example, we can contribute to energy saving and CO₂ emission reduction through the visualization of power consumption. NTT West provides an “Eco Megane” service that visualizes power generation by solar power panels. The provision of power generation data from solar power panels as statistical renewable energy data is used for the spread of renewable energy all across Japan. In deployment using ICT technology and real estate, a hydroponic culture rental farm called “Mieru Eco Bata” and a rental outdoor vegetable garden known as “Mieru Saen” have been deployed to enable people to feel closer to the natural environment. Furthermore, we rent land suitable for solar power generation in order to build large-scale solar energy systems. In this way, we are promoting the spread of renewable energy.

Promotion of Biodiversity Conservation Activities

We contribute to the local community and natural environment protection through our efforts on the protection of local biodiversity by individual employees as representatives of our companies.

More concretely, we have been implementing the “NTT West Midori Ippai Project” which mainly focuses on tree planting in cooperation with local organizations with the aim of implementing the project in all prefectures comprising NTT West’s service area and creating an activity participation scale numbering 10 thousand people.

1-3 Environmental Grand Design

NTT West Group has established the “Environmental Grand Design,” which sets forth, in particular, targets for power usage reduction, paper usage reduction, and final waste disposal rate, in order to realize a low carbon society and form a circulating society, moreover, implementation of the “Environmental Grand Design” is being managed under a structure which includes executive personnel from our Group.

The targets to achieve by FY 2020, which are set forth in the Environmental Grand Design, are as follows.

Global Warming Countermeasures

To reduce our power use by at least 40% and total power use by at least 20% by FY 2020 compared to FY 2010.

(Reference)

In FY 2010, our power use was 1.56 billion kWh and total power use was 2.108 billion kWh.

Reduction of Paper Resources

To reduce total paper usage by 2020 by at least 40% compared to FY 2008

(Reference)

Total paper usage in FY 2008 was 39,900 t

To reduce office paper usage per head by FY 2015 by at least 50% compared to FY 2008.

(Reference)

Office paper usage per head in FY 2008 was 9,900 sheets

Reduction of Wastes

To reduce total final disposal rate to 1.0% for all wastes by FY 2020 (zero emission*3)

(Reference)

Final disposal rate in FY 2008 was 2.1%.

To maintain the final disposal rate for wastes from dismantled telecommunication facilities at 0.1%.

*1 Proposed by the United Nations University, this is a concept that aims at production that does not generate wastes on the whole by utilizing all wastes and byproducts generated by an industry as resources for another industry. NTT West Group defines zero emission as a final disposal rate of 1.0% or lower.

We have implemented a wide variety of endeavors to help achieve the targets set forth in the Environmental Grand Design.

Reduction of Power Use

NTT West Group is aiming to reduce power use, which has an effect on the amount of greenhouse gas emission, by promoting the five pillars of efforts as shown below.

Streamlining of legacy equipment, etc.

To promote renewal from old switching equipment models into new ones, and to optimize the air conditioning system in the telecommunication equipment rooms.

Development of energy-saving IP devices

To develop energy-saving type IP devices, and promote their introduction.

Renewal of air-conditioning and enhancement of efficiency

To renew old air-conditioners that are still running, and to ensure efficient operation of air-conditioners through thorough temperature control.

Promotion of eco office

To promote efforts to save electricity within the offices, such as ensuring proper air-conditioner temperature setting and proper brightness of lights, and cutting down on unnecessary use of lights.

Employment of new technologies

To utilize new energy-saving technologies, such as renewable energy including solar cells and fuel cells, supply of HVDC (High Voltage Direct Current), and Smart DASH**2 (automatic air-conditioning control system for data centers).

*2 “Smart DASH ®” is a registered trademark of Vigilent Corporation. NTT Facilities, Inc. is the agent of Vigilent Corporation.

Reduction of Paper Use

The types of paper used by NTT West Group include office paper, bills, telegrams, and phone directories. Phone directories, in particular, consume a relatively large amount of paper. Thus, we will continue our efforts to cut down on paper use by ensuring thorough collection of old directories and increasing the ratio of used paper in them.

Similarly, for office paper, we will continue to implement measures for reducing paper use, such as by thoroughly ensuring double-sided and collective printing, and the appropriate allocation of multi-function printers.

Reduction of Wastes

Industrial wastes generated by NTT West Group can be divided into office wastes, such as unwanted computers, furniture and fixtures, construction wastes following dismantlement of facilities such as telecommunication buildings and offices, wastes from civil engineering works following duct line and telephone tunnel works, as well as wastes from telecommunication facilities as a result of dismantling transmission cables and switching equipment. We will continue our efforts to further reduce the final disposal rate*3 such as by thoroughly ensuring the reuse and recycling of these wastes and providing environmental education to the on-site personnel.

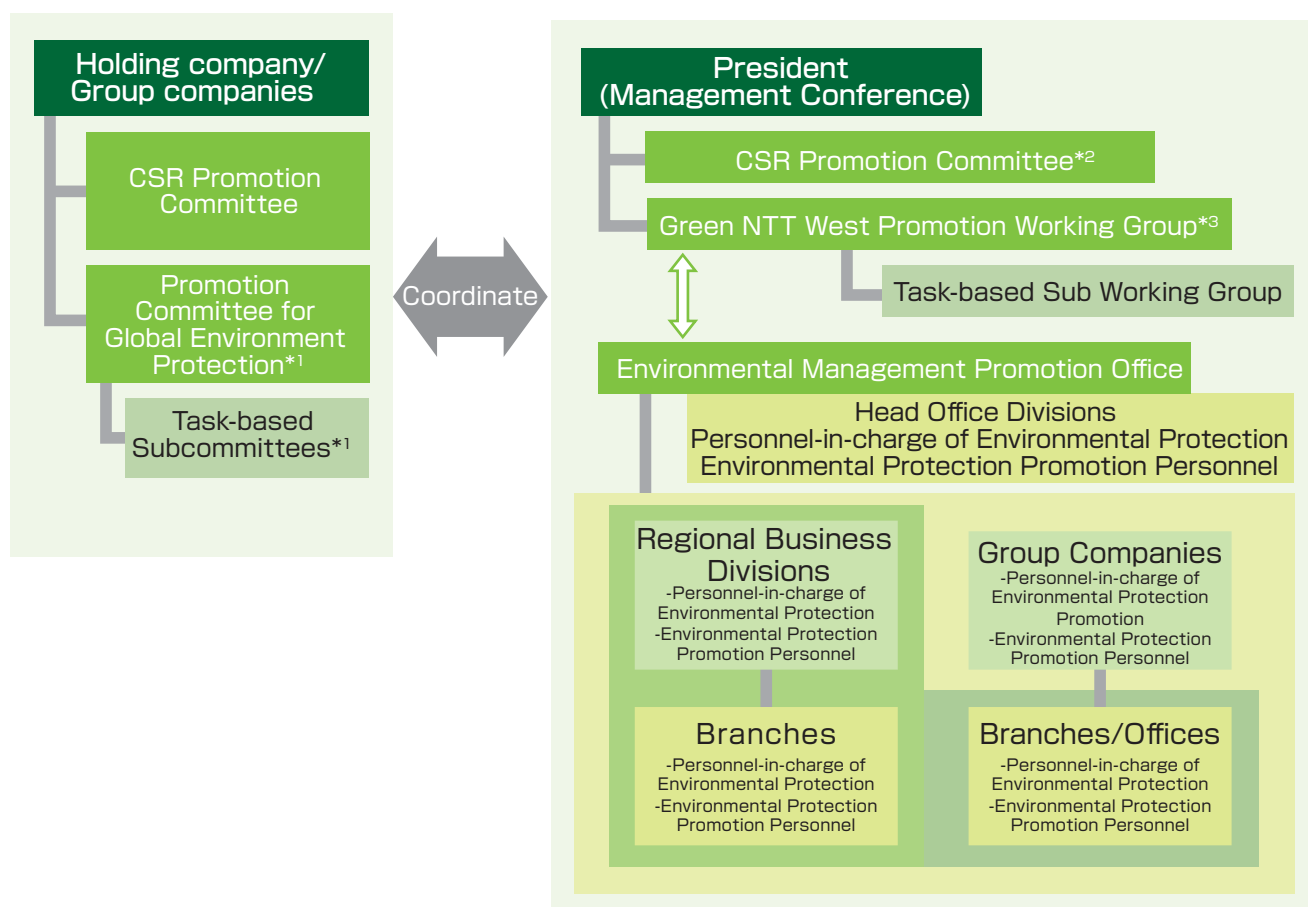
*3 Final disposal rate: the final landfill ratio that is calculated based on (final disposal amount / total amount generated).

2-1 Environmental Management Promotion System

The CSR Promotion Committee was established under NTT West's management conference for conducting deliberations on the formulation of environmental policies and environmental protection measures for the entire NTT West Group. In addition, the Green NTT West Promotion Working Group (hereinafter, WG) examines measures regarding environmental protection and shares progress of the measures in the NTT West Group.

Decisions by the committee are conveyed to the whole NTT West group from the NTT West Environmental Management Promotion Office through the personnel-in-charge for promotion of environmental protection at each regional branch and respective group company.

Coordinating with NTT Group (holding company) and group companies like NTT East and NTT Communications, we have built a system for promoting environmental protection as a group by sharing the latest trends, examining measures jointly, and reviewing progress toward achieving the target with regard to each task.



*1 Decide, manage and review NTT Group's environmental policies and measures for each task.

*2 Establishes basic principles in NTT West Group's promotion of CSR, and strive to ensure a consistent stance at the management level.

*3 Deliberations, formulation of measures and sharing of progress of various efforts in promotion of environmental protection by the NTT West Group are conducted.

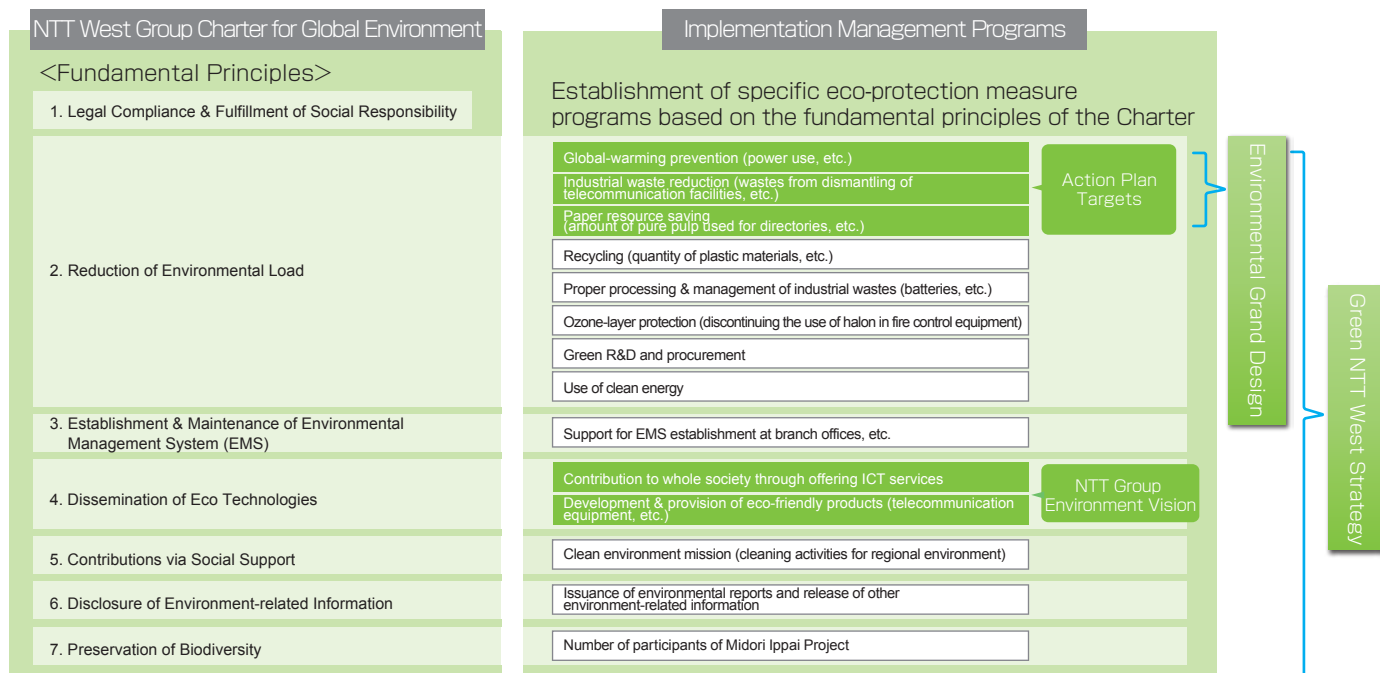
*4 While coordinating with NTT Group companies, as the administration office of the Green NTT West Promotion WG, the Environmental Management Promotion Office examines environmental policies and measures of the NTT West Group, deploys policies and measures, and shares the progress with NTT West Group companies.

Environmental Management Promotion System

2-2 Implementation Management Programs

Policies/Targets and Implementation Management Programs

Based on the NTT West Group Charter for Global Environment, the NTT West Group formulated various indicators for environmental contribution as “Implementation Management Programs” and manages the level of implementation using numbers toward achievement of the Green NTT West Strategy and the Environmental Grand Design, furthermore, for achievement of the “NTT Group Environment Vision.”



Correlations of Charter and Implementation Management Programs

Management Items (KPI)

For the Implementation Management Programs above, the following items (numerical value data, etc.) are collected/analyzed periodically, and measures as well as policy making based on the numerical values are carried out.

■ Items on Numerical Value Management

Measure	Implementation Management Item
Global Warming Prevention	CO ₂ emission from use of electricity
	CO ₂ emission from vehicles
	CO ₂ emission from gas & fuel consumption
Industrial Waste Reduction	Amount of waste disposal from civil engineering works
	Amount of waste disposal from construction works
	Amount of waste disposal from dismantled telecommunication facilities
	Amount of waste disposal from offices
Paper Resource Saving	Amount of paper used for directories, amount of pure pulp used
	Amount of paper used for telegraph paper, amount of pure pulp used
	Amount of paper used for office paper, amount of pure pulp used

■ Items on Recycling Quantity Management

Measure	Implementation Management Item
Recycling	Quantity of displaced soil from civil engineering works
	Quantity of displaced soil from construction works
	Recycle quantity of plastic from dismantled telecommunication facilities
	Recycle quantity of small secondary batteries for telecommunication equipment
	Quantity of polystyrene foam used for packagings

■ Items on Proper Processing Management

Measure	Implementation Management Item
Proper Processing & Management of Wastes	Control of products with PCB content
	Remaining amount of asbestos in bridge support
	Proper processing of disposed telecommunication equipment
	Proper processing of disposed batteries
Ozone Layer Protection	Proper processing of medical wastes
	Discontinued use of halon for fire control equipment

■ Items on Progress Management

Implementation Management Item
Green R&D and procurement
Use of clean energy
Development & provision of eco-friendly products (telecommunication equipment, etc.)
Clean environment mission (cleaning activities for regional environment)
Promotion of social contributions
Support for establishment of EMS at branch offices, etc.
Coordination with group companies
Issuance of environmental reports and release of other environment-related information

Implementation Management Programs for Protection of Global Environment

2-3 Environmental Audit

Audit Methods and Results

Self-check

Each relevant section conducts an annual self-check on compliance with the environmental laws, progress of the implementation management programs, and the degree of establishment of environmental protection activities.

The items for this self-check, which are classified into three levels as follows, are subject to an annual review by the responsible sections according to amendments of the relevant laws and internal regulations.

A. Matters related to laws and administrative directives

B. Matters related to internal regulations

C. Other matters to be implemented

Environmental Audit by Audit Department

With the environmental laws and regulations becoming stricter each year, our Audit Department performs an environmental audit on environment-related operations that particularly require legal compliance. Unlike the self-check, this audit is objectively conducted by auditors from specialized organizations, and plays the additional role of verifying the effectiveness of the self-check.

Environmental Audit Reporting

During the audit conducted in FY 2014, no case was brought to attention. Also no administrative penalty or fine was imposed for violation of the environmental laws.

NTT West Group's Business Activities and Environmental Laws

The following list shows the major laws and regulations for which the business activities of NTT West Group are subject to.

	Major Laws & Regulations	Wastes Generated from NTT West Group's Business Activities
Wastes/ Recycling	Wastes Disposal and Public Cleansing Law	<ul style="list-style-type: none"> Wastes from dismantled telecommunication facilities Wastes generated from construction works Wastes generated from civil engineering works Wastes generated from office activities Medical wastes generated from hospitals Asbestos used in fire-resistant materials of bridge (pipes and installed metal items).
	Law for Promotion of Effective Utilization of Resources	<ul style="list-style-type: none"> Small secondary batteries used for information terminals, etc.
	Construction Materials Recycling Law (Law Concerning Recycling of Materials from Construction Work)	<ul style="list-style-type: none"> Wastes generated from construction works Wastes generated from civil engineering works, etc.
	Containers and Packaging Recycling Law (Law for Promotion of Sorted Collection and Recycling of Containers and Packaging)	Polystyrene foam, plastic bags, wrapping paper for packaging information terminals
Energy & Global Environment	Act on Promoting Green Purchasing (Law Concerning the Promotion of Procurement of Eco-friendly Goods and Services by the State, etc.)	Procurement of office supplies, etc
	Energy Saving Act (Law Regarding the Rationalization of Energy Use)	<ul style="list-style-type: none"> Electricity & gas consumed at telecommunication facilities & offices Goods & facilities transported in business activities
	Ozone Layer Protection Act (Act for Protection of the Ozone Layer through the Control of Specified Substances, etc.)	<ul style="list-style-type: none"> Halon used for fire control equipment at buildings Old-type air-conditioners used in company vehicles, etc
Chemical Substances	Fluorocarbons Recovery and Destruction Law (Law Concerning the Recovery and Destruction of Fluorocarbons)	Old-type air-conditioners used in company vehicles, etc.
	Act on Special Measures Concerning the Proper Treatment of Polychlorinated Biphenyl Waste	Electrical equipment (fluorescent ballasts, transformers, capacitors, etc.)
Air Pollution	Automobile NOx PM Control Law (Law Concerning Special Measures for Total Emission Reduction of Nitrogen Oxides and Particulate Matters)	Exhaust gas from use of company vehicles
	Air Pollution Control Law	Exhaust gas from boilers installed in buildings, etc.

Environmental Laws and Regulations Related to Business Activities

2-4 Environmental Communication

The NTT West Group plans various types of internal seminars and training and provides proactive training sessions on the environment as listed below so individual employees can voluntarily become aware of environmental protection and implement efforts toward reducing their environmental load during daily business activities.

Environmental Protection Trainings for All Employees and Communication through Internal Website

Environmental Protection Trainings

In order to develop awareness in each employee of NTT West Group toward activities for environmental protection, we conducted web-based training sessions on environmental protection to about 80,000 employees.

In addition to conveying the importance of environmental measures, the sessions have designed action plans for each employee through acquiring knowledge such as that on NTT West Group's approach toward environmental management.

Internal Website

By posting internal publicity documents related to environmental conservation as well as the efforts and topics of each section, the site has helped to promote exchange of information between sections, enhance the efficiency of implementing environmental measures by each section, and heighten employees' awareness toward environmental conservation.



Environmental Self-check Seminars for Environmental Audit Ability Enhancement

NTT West Group holds environmental self-check seminars for the personnel who are in charge of conducting self-checks (Page 14) at each section.

Being a part of the overall environmental education, the seminars are designed not only to enable participants to learn the skills for performing self-check, but also to familiarize them with the relevant environmental laws and related social trends as well as enhance their awareness toward activities for protecting the environment. In FY 2014, 126 employees participated in the seminars. Since FY 2006, the seminars have been held in the form of distant training to help ease the burden on the environment.



Environmental Self-check Seminar

Public Information Disclosure

Website on Our Environmental Activities

We have launched a “Global Environmental Protection Activities” website to disclose NTT West Group’s general efforts toward environmental protection. On this website, you can find the NTT West Group Charter for Global Environment, the main pillar of the group’s environmental protection activities, as well as reports that give a full picture of these activities.



Also, the “Main Efforts” page on the website contains links related to environment that are available on the NTT West official website, thus fulfilling the function as a portal site on environmental information at the same time.

Website <http://www.ntt-west.co.jp/kankyo/>

Release of CSR Report

NTT West Group’s attitude toward CSR (Corporate Social Responsibility) and the corresponding systems, together with the concrete actions taken in each fiscal year are disclosed in simple terms for our stakeholders. By allowing stakeholders to gain a better understanding of our group’s CSR efforts, we hope to widen our network of communication.



CSR reports have been released since FY 2005, and are scheduled to be prepared on a yearly basis.

Website <http://www.ntt-west.co.jp/csr/>

External Exhibition Activities

At the Osaka ATC Green Eco Plaza, NTT West Group’s environmental activities and goods related to environmental protection are displayed and exhibited using panels for easy understanding by visitors.



Website http://www.ecoplaza.gr.jp/corp/exhibitors/ntt_w/index.html

Provision of Hands-on Environmental Education Sessions for the Conservation of Biodiversity

For the conservation of biodiversity, activities to have nature and the environment known are also important. We provide hands-on environmental education sessions for children by taking advantage of the afternoons on days where tree planting activities are held.



External Awards

Award	Description	Award subject
Japan Nature Conservation Award	The “NTT West Midori Ippai Project,” a project that is supported by the character “Midori Nishino,” has been awarded for its activities that contributed to nature and biodiversity conservation.	NTT West

For details on the above project that won the “Japan Nature Conservation Award,” please refer to Section 4-3 (Page 25).

2-5 Management Including Partners

Green Guidelines

In the provision of telecommunication services, NTT West owns numerous telecommunication facilities and buildings for housing these facilities. Furthermore, we procure many materials from the outside to build our telecommunication facilities. It can be assumed that there is an environmental load due to the construction, possession, operation, and dismantling of buildings, as well as business activities including research and development. Thus, we stipulated “Green Guidelines” to reduce this environmental load. In the Green Guidelines, “Guidelines for Green Procurement” regarding telecommunication facilities, “Green Design Guideline for Buildings” regarding the planning, design, management and dismantling of buildings, and “Green R&D Guidelines” regarding research and development were established, and a reduction of environmental load generated from our service provision has been promoted.

Recycling of Telecommunication Materials

For end-of-life telecommunication materials that were removed, NTT West has been working toward the 100% recycling of resources in mutual coordination with suppliers, collection/transport companies, and recycling companies. For example, we established a closed loop recycling system for cable jackets on telecommunication cables (metal, optic), ready access terminal boxes, support guards, etc., where plastics used in these items can be recycled into the same products. In addition, we reused free bending optical fiber cords and sold various types of removed routers that are still usable as used items. In this way, NTT West is striving to contribute to a circulating society.

Efforts for Energy Efficiency Guidelines

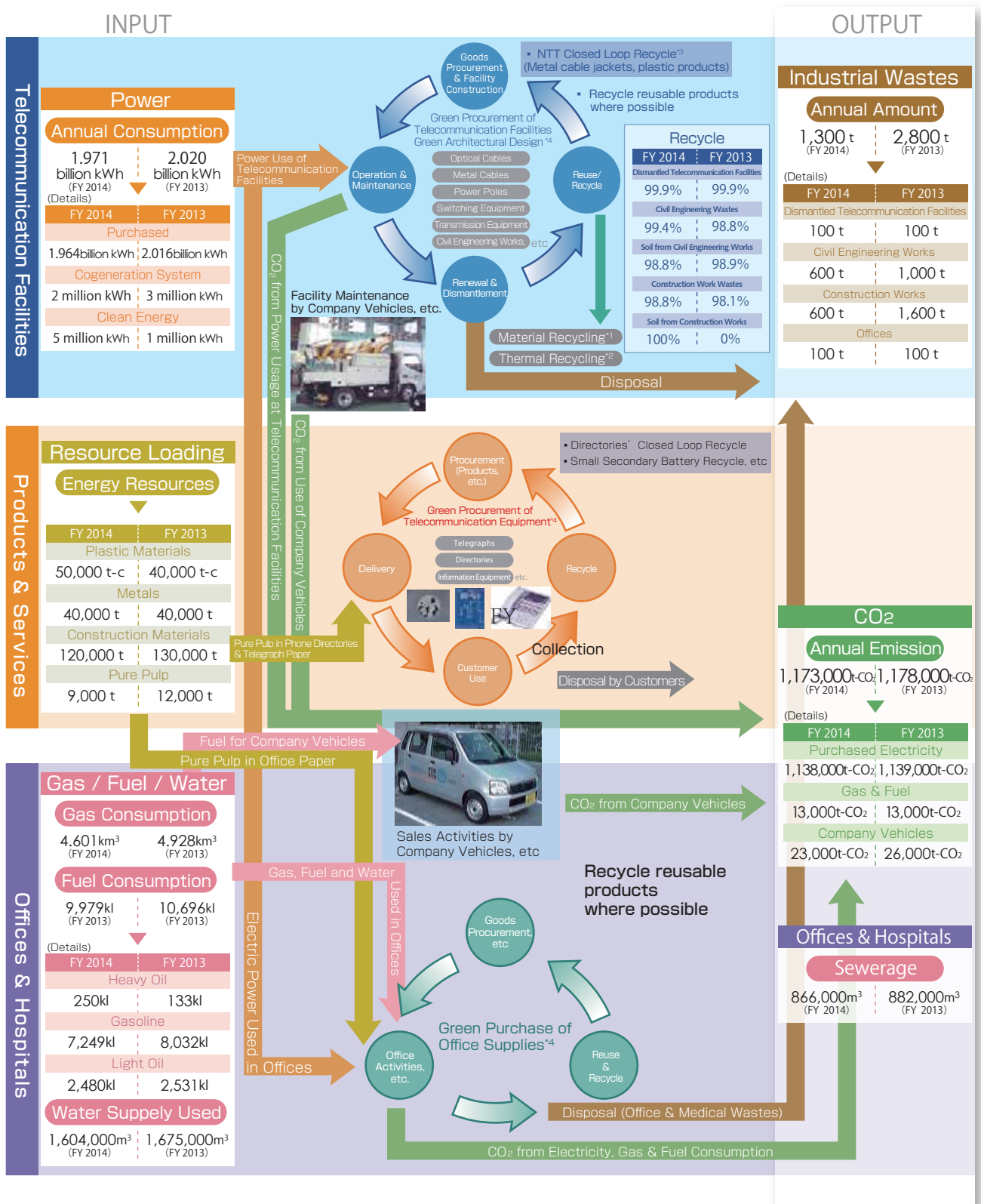
At least 90% of the greenhouse gas (CO₂) emissions of the NTT West Group results from power use in telecommunication facilities and offices. To reduce these emissions effectively, it is essential we develop and procure equipment with high energy efficient performance/functions when introducing new equipment.

Therefore, we stipulated a basic concept and target value for each piece of equipment in the development and procurement of routers, servers and other ICT equipment to be used internally as “NTT Group Energy Efficiency Guidelines”, and we have been working on controlling our emissions of greenhouse gas.

Efforts through Suggestions/ Recommendations from Suppliers

We procure diversified products from suppliers of telecommunication facilities, and at the same time, the suppliers provide us with various suggestions and recommendations regarding environmentally-friendly materials and production methods toward increasing energy efficiency and improvement in the environmental aspect. In this way, NTT West procures environmentally-friendly products while mutually cooperating with suppliers.

3-1 Material Flow (Environmental Load Associated With Business Activities)



*1 Material recycling: reusing collected wastes as raw materials of products.
 *2 Thermal recycling: wastes collected are burned and reused as thermal energy.
 *3 NTT closed loop recycle: a form of material recycling. The name comes from the process of recycling wastes produced in our operations as NTT products. For example, old phone directories are used to produce new directories.
 *4 Green Procurement/Design/Purchase: refers to eco-minded procurement, design and purchase operations ranging from the construction of telecommunications facilities to office supplies and products offered to our customers.

3-2 Progress of Green NTT West Strategy

Since FY 2012, along with reporting on our environmental protection activities to a CSR Committee, the following progress situation of the Environmental Grand Design is reported to management every quarter, and discussions are held for further improvement. The results are disseminated to the entire NTT West Group through the employees of the Group companies who are responsible for the activities.

These efforts realized a 52 million kWh reduction of our power use in FY 2014. In addition, we continue to achieve zero emissions for our final waste disposal rate.

