

NHK Spring Group's Global Environmental Conservation Activities

The expansion of economic activity has been accompanied by ever-growing apprehension about global environmental problems such as climate change due to global warming, pollution of natural resources with chemical substances, and the loss of biodiversity. In efforts to tackle these global environmental problems, NHK Spring Group has published our Environmental Voluntary Action Plan.

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. Each year, we draft

a set of Environmental Activities Policies for our overall Group activities, reflecting our track record of day-to-day global environmental conservation activities under the Environmental Voluntary Action Plan.

● Global Environmental Activities Guidelines ●

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.

1. **Actively involve environmental conservation at all stages of the life of products, from design through production to disposal.**
 - 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 ●

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

1. Framework to encourage activities

- 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

- 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

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.

4. Activities overseas

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.

● Environmental Activity Policies 2020 ●

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 have been deliberating new measures, their implementation and expansion horizontally throughout the Group in order to achieