

Environment

Information about environmental education, business activities and the life cycle flow, support of the ISO 14001, environmental accounting as well as management and reduction of substances concern are published on our homepage as environmental data as of this fiscal year. <https://www.nhkspg.co.jp/eng/csr/env/index.html>

Environmental Voluntary Action Plan

We have established the Global Environmental Activities Plan and Global Environmental Activities Guidelines for involvement in a broad range of global environmental issues. We published them in May 1993 as our Environmental Voluntary Action Plan. The NHK Spring Group draws up Environmental Activity Policies each year on that basis.

Global Environmental Activities Guidelines

Our Group's Corporate Philosophy is to declare that our business activities will strive for harmonious coexistence with the global environment.

Global Environmental Activities Guidelines
<ol style="list-style-type: none"> 1. Actively involve environmental conservation at all stages of the life of products, from design through production to disposal. <ol style="list-style-type: none"> 1) Look for ways to use resources efficiently, and make every effort to save resources and recycle. 2) Set our energy saving target at over 1% improvement in unit energy consumption to sales per year to promote energy saving. 3) Aim for zero emissions in production activities to encourage cutting waste and saving resources. 2. Encourage the development of technology to solve global environmental problems and contribute to saving the environment. 3. As NHK Spring, be involved in the environment and take an active part in saving the social and local environment.

Global Environmental Activities Plan

We identify important areas we should be involved in on the basis of our Global Environmental Activities Guidelines. We then set specific objectives and targets and plan what we must do to achieve them.

Main concerns

- Reducing CO₂
- Reducing waste
- Lifting recycling
- Compliance with various environmental laws and regulations
- Reducing and managing pollutants
- Contributing to local communities & environmental protection
- Promoting use and development of energy-saving products
- Alliance between the government, customers, and partners

Global Environmental Activities Plan
<ol style="list-style-type: none"> 1. Framework to encourage activities <ol style="list-style-type: none"> 1) Operating the Global Environmental Measures Committee and encouraging protection of the environment across the entire Group 2) Set up CO₂ Reduction and Waste Reduction Committees to respond to social needs 2. Involvement in specific issues <ol style="list-style-type: none"> 1) Saving energy and reducing CO₂ 2) Contribution to the recycling-oriented society 3) Encouraging green procurement at a global level 4) Product design and technical development taking account of impact on the environment 5) Reducing toxic chemicals 6) Preventing environmental accidents 7) Streamlining logistics 8) Reliably running and upgrading Environmental Management Systems (EMS) 9) Review water usage management 3. Publicity and social activities <p>We recognize our corporate social responsibilities (CSR), and develop environmental conservation activities throughout the company, which will widely gain the empathy of local communities and the general public.</p> 4. Activities overseas <p>We are actively involved in the actual preservation of the environment and observe local environmental rules. We also protect the environment through technology transfer, etc. having regard to local social and economic conditions.</p>

Environmental Activity Policies

NHK Spring strives to address global environmental issues from a global Group perspective based on the Environmental Activities Policies drafted each year. We researched new measures toward energy savings as we have in the past while implementing and expanding measures horizontally throughout the Group in order to continue to achieve our voluntary targets to reduce unit consumption of CO₂ emissions by 1% or more in fiscal 2019. In waste management, we promote restrictions in emissions while continuing zero emissions activities by reclaiming useful resources in Japan. We also will continue to improve the recycling rate at our overseas bases.

We will systematically conduct management of environmental load substances, support customers, maintain and update environmental equipment, and respond to facilities subject to environmental laws and regulations.

Environmental Activity Policies 2019
<ol style="list-style-type: none"> 1. Encourage global environmental management <ol style="list-style-type: none"> 1) Continuing CO₂ reduction activities and investigation and implementation of new measures 2) Maintaining zero emissions* and continuing to reduce waste 3) Promoting control of substances of concern (SOC) 2. Maintain 'zero' global environmental incidents <ol style="list-style-type: none"> 1) Maintaining and stepping up environmental management and thorough risk management 2) Maintaining environmental legal compliance and responding to revisions to ISO standards 3) Maintaining environmental facilities in operation and protecting them

*Group-wide definition for "zero emissions": Recycling rate of 99.0% or better, also regards thermal recycling as recycling