Implementation of Global Warming Countermeasures

Global Warming Countermeasures

The contributing factors of CO₂ emission at NTT West Group are our use of power, company vehicles and fuel (gas and oil). Among these, power use is the largest emission source.

In FY 2014, our power use fell in comparison to FY 2013 due to the understanding of our monthly power use situation in conferences held by the Power Use Reduction Task Force (Refer to Figure 1.), thus CO₂ emissions also went down (Figure 2).

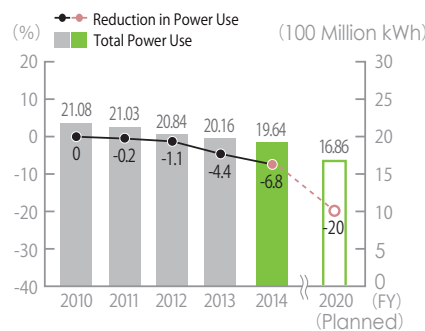


Figure 1: Power Use

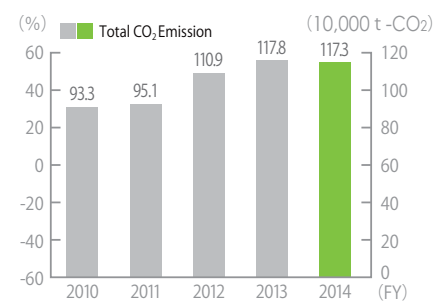
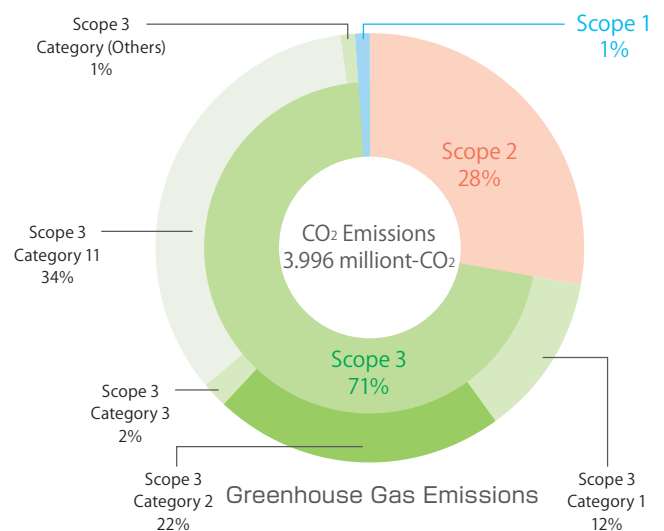


Figure 2: Total CO₂ Emission

Greenhouse Gas Emission of Entire Supply Chain “Scope 3”

For conservation of the global environment, efforts to reduce the environmental load including all supply chains related to business activities are important. In addition to “Emissions generated directly by fuel use, etc. (Scope 1)” and “Emissions generated indirectly in conjunction with electrical and other energy use, etc. (Scope 2)” that were items we have reported on in the past, we calculated “Indirect emissions generated over the whole value chain (Scope 3)” based on the “Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain (Ver2.1)” (Revision in March 2014, Ministry of the Environment & Ministry of Economy, Trade and Industry). For “Category 1,” which we had not been able to work out a figure in the last fiscal year, we have adopted a new approach to enhance the accuracy of the calculation. We will further promote green procurement and waste reduction, and continue to make efforts toward the reduction of our entire environmental load related to our business activities.

Scope & Category	Emissions (10,000t-CO ₂)
Scope 1 (Emissions generated directly by fuel use, etc.)	3.7
Scope 2 (Emissions generated indirectly in conjunction with electrical and other power use, etc.)	113.8
Scope 3 (Indirect emissions generated over the whole value chain)	282.1
Category 1 Purchased goods and services	46.5
Category 2 Capital goods	88.3
Category 3 Fuel and energy related activities not included in Scope 1 or 2	7.4
Category 4 Transportation and delivery (upstream)	0.2
Category 5 Waste generated in operations	0.3
Category 6 Business travel	0.2
Category 7 Employee commuting	0.2
Category 8 Leased assets (upstream)	-
Category 9 Transportation and delivery (downstream)	-
Category 10 Processing of sold products	-
Category 11 Use of sold products	138.3
Category 12 End-of-life treatment of sold products	0.8
Category 13 Leased assets (downstream)	-
Category 14 Franchises	-
Category 15 Investments	-
Total of Scope 1, 2, and 3	290.2



Reduction of Paper Use

NTT West Group uses paper for phone directories, bills, office work and telegraphs.

The total amount of paper used during FY 2014 was 24,300 tons (Figure 3), of which 19,800 tons (city life guide 1,600 tons as mentioned elsewhere) were used for directories, while for bills, office work, and telegraphs, we consumed 2,200, 1,900 and 400 tons respectively.

Besides being committed to paperless meetings and making thorough and systematic efforts to reduce paper use within the company, we are also promoting a web-based paperless billing service, My Billing, with understanding and support from our customers.

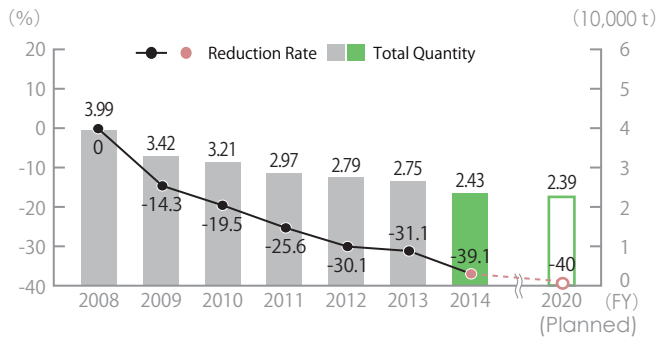


Figure 3: Total Paper Use

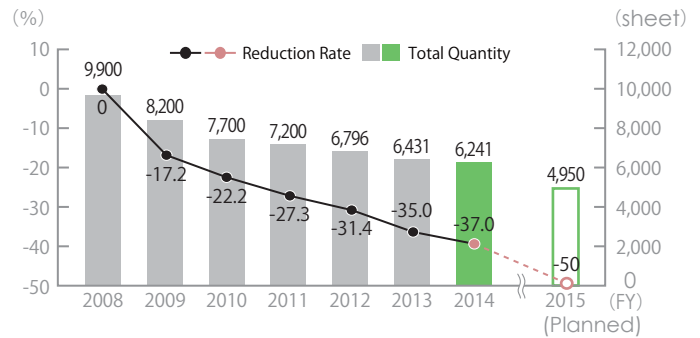


Figure 4: Quantity of Office Paper Used Per Employee

Reduction of Final Waste Disposal Rate

Industrial wastes are generated mainly from dismantled telecommunication facilities, civil engineering projects, construction projects, and office work.

The final industrial waste disposal rate for FY 2014 was 0.5% (Figure 5), and we achieved zero emissions for the third consecutive year. For the breakdown, 0.04% was from dismantled telecommunication facilities while civil engineering projects, construction projects, and office work generated 0.6%, 1.2%, and 0.7% respectively.

While the rate for dismantled telecommunication facilities was low, that of office work was comparatively high. Because of this reason, we keep in mind to procure environmentally-friendly office supplies that can be easily reused or recycled.

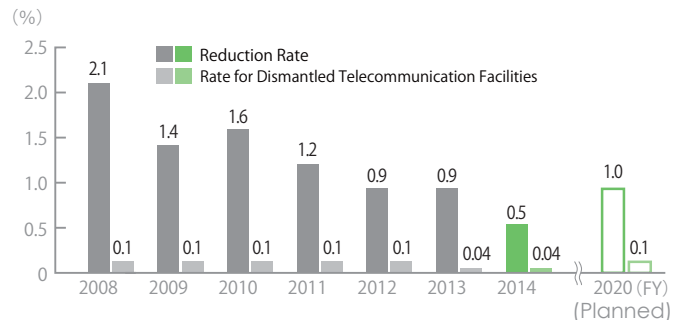


Figure 5: Final Industrial Waste Disposal Rate

Biodiversity Conservation Activity

The activity, originally launched on an approximately 2,000 participant scale in 18 prefectures with the aim of 10,000 participants in all 30 prefectures comprising NTT West's service area, grew into an activity with 11,526 participants in 30 prefectures in FY 2014. Partnerships with local organizations as well as activities using ICT such as summits (Afuhi Summit) connecting remote areas and classes on biodiversity (protection of rosy bitterling) were also deployed.

NTT West will continue to proactively work on the conservation of regional biodiversity with the aim of 10,000 participants.

4-1 Effort for Reducing Our Environmental Load

Service to Revive Used Batteries



In general, used batteries are returned for recycling to the manufacturer, for example. This is a system that was established by organizations such as the Battery Association of Japan. In fact, some of the batteries to be recycled can actually be reused instead of being disassembled for recycling, and reusing them as they are helps to reduce wastes and cut down cost too if they are used for a long period of time.

Telwel West Nippon, a member of the NTT West Group, started a battery revival service since July 2009, which went into full swing in July 2011 as a service that receives small used batteries from customers and revives them before returning to the customer.

Specifically, by applying a high-frequency pulsed electric current to Nickel-Cadmium (Ni-Cd) or Nickel hydrogen (NiH) rechargeable batteries, which are used as a backup power source in equipment such as fire alarms, guide lights and emergency lightings, the power storage capacity of these batteries can be restored to a level that is close to that of brand new ones.

About 27,000 batteries with a capacity between 900mAh and 4000mAh are brought to the battery center yearly for revival, where they would be subject to a variety of tests. 60% or more of the batteries that have passed the tests are being reused, while rejected ones are sent for recycling.