Systems to encourage environmental conservation

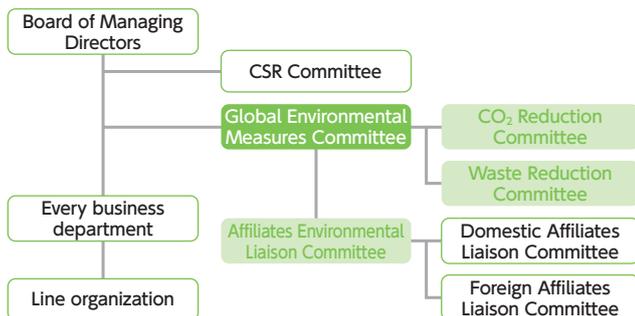
Our Global Environmental Measures Committee is at the center of our efforts to promote and implement our Environmental Voluntary Action Plan. Our continuous environmental activities follow the PDCA cycle.

Organization

The Global Environmental Measures Committee unilaterally debates environmental activities overall throughout the NHK Spring Group and formulates and executes global environmental action plans. The CO₂ Reduction and Waste Reduction Committees have been set up as two subcommittees under the Global Environmental Measures Committee.

NHK Spring Group has also set up the Affiliates Environmental Liaison Committee to establish a system to actively promote global environmental conservation activities.

System for encouraging environmental protection



Zero emission activities

This project achieved zero emissions at the Yokohama Office in 2003 before the activity spread to reach zero emissions at all of our plants in 2004. We are also stepping up these activities to include a 100% recycling rate at NHK Spring in 2010.

We have also achieved zero emissions at all Group companies in Japan and have been conducting efforts to improve our recycling

rate since 2009 and are continuing to at overseas Group companies.



2010 recycling rate Achieved **100%**

VOICE



Takashi Yonezawa

Manager, Safety & Environmental Activities
Department, Engineering Division

Various environmental risk reductions and promotion of proactive energy savings

NHK Spring has acquired the ISO 14001 at all of its business sites and has implemented large-scale reforms to update to the 2015 version. Operation of the revised ISO heightens environmental performance and provides broad risk management. In 2009 before the revision, we had introduced our on voluntary environmental auditing to ensure thorough compliance throughout the entire Group and independently manage risks to environmental equipment in an effort to ensure no environmental accidents or violations to laws or regulations.

We have been conducting energy saving diagnostics together with Ministry of the Environment CO₂ reduction potential diagnostic service providers since 2017 to encourage subsequent energy-saving in the Group. The diagnostic results play a role in investigating and implementing new energy saving measures as we strive to share various information and expand efforts horizontally throughout the Group.

The social requirement for environmental management is a growing trend. In the future, we will fully respond to these various environmental issues.

Environmental audits and energy conservation diagnostics

We are conducting environmental audits and energy conservation diagnostics to improve environmental performance while ensuring clear management in accordance with the environmental manual.

ISO 14001 and environmental auditing

The NHK Spring Group conducts environmental audits to verify the environmental management system at each Group company is run properly in accordance with the ISO 14001 while ensuring compliance with environmental laws and regulations, improving environmental performance, extracting points for improvement, and heightening the level of management capabilities.

Environmental audits

Members in charge of executing the environmental audits are persons who have completed specialized training. In fiscal 2018, we conducted internal ISO 14001 (2015) environmental audits at each Group plant. Moreover, we held training courses at the head office to cultivate internal environmental auditors. This program has educated 30 ISO 14001 (2015) auditors in the Group to adequately improve performance through the proper implementation of the system.

The results of these audits were reported to the plant chiefs and presidents of Group companies and measures were taken to

quickly improve and rectify any issues. These auditing results are also reported to the Global Environmental Measures Committee and reflected in the Environmental Activity Policies and Environmental Voluntary Action Plan.

Environmental management and environmental auditing



External audits

External audits are conducted by an external registered auditing authority to verify whether the environmental management system complies with and operates in accordance to the requirements of the ISO 14001. A surveillance audit is generally done every year and a renewal audit once every three years.

All 11 plants received external audits in fiscal 2018; six plants had surveillance audits, and five plants had a renewal audit to update to the ISO 14001 (2015). The results of these audits found that the each of the plants and the environmental management systems were being run correctly, that pollution was being prevented, and that we were making continuing efforts to improve.

Fiscal 2018 external audits
 **5** plants (surveillance audits), **6** plants (renewal audits)

Energy saving diagnostics

Our Group has begun energy saving diagnostics as of fiscal 2017. Consultants certified as Ministry of the Environment CO₂ reduction potential diagnostic service providers listen to representative and check sites at the plants they visit to flush out new energy saving measures with the hope of effectively using resources and continually reducing CO₂ emissions. In fiscal 2019, we carried out energy saving diagnostics at a total of five plants—four NHK Spring plants and one Group company—to propose and horizontally expand energy-saving measures. We will systematically further plant diagnostics in the future.



Energy Saving Diagnostics

VOICE



Hisao Adachi
 Tokuhatsu Co., Ltd.
 Manager, Safety and Environment Office

Ongoing implementation to make considerations about the environment

Tokuhatsu celebrated its 81st anniversary in June 2019. Since our work using spring washers, we have been manufacturing and selling various retaining rings and leaf springs for washer bases of various fasteners. In recent years, we have been developing and selling products tailored to the needs of customers as secondary core products, such as parts related to automotive clutches.

I think items to promote measures related to the environment fall into the three categories below based on the ISO 14001.

1. Prevent contamination
 - Reduce waste through primarily reduction (do not buy or take anything unnecessary) and other 3R efforts.
 - Renew aged equipment, fully extinguish lighting to not waste electricity, and reduce CO₂ emissions through solar power generation (unit consumption).
 2. Adhere to statutory requirements
 - Clearly submit all necessary notifications in accordance with the addition of the Mita Plant this fiscal year.
 3. Adhere to all other requirements
 - Handle and provide education about broadening requirements for chemical management.
- By continually implementing these various measures, I hope we can make considerations about the environment.

Initiatives on Production Sites

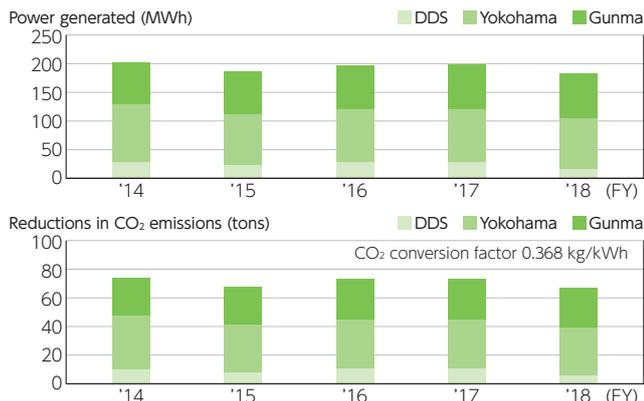
We encourage reducing electricity use and saving energy, and encourage making energy use more visible (transparent); we also practice energy management through electricity monitoring and other initiatives. We continue our zero emissions work through recycling.

Energy-saving equipment

Use of solar energy

We installed solar power generators at our DDS Komagane Plant in 2008, our Yokohama Office in 2009, and our Gunma Plant in 2012. We are currently advancing installations in the Ina district. In the future, we will actively use solar power as a renewable energy source to generate energy savings and reduce CO₂ emissions.

NHK Spring solar generation performance



Zero emissions

To realize an environmentally-friendly society, we promote recycling of waste and continually strive to reduce emissions by establishing a recycling center and an Environmental Dojo at each of our business establishments.

Recovering resources as valuables from waste plastics and food waste

Soft types of plastics are stored and transported as compact as possible by using compression packing machines. We recycle with the appropriate waste processors. We will also process and recycle high quality waste into raw plastic materials and high-calorie fuel as useful resources. Food waste is being reused as feed for livestock or recycled as compost through a fermentation and decomposition process.

On-site checks of waste processors and waste recovery processors

We confirm whether operators take high quality waste according to contracts before outsourcing while conducting regular checks of waste processors at each plant to confirm that they are treating waste in accordance with the contract, in order to ensure that our zero emissions policies are being implemented.

FY 2018 Targets and Performance

We approach energy saving, reducing CO₂ emissions, recycling wastes and reducing pollutants in production in a planned way, setting specific targets to be achieved.