At NTT West, we will continue to promote eco-friendly efforts to further reduce the amount of wastes.



For more details on the battery revival service, please contact the Battery Center, Office Sales Promotion Division, Telwel West Nippon
<http://www.telwel-west.co.jp/service/environment/battery>

4-2 Environmental/Energy Business Using ICT

Release of “Ene-Farm App” for Hikari Box+ to Grasp Power Use on TVs at Home

To achieve a low carbon society, NTT West has been putting in efforts to reduce the load on the environment such as by offering services that make use of ICT. The Group has also developed “Hikari Box+” based on a concept that enables users of all generations to enjoy different experiences by connecting to the Internet through home TVs. It is now working with a diverse range of business partners to develop new ways of utilizing “Hikari Box+” together with “Flet’s Hikari.”

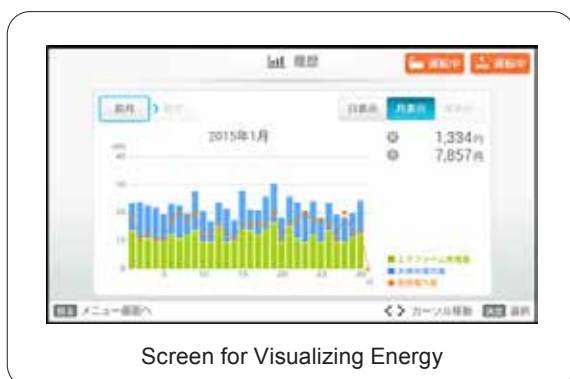
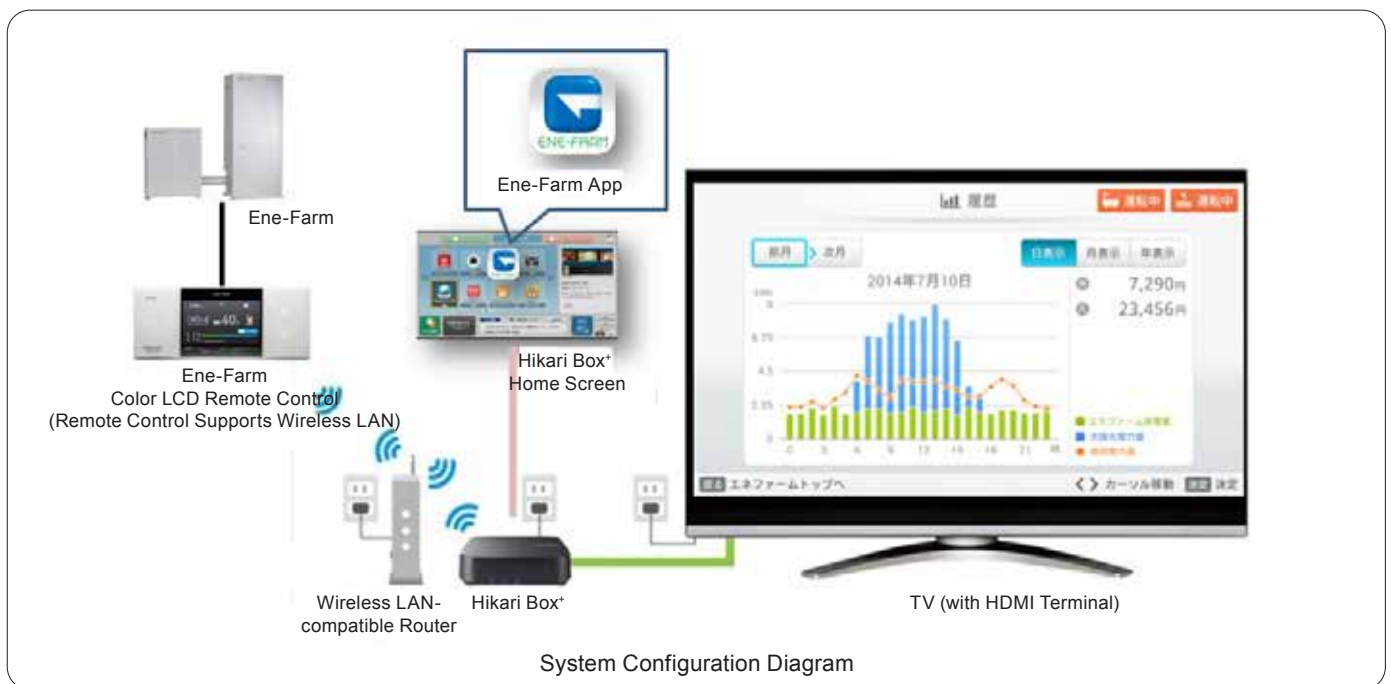
In January 2015, NTT West established an alliance with Osaka Gas to release an “Ene-Farm app,” which enables users to operate and view information about the “Ene-Farm,” a home-use fuel cell offered by Osaka Gas, on “Hikari Box+.”

Based on the Ene-Farm smartphone application provided by Osaka Gas, NTT West developed a special application for “Hikari Box+,” which comes in a layout that offers excellent visibility and operability on the large TV screen.

An advantage of using a large screen is that the entire family can check their electricity usage at home while relaxing in the living room, thereby raising the awareness of energy conservation in the users’ daily lives.

By doing so, users will naturally cultivate the habit of engaging in energy-saving activities diligently in their daily lives, thereby helping to reduce power usage and even CO₂ emission.

Based on the Green NTT West Strategy, NTT West will continue to promote activities that contribute to global warming prevention with the use of ICT.



For more details on this service, please visit the following webpage on NTT West Global Environment Protection Activities.
http://www.ntt-west.co.jp/kankyo/action/ach_201502_01/

Acquisition of SMA Certification with Hikari Box+ – Efforts to Promote the Widespread Use of Smart Meters

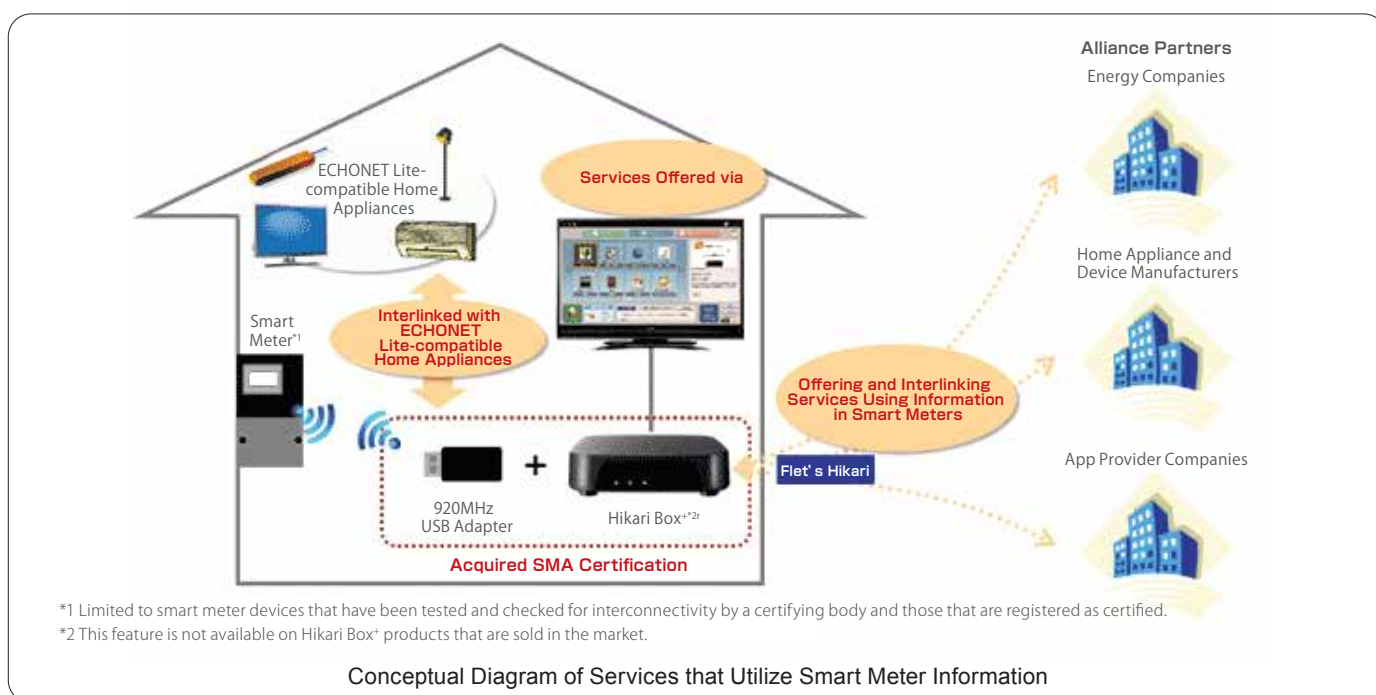
To achieve a low carbon society, NTT West has been putting in efforts to reduce the load on the environment such as by offering services that make use of ICT.

Ever since the energy issue that emerged after the Great East Japan Earthquake, energy management that enables the realistic and smart use of energy has been identified as a social issue. Against this backdrop, the Energy Saving Act was revised in April 2014 with the aim to equalize the use of electrical energy, and the 10 major domestic power companies in Japan have decided to introduce a smart meter^{*1} that enables daily power consumption to be monitored. Currently, efforts are underway by the respective companies to promote the installation of a smart meter by all their customers.

In light of this trend, NTT West and NTT Comware set sights on a communication route that connects the smart meter with devices such as the HEMS controller inside buildings (Route B)^{*2}, and acquired SMA certification^{*3} by a third-party organization on January 23, 2015 for a device configuration that comprises the “Hikari Box+^{*4},” an ECHONET Lite^{*5}-compatible home appliance controller, and a “920MHz^{*6} USB adapter” that enables wireless communication with devices such as a smart meter.

Thanks to this endeavor, smart meter data acquired via Hikari Box+ and the 920MHz USB adapter can be collected through the Internet, and new services can be created by cooperating with different alliance partners to enable users to utilize energy more conveniently and smartly, thus helping to prevent global warming.

Based on the Green NTT West Strategy, NTT West will continue to promote activities that contribute to global warming prevention with the use of ICT.



*1 Smart meter, unlike the conventional analog-type induction electricity meter, is a next-generation electricity meter that is equipped with built-in communication functions and measures electric power digitally.

*2 This route establishes communication between the smart meter and the Home Energy Management System (HEMS controller).

*3 ECHONET Lite is a set of communication standards formulated by ECHONET Consortium for building a home network which provide for the control of more than 80 types of devices, including home appliances, smart electric energy meters and solar power generation systems. In 2011, ECHONET Lite was recommended as an “open standard interface” at the “Smart House Standardization Meeting” held under the Japan Smart Community Alliance.

*4 To connect to the Internet using the “Hikari Box+,” users need to subscribe to and pay for a broadband line (such as “Flet’s Hikari”) as well as an Internet service provider. Devices such as a router are also needed. A TV that is equipped with an HDMI terminal is required to make use of this product. For more details, please visit our NTT West website [http://www.ntt-west.co.jp/kiki/hikaribox/]. Also, “Hikari Box+” products that are commercially available in the market do not support the ECHONET Lite home appliance controller feature.

*5 The 10 major domestic power companies in Japan have chosen the 920MHz bandwidth as the main mode for the Route B communication system. For more details, please refer to [http://www.meti.go.jp/committee/kenkyukai/shoujo/smart_house/pdf/006_s03_00.pdf].

*6 SMA certification is a specification compliance certification by a third-party organization. Tests are conducted on actual devices according to the interface specifications for application layer communication between smart meters and HEMS controllers.

For more details on this service, please visit the following webpage on NTT West Global Environment Protection Activities.
http://www.ntt-west.co.jp/kankyo/action/ach_201502_02/

Comprehensive Next-generation Agricultural Project through IT Integration between Industry and Academia

NTT FACILITIES and NTT West concluded a joint research agreement with the University of Tokyo, Ibaraki University, Suzuyo & Co. and Suzuyo Shoji. Under the supervision of Professor Emeritus Ichiro Yamada from the University of Tokyo, the group embarked on a major verification test since May 2014 at Bell Farm, an agricultural corporation under the Suzuyo Group, on the low node-order pinching and high-density planting* of tomatoes, a next-generation tomato growing system using ICT.



Bird's-eye View of Bell Farm

(Experiments are currently in progress at two of the greenhouse blocks)

NTT FACILITIES, together with Suzuyo Group, operator of the verification experiment site, as well as other organizations, developed a “growth environment monitoring system.” In addition to the existing “agricultural management support system” that enables growth environment monitoring and cultivation management, the new system offers features for three-dimensional monitoring of information on “cultivation resources,” such as the amount of power and heavy oil used, as well as location information inside the farm. A system for recording and collecting information on the growth condition (leaf area, stem elongation, stem diameter, fruit weight, sugar content, acidity level, etc.) has also been developed and linked with the growth environment monitoring system.

Meanwhile, NTT West, with its own technology and in joint effort with organizations including the University of Tokyo, built an agricultural work monitoring system that enables data accumulation on the motion path of skilled workers responsible for cultivation management in the greenhouse, movies as well as work process history. By linking this system with the growth environment and growth condition monitoring systems built by NTT FACILITIES, it is now possible to provide an integrated system for visualizing the three types of information needed for cultivation, namely “growth environment,” “growth condition” and “agricultural work.”

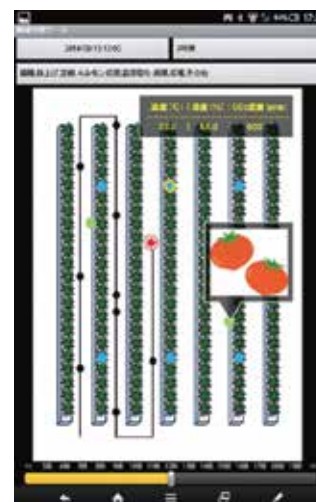
* Low node-order pinching and high-density planting is a method of repeating short-term cultivation by growing seedlings at a planting density that is 4 to 5 times higher than usual and completing the cycle after harvesting only fruits from the first to the third inflorescences.

■ Division of Roles in the Joint Research

University of Tokyo, Ibaraki University	Development of an optimal cultivation system, development of agricultural work monitoring technology and big data analysis
Suzuyo Group	Building and operation of a verification experiment site, development of a basic cultivation system and examination of the business model
NTT FACILITIES	Building of a verification experiment site, development of a growth environment monitoring system and development of environmental control technology for energy and resource conservation
NTT West	Development of an agricultural work monitoring system, development of a system that supports the integrated display of 3 types of monitoring information, namely “growth environment,” “growth condition” and “agricultural work” (integrated triaxial monitoring information system), and application of ICT to the agricultural sector



Growth Environment Monitoring System (Representative Locations)



Integrated Triaxial Monitoring Information System (Conceptual Diagram)

4-3 Efforts with Communities and Partners

Selected for the “Japan Nature Conservation Award” – NTT West Midori Ippai Project



The “NTT West Midori Ippai Project,” a project that is supported by the character “Midori Nishino,” has been selected for the FY 2014 Japan Nature Conservation Award.

The Japan Nature Conservation Award is awarded to efforts in Japan that have contributed to nature protection and biodiversity conservation. 2014 also marked the 40th anniversary since the establishment of the Nature Conservation Charter in Japan. This award aims to encourage more active efforts in nature protection and biodiversity conservation, as well as to promote the building of a community and society where nature blends harmoniously with our daily lives.

This was the first time the Japan Nature Conservation Award was presented. Entry was opened to the public from September 1 to October 31, 2014. A total of 112 entries were received from all over the country, from which a grand prize winner and winners for the respective categories were selected.

Winning this award was an encouragement to NTT West, and we will continue to promote activities for biodiversity conservation together with the local communities.



FY 2014 Japan Nature Conservation Award
http://www.ntt-west.co.jp/kankyo/action/ach_201504_01/