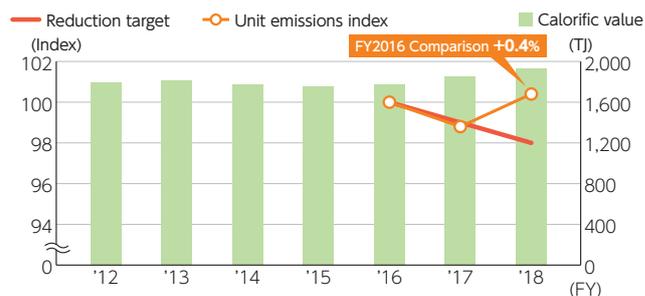
Energy saving

NHK Spring has recognized the necessity of global environmental conservation since long ago and has been working in energy-saving activities. Since the 1990s, we have engaged in continuous debate at the Energy Saving Subcommittee under the Global Environmental Measures Committee. Presently, we also have a lively exchange of ideas at the CO₂ Reduction Promotion Committee while always encouraging energy-saving activities. The unit energy consumption in fiscal 2018 increased 0.4% compared to the base year, but NHK Spring will strive to reduce energy consumption through new measures in the future.

Targets		
Unit energy consumption to sales: Annual reduction of 1% (based on fiscal 2016)		
(Under the Law Concerning the Rational Use of Energy, evaluation criteria of factories for rationalization of energy use)		
FY2018 target	FY2018 actual	Assessment
Target unit consumption*	Unit consumption	
98.0	100.4	✗

*Target unit consumption: Targeted reduction with fiscal 2016 unit consumption as 100

Movements in target and actual energy consumption to sales



*Unit consumption in fiscal 2016 is set as 100

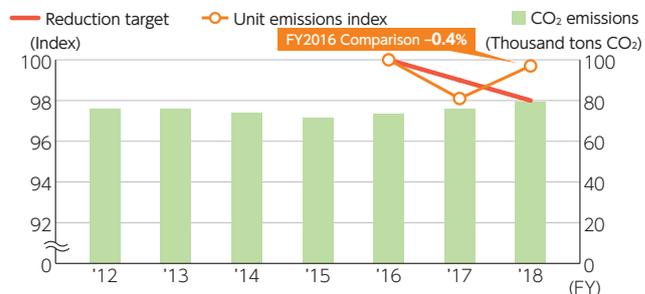
Reduction in CO₂ emissions

NHK Spring set up the CO₂ Reduction Promotion Committee in 2008 and works to reduce CO₂ with the cooperation of Group companies in Japan. We have designated specific reduction targets for CO₂ emissions throughout the entire Group and work to prevent global warming. We reduced the unit amount of CO₂ emissions 0.4% in fiscal 2018 compared to the base year. NHK Spring will aim for a 1% annual reduction rate by fiscal 2019.

Targets		
Per unit CO ₂ to sales: Annual reduction of 1% (based on fiscal 2016)		
(According to independent targets)		
(According to Japan Auto Parts Industries Association Eighth Environmental Voluntary Action Plan)		
FY2018 target	FY2018 actual	Assessment
Target unit consumption*	Unit consumption	
98.0	99.7	△

*Target unit consumption: Targeted reduction with fiscal 2016 unit consumption as 100

Movements in target and actual CO₂ emissions



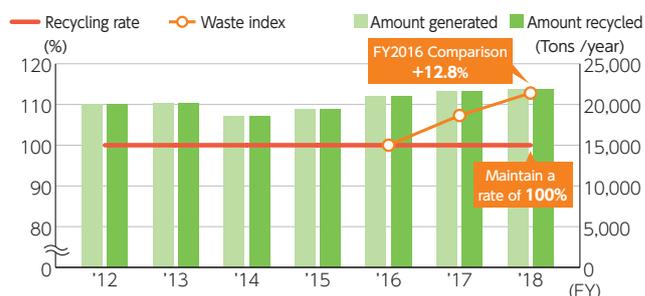
*Unit consumption in fiscal 2016 is set as 100

Recycling of waste

NHK Spring also worked to reduce the amount of landfilling disposal of waste with the goal of achieving zero emissions and successfully reached this target at the Yokohama Office at the end of fiscal 2002. This became a company-side initiative in fiscal 2003 and was expanded and furthered by Group companies in Japan in fiscal 2005. Since fiscal 2010, we have maintained a 100% recycling rate. Furthermore, the amount of waste increased consecutively over two years due to an increase in production volume and waste generated from some valuables. However, we will spearhead improvements by improving production efficiency and revising waste processing in the future.

Targets			
Maintain zero emissions across the entire company			
(Recycling rate of at least 99% achieved since fiscal 2004)			
FY2018 target	FY2018 actual	Assessment	FY2019 target
Continue recycling rate of	Recycling rate of		Continue recycling rate of
99% or higher	100% (at least 99.95%)	⊙	99% or higher

Shift in performance in recovering resources from waste and the waste index



*Waste index in fiscal 2016 is set as 100

Group company involvement

We involve the entire Group in our environmental conservation activities. They are all engaged in reducing environmental pollution.

Domestic Group companies

Energy saving

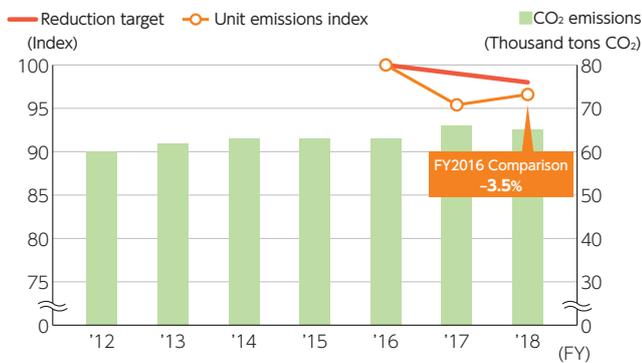
We have set a target of a 1% annual reduction rate in net sales unit energy consumption for Group companies from a base year of fiscal 2009, and NHK Spring is working together with these Group companies in energy saving efforts. The Group is working to reduce CO₂ emissions, such as through furnace insulation, while driving forward energy savings, such as rationalization of production. As a result, we reduced the unit amount of CO₂ emissions 3.5% in fiscal 2018 compared to fiscal 2016 and achieved our target. In addition, the basic unit of heating decreased 1.2% year-on-year.

Movements in target and actual energy consumption to sales



*Unit consumption in fiscal 2009 as 100
*Electric heat value coefficient = 9.97 GJ/1,000 kWh

Movements in target and actual CO₂ emissions



*Unit consumption in fiscal 2009 as 100
*Electric CO₂ coefficient = 0.368 tons/1,000 kWh

Towards an environment-friendly society

The amount of waste generated by Group companies in Japan in fiscal 2018 was 23,166 tons for the year. The amount recovered as resources was 23,129 tons to sustain the high standard of a 99.8% recycling rate at Group companies in Japan in fiscal 2018. In addition, NHK Spring is also engaging in the same initiatives to reduce the amount of waste, but the unit production compared to fiscal 2016 increased 11% due to an increase in the amount of waste oil and waste plastics in fiscal 2018. In the future, we will strive to reduce waste oil and waste plastics as well as reclaim valuable resources to reduce waste.

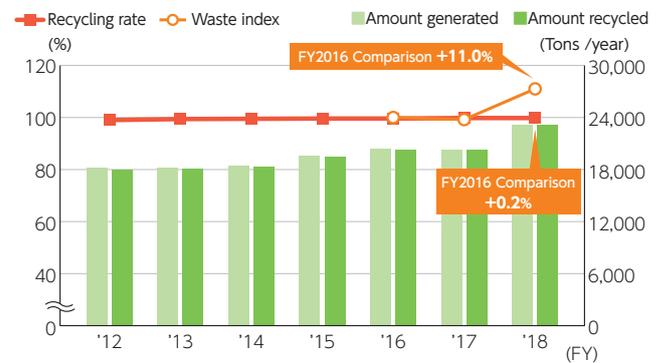
Our aim was to achieve a recycling rate of over 99% between fiscal 2007 and fiscal 2009 at Group companies in Japan and succeeded in reaching this target by furthering zero emission activities.

As an example of recycling activities, Nippatsu Service at Group companies in Japan and Nippatsu Harmony separate and collect various waste at the Yokohama Office to encourage recycling and waste reduction.



Weighing separate waste via the Nippatsu Service

Shift in performance in recovering resources from waste and the waste index



*Unit consumption in fiscal 2016 as 100

VOICE

Shinichi Ishii
NHK Spring (Thailand) Co., Ltd.
Director
Production and
Quality Efficiency Division COO



Endeavoring in business activities friendly to the global and local environment

NHK Spring Thailand started production in Thailand upon its founding in 1963. Today, we manufacture and sell a wide range of products, such as automotive suspension springs, seats, interior parts, various precision springs, and HDD suspensions.