NTT West Group Environmental Report 2014 Data Sheet

			Unit	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Global Warming Prevention Measures	Power	CO ₂ Emission	10,000t-CO ₂	16.3	17.4	19.1	18.4	28.6	82.6	84.6	86.3	92.4	88.8	90.8	106.8	113.9	113.8
		Purchased Quantity	100mil/kWh	16.2	16.9	17.2	17.9	18.9	20.05	20.33	20.43	20.76	21.08	21.03	20.84	20.16	19.64
		Electricity Generated by CGS	100mil/kWh	0.25	0.24	0.25	0.25	0.24	0.22	0.07	0.03	0.03	0.03	0.04	0.03	0.03	0.03
	Clean Energy System	No. of Equipment Introduced	Sets	42	43	46	48	48	49	51	63	61	61	50	45	41	47
		(Breakdown) Solar-generated Electricity, etc	Sets	40	41	44	46	48	47	49	61	59	59	48	43	46	45
		Fuel Batteries/Hybrid	Sets	2	2	2	2	2	2	2	2	2	2	2	2	2	2
		Electricity Generated	10,000kWh	189.5	168.9	183.4	163.5	156.2	140.76	36.59	46.16	50.47	45	74.1	92.0	125.6	486.7
	Company Car	CO ₂ Emission	10,000t-CO ₂	1.10	2.82	3.15	0.93	3.37	3.24	3.37	3.16	3.10	3.24	3.01	2.77	2.63	2.25
		No. of Low Emission Vehicle	Cars	105	244	252	248	252	250	224	213	171	202	219	295	333	371
		(Breakdown) Electric Vehicle	Cars	3	0	0	0	0	0	0	0	0	0	0	3	3	3
		Natural Gas Vehicle	Cars	56	168	172	170	167	160	132	106	77	69	53	38	21	17
		Hybrid Vehicle	Cars	46	76	80	78	85	90	92	99	94	133	166	254	309	351
	Fuel	CO ₂ Emission	10,000t-CO ₂	2.50	2.40	2.20	0.61	0.58	1.73	0.93	1.47	1.20	1.30	1.30	1.28	1.27	1.26
	Waste Reduction Measures	Telecommunications Facility	Disposal Quantity	10,000t	1.0	0.2	0.16	0.07	0.03	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Total Emission			10,000t	14.3	10.5	9.8	11.95	12.38	11.91	12.74	12.87	13.2	12.47	13.35	13.58	12.63	11.60
Recycled Quantity			10,000t	13.3	10.3	9.6	11.88	12.35	11.9	12.73	12.86	13.19	12.46	13.34	13.57	12.62	11.54
(Breakdown) Telecommunication Cables			10,000t	3.2	1	0.9	1.58	0.75	0.76	1.18	1	0.88	0.89	0.85	0.85	0.62	0.68
Switching Equipment			10,000t	0.7	0.6	0.8	0.85	0.9	0.76	0.76	0.79	0.84	0.82	0.79	0.86	0.72	0.39
Concrete Poles			10,000t	9	7.8	6.9	9.44	10.01	9.67	10.14	10.46	10.54	10	11.1	11.1	11.28	9.68
Others			10,000t	0.4	0.8	1	0	0.64	0.7	0.65	0.61	0.93	0.75	0.6	0.6	0	0.84
Disposal Quantity of Waste Batteries (Industrial Wastes Subject to Special Control)			t	924	525	500	184	45	15	4	30	58	185	32	10	7	6
Quantity of Waste Batteries Generated			t	4,621	5,718	5,261	3,961	2,669	2,788	2,229	2,895	6,689	4,981	3,578	3,693	4,561	2,588
Recycled Quantity of Waste Batteries			t	3,697	5,193	4,761	3,777	2,624	2,773	2,225	2,865	6,631	4,930	3,546	3,683	4,554	2,582
Wastes from Civil Engineering Works		Disposal Quantity	10,000t	1.40	1.20	0.01	0.13	0.02	0.04	0.08	0.10	0.11	0.16	0.11	0.11	0.10	0.06
		Quantity Generated	10,000t	5.6	5.2	7.9	6.4	2	4	9.06	8.52	9.57	9.07	7.02	10.2	8.4	9.6
		Recycled Quantity	10,000t	4.2	4	7.8	6.27	1.98	3.96	8.98	8.42	9.47	8.9	6.91	10.1	8.3	9.5
		Recycle Rate	%	75.0	77.0	99.9	98.0	99.0	99.0	99.1	99.8	98.9	98.2	98.4	98.9	98.8	99.4
Wastes from Construction Works	Disposal Quantity	10,000t	2	1.2	2	1.4	0.7	0.35	0.74	0.47	0.31	0.3	0.3	0.19	0.16	0.06	
	Quantity Generated	10,000t	17.8	9.8	18.6	20.7	16.0	8.0	14.3	11.8	14.7	16.2	15.8	9.3	8.1	5.5	
	Recycled Quantity	10,000t	15.8	8.6	16.6	19.3	15.3	7.61	13.52	11.34	14.4	15.6	15.5	9.1	7.9	5.4	
	Recycle Rate	%	89	88	89	93	96	95.6	94.8	96.0	97.9	97.76	98.4	97.9	98.1	98.8	
Offices	Disposal Quantity *2	10,000t	0.35	0.32	0.31	0.19	0.18	0.24	0.04	0.06	0.04	0.07	0.03	0.01	0.01	0.005	
	Disposal Quantity of Medical Wastes	t	1,279	1,305	1,211	1,162	1,095	1,139	1,108	1,179	1,135	1,018	438	487.7	426.4	416.1	
Paper Resource Reduction Measures	Phone Directories	Quantity of Pure Pulp Used	10,000t	2.5	1.9	1.8	1.7	1.3	1.1	1.1	0.9	0.5	0.6	0.7	0.6	0.9	0.7
		Usage Rate of Old Paper	%	61	64	64	66	67	68	67	71	80	79	73	73	60	61
		Quantity of Paper Used	10,000t	6.6	5.3	5.1	4.8	4.0	3.5	3.4	3.2	2.7	2.6	2.4	2.3	2.3	2.0
		Quantity Collected	10,000t	3.3	3.3	3.1	2.8	2.6	2.1	1.8	1.9	1.5	1.4	0.9	0.62	0.44	0.37
		Quantity of Pure Pulp Used	10,000t	0.03	0.03	0.03	0.02	0.02	0.02	0.03	0.03	0.03	0.005	0.03	0.01	0.01	0.01
		Quantity of Pure Pulp Used	10,000t	17	170	15	0.5	0	0	0.07	0.16	0.24	0.11	0.09	0.07	0.05	0.05
	Telecommunications Facility	Repelling Quantity of Dismantled Facilities (Plastic)	t	208	567	462	303	272	292	428.9	189	157	159	146	143	164	21
		Recycled Quantity of Optical Cables	t	207	331	716	725	224	796.5	883.3	1024.0	1,027	933	1,148	1,398	709	1,201
		Quantity Generated	10,000t	30.7	23.7	36.6	31.7	24.3	30.5	34.9	35.6	33.1	18.5	28.3	27.3	23.6	27.3
		Recycled Quantity	10,000t	8.9	12.3	27.5	21.2	22.9	28.67	33.2	34.8	30.6	18	27.2	26.2	23.3	27.0
Soil Generated from Civil Engineering Works	Recycle Rate	%	29	52	75	67	94	94	95	97.9	92.7	97	96	96	98.9	98.8	
	Quantity Generated	10,000t	0.48	0.05	0.28	0.1	0.06	6.53	0.03	0.007	0.29	0.3	0.13	0.024	0.00002	0.01	
	Recycled Quantity	10,000t	0.48	0.05	0.28	0.1	0.06	6.52	0.03	0.005	0.07	0.29	0.12	0.02	0	0.01	
	Recycle Rate	%	100	100	100	100	100	99.8	100	69.2	26	98.4	97	83.1	0	100	
Secondary Small Cells	Quantity Collected	10,000	15	13	10	9	6.8	75.6	63.5	4.75	4.79	5.53	2.22	2.8	2.8	3	
	Packing Material	Quantity of Polystyrene Foam Used for Products	t	12	8	6	5.2	4.9	4	3.1	2.0	1.4	1.5	0.9	1.5	2.4	1.9
Proper Disposal & Management of Wastes	Asbestos	Quantity of Remaining Construction Asbestos	10,000t	0	0	0	0	6.12	6.8	5.93	6.62	6.61	6.04	6.65	0.015	0.015	0.015
		Quantity of Remaining Bridge Asbestos	t	11	2	42	19	13.7	0	0	0	0	0	0	0	0	0
	CFC	No. of Remaining Air-cons Using Specified CFCs	Sets	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Water Resource Management	Water	Water Supply Used	m ³	-	-	-	-	-	-	-	-	-	156.3	168.2	178.5	167.5	160.4
		Sewerage Used	m ³	-	-	-	-	-	-	-	-	-	88.1	86.5	95.4	88.2	86.6
Implementation Status	Water	No. of ISO14001 Certified Organizations	Organizations	14	22	33	42	45	33Br.+2Org.	43Br.+2Org.	42Br.+2Org.	42Br.+2Org.	42Br.+2Org.	30Br.+2Org.	16Br.+2Org.	9	9
		Total No. of Participants in Clean Environment Campaign	Persons	13,200	14,800	21,536	16,900	17,628	14,948	32,178	41,500	64,003	64,000	53,000	61,741	50,136	54,161
No. of NTT West Employees		Persons	50,450	14,750	13,750	12,850	12,250	5,800	5,800	5,700	5,700	5,550	5,300	5,100	4,900	4,650	
Operating Revenue of NTT West		100milyen	24,067	22,150	21,669	20,980	20,296	19,515	19,012	18,243	17,808	17,508	16,763	16,279	15,896	15,742	

CO₂ Emission (Achieved)

FY2001	645,000 t-CO ₂
FY2002	693,000 t-CO ₂
FY2003	754,000 t-CO ₂
FY2004	733,000 t-CO ₂
FY2005	769,000 t-CO ₂
FY2006	875,000 t-CO ₂
FY2007	889,000 t-CO ₂
FY2008	910,000 t-CO ₂
FY2009	967,000 t-CO ₂
FY2010	933,000 t-CO ₂
FY2011	951,200 t-CO ₂
FY2012	1,109,000 t-CO ₂
FY2013	1,178,000 t-CO ₂
FY2014	1,173,000 t-CO ₂

* Up to FY 2003, the official coefficient of the Federation of Electric Power Companies of Japan had been used as the CO₂ emission coefficient for power consumption. From FY 2004 onward, coefficients based on the "Law Enforcement Ordinance on Promotion of Countermeasure against Global Warming" are used (0.378 kg-CO₂/kWh in FY 2004, 0.555 kg-CO₂/kWh in FY 2005). For FY 2014 and FY 2013, the following coefficients are used.

Electric power company	Actual emission coefficient (kg-CO ₂ /kWh)	
	2014 actual use value	2013 actual use value
Tokyo Electric Power Company	0.530	0.525
Chubu Electric Power Co., Inc.	0.513	0.516
Hokuriku Electric Power Company	0.630	0.663
Kansai Electric Power Co., Inc.	0.522	0.514
Chugoku Electric Power Co., Inc.	0.719	0.738
Shikoku Electric Power Co., Inc.	0.699	0.700
Kyushu Electric Power Co., Inc.	0.612	0.612
Okinawa Power Company, Incorporated	0.858	0.903
ENNET Corporation	0.423	0.429

Final Industrial Waste Disposal (Achieved)

FY2001	48,000 t
FY2002	29,000 t
FY2003	25,000 t
FY2004	18,000 t
FY2005	9,000 t
FY2006	7,000 t
FY2007	9,000 t
FY2008	6,000 t
FY2009	5,000 t
FY2010	6,000 t
FY2011	4,000 t
FY2012	3,000 t
FY2013	3,000 t
FY2014	1,000 t

Basic Unit of Total Water Use

FY2010	52m ³ /person
FY2011	57m ³ /person
FY2012	63m ³ /person
FY2013	37m ³ /person
FY2014	38m ³ /person

*1 Since data for the 2012 performance was written incorrectly, it is revised. *2 Since data for the 2001 to 2011 performances were written incorrectly, they were revised.

* Starting from FY 2002, the targets of control have been expanded to the performance of NTT Marketing Act and NTT NEOMEIT group companies.

* Target organizations: 29 NTT West Group companies

Environmental Accounting in FY 2014

With the aim to efficiently and effectively promote environmental conservation efforts, NTT West Group introduced an environmental accounting system in FY 2000. This system gathers and analyzes the costs for conserving the environment in business activities, as well as the economic effects obtained from these activities.

Data acquired from environmental accounting is utilized as the base data for promoting environmental management.

*Environmental conservation costs refer to the investments and expenses required for implementing corporate environmental protection measures.