In terms of the environment, we acquired the third-party ISO 14001 (2004) certification in 2000. We further the environmental management of plants and products and are careful to make environmental considerations about the surrounding region. Last year, Toyota Cooperation Club (Kyohokai of Thailand) added environmental activities as a new effort and nominated NHK Spring as a leading company. As a model plant, our spring plant adjusts compressor air pressure and fully conducts ON-OFF measures in various equipment on the production line as energy-saving efforts. The ABC activities that actively make efforts in Energy Reduction Innovation (ER-I) in particular largely contribute to the energy savings and CO₂ emission reductions by clarifying A (equipment that can be set to ON-OFF according to operation), B (equipment the power can be turned OFF for prolonged stoppages) and C (equipment that cannot be turned OFF), considering how to operating a cycle from C to B to A, and then expand activities to ensure A equipment is turned off during stoppages.

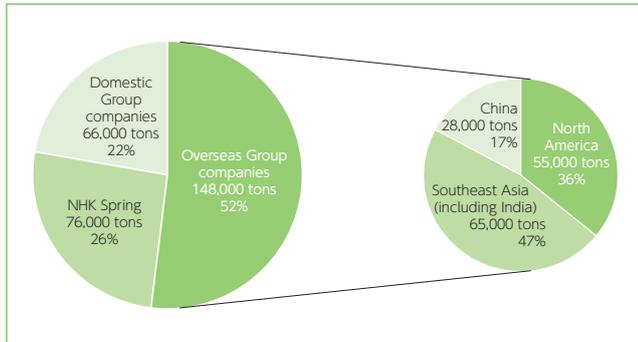
In the future, we will endeavor in business activities friendly to the global and local environment in an effort to engage in sustainable corporate activities.

Overseas Group companies

CO₂ emissions

The volume of CO₂ emissions for overseas affiliate companies in fiscal 2018 accounted for 52% of the whole Group, and an increase of 1% compared to the previous year. This breakdown shows an increase of 13,000 tons in North America, 98,000 tons in Southeast Asia as well as 9,000 tons in China. In the future, we will expand energy-saving examples to plants in the future to reduce CO₂ emissions.

Fiscal 2018 CO₂ emissions by Group segment

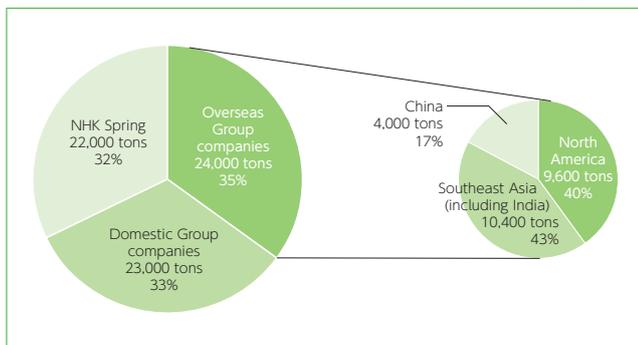


Waste emissions

The basic unit for the amount of waste in Japan has a tendency to increase, and our overseas Group companies are showing a tendency for an increase in the amount of waste.

The amount of waste generated overseas in fiscal 2018 accounted for 35% of the whole Group, and an increase of 1% from the previous year. In particular, waste showed a tendency to increase in Southeast Asia and North America. We will continue recycling activities as well as efforts to improve productivity in each region to promote waste recycling and reduction.

Fiscal 2018 volumes of waste generated by Group segment

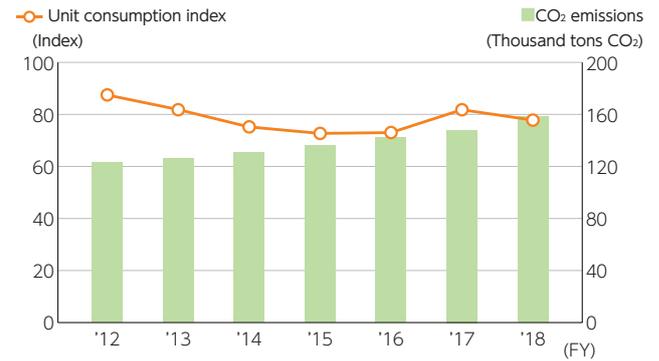


Energy saving

NHK Spring has introduced energy saving activities at each company to mitigate energy consumption during production. We are systematically engaging in improvement activities based on energy-saving examples of NHK Spring at each company in North America and Southeast Asia.

We are also expanding similar improvement activities as carried out in Japan in China to promote further energy saving and CO₂ reductions throughout the entire Group overseas.

Movements in CO₂ emissions in overseas Group companies (10 manufacturing companies)



*Unit consumption in fiscal 2009 as 100

Movements in waste generated in overseas Group companies (10 manufacturing companies)



*Unit consumption in fiscal 2009 as 100