Investments refer to investments in depreciable assets that are intended for environmental conservation. Expenses refer to costs incurred by environmental conservation activities.

Environmental conservation costs include items ranging from 1. Business Areas to 6. Environmental Damages.

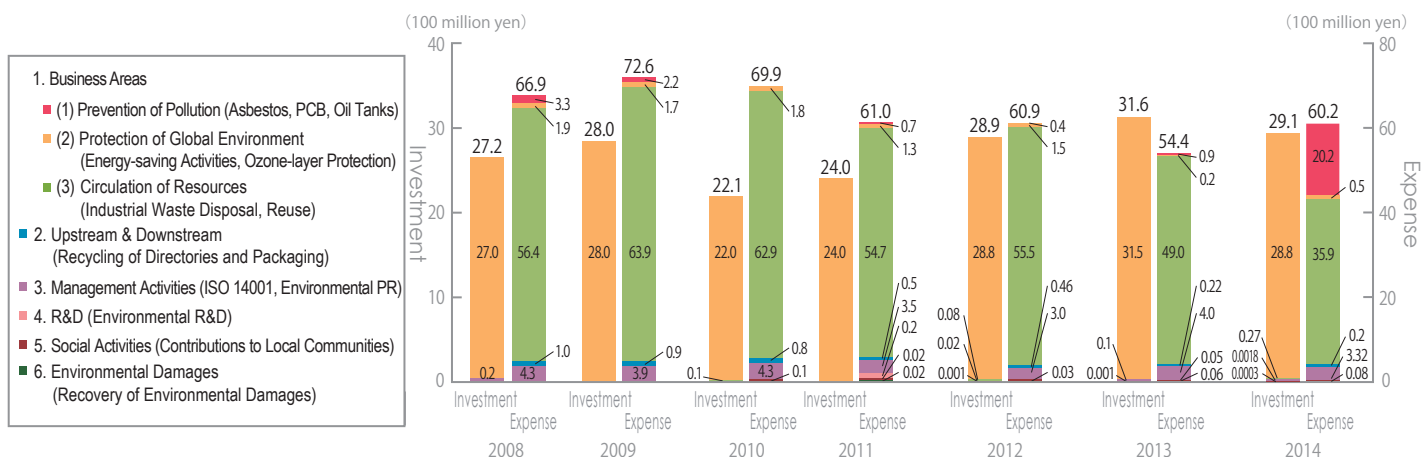
*Environmental conservation effects (economic) refer to the economic effects on corporate management, including reduction in cost of disposal and gains from the sale of valuable resources, as a result of promoting environmental conservation.

Environmental conservation effects (economic) include items ranging from 1. Cost Reduction by Energy Saving to 4. Postage Expense Reduction through Online Correspondence.

Environmental Conservation Costs

Investment for FY 2014 was 2.91 billion yen (3.16 billion yen in FY 2013), which were attributable to the introduction of energy-saving equipment for air conditioning and lighting and the replacement of the switching system.

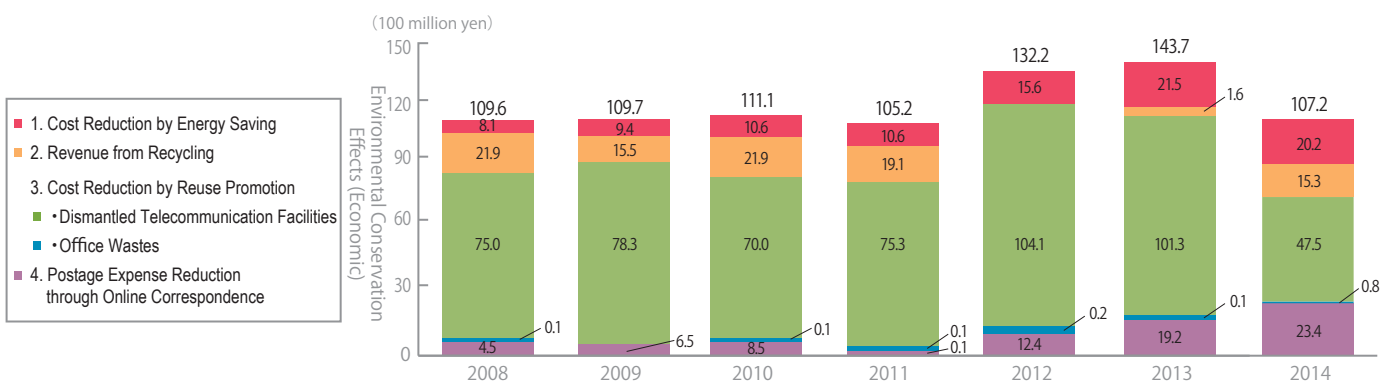
Although cost has been reduced in areas such as the recycling of telecommunication equipment and disposal of wastes generated from the offices, cost for FY 2014 grew to 6.02 billion yen (5.44 billion in FY 2013) due to a significant increase in the cost for disposing PCBs.



Environmental Conservation Effects (Economic)

Environmental conservation (economic) effects for FY 2014 reached 10.72 billion yen, which exceeded the result of FY 2013 (14.37 billion yen).

The increase is attributable mainly to a substantial decrease in the number of old models that were recycled as well as the reduction in gains generated from the sale of dismantled telecommunication equipment due to the introduction of new ONU models.



1. Target Companies

• 29 companies of NTT West Group

2. Applicable Period

• FY 2014 data: from 1 April 2014 to 31 March 2015, FY 2013 data: from 1 April 2013 to 31 March 2014
 FY 2012 data: from 1 April 2012 to 31 March 2013, FY 2011 data: from 1 April 2011 to 31 March 2012
 FY 2010 data: from 1 April 2010 to 31 March 2011, FY 2009 data: from 1 April 2009 to 31 March 2010
 FY 2008 data: from 1 April 2008 to 31 March 2009

3. Data Tabulation Method

• Based on the "NTT Group Guidelines for Environmental Accounting 2005," which is in compliance with the "Environmental Accounting Guidelines" issued by the Ministry of the Environment.

Professor
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Professor Kokubu completed his doctoral program at the Graduate School of Business, Osaka City University, where he was conferred the degree of Doctor in Business Administration. After working as an associate professor at Osaka City University and Kobe University, he became a professor at the Graduate School of Business Administration in Kobe University in 2001. In 2014, he was promoted to Dean of the Graduate School. Professor Kokubu also holds posts such as Chairman of ISO/TC207/WG8 and Chairman of MFCA Forum Japan. His major publications include “Low-carbon Supply Chain Operation” (Chuokeizai-sha, 2015), “Material Flow Cost Accounting” (Nikkei Publishing, 2008), and “Environment Management and Accounting” (Yuhikaku Publishing, 2012).

A Well-balanced Environmental Strategy

Environmental issue is not all about how it affects the physical existence of human beings in the form of threats to the global environment. It also concerns how we improve our quality of life. Both of them are important considerations, and as a player in the information and communications industry, NTT West needs to focus its efforts on these two aspects. Among the 3 pillars in NTT West’s environmental strategy, “achievement of the Environmental Grand Design” addresses the former consideration, while “reduction of environmental load through ICT” and “promotion of biodiversity conservation activities” address the latter. We can therefore say that the group’s environmental strategy is a well-balanced one.

Achievement of the Environmental Grand Design

As part of the effort to achieve the “Environmental Grand Design,” activities have been carried out toward the goal set for FY 2020 in the 3 areas of addressing global warming, reduction of paper resources and reduction of wastes. While I can see from the report that activities have been conducted at a steady pace, it remains unclear how the target set for addressing global warming can be achieved by 2020. The “Green NTT West Strategy” was established in 2012, and I think it is time to reassess the relevance of the goal according to changes in the circumstances, and present a concrete plan for achieving it. I also believe that it is important to translate the major environmental indicators into KPIs (Key Performance Indicators) and position them as indicators that are equally important to the company as the financial ones.

Reduction of Environmental Load through ICT

Reports were presented on cutting-edge efforts to reduce the load on the environment through the use of ICT, such as the “Ene-Farm app,” “acquisition of SMA certification with Hikari Box” and the “comprehensive next-generation agricultural project.” This, I believe, is the area where NTT West, a player in the information and communications industry, should focus its attention on. This is a domain that is also closely tied to the Group’s business strategy, so it is possible for NTT West to enjoy a higher level of acclaim from the aspect of ESG (Environment, Society and Governance) investment if it can offer a more adequate explanation from the viewpoint of its corporate strategy and business plans, such as how such activities are related to the medium-to-long-term corporate strategy, and how management decisions are made with these efforts regarded as future investments.

Promotion of Biodiversity Conservation Activities

The “NTT West Midori Ippai Project” is implemented as part of the activities for biodiversity conservation. This project, including the “Environment CSR Business Training Session,” is a very meaningful activity that helps NTT employees to deepen their relationship with nature as well as the society. We are not just a part of our company, but also a part of nature and the society. In this sense, I feel that such activities bear great significance for improving our quality of life. For companies like NTT West with operations limited to a specific region, relationship with the local communities plays a vital role, and I hope NTT West can continue to further its efforts in this area.

Response to Third Party Opinions

This report records the actual data on NTT West’s environmental conservation endeavors as well as details of the main activities. By doing so, we hope to convey our Group’s efforts toward protecting the global environment to as many people as possible.

We will also take the third party opinions into serious consideration, and will put in more effort than before to gain your understanding and support.

We recognize that our day-to-day business activities impose a heavy load on the global environment. In addition to reducing our burden on the environment as a company, we will also continue to improve the quality of life using ICT and contribute to building a sustainable society.

**Environment Management Promotion Office
Technology Innovation Department
Nippon Telegraph and Telephone West Corporation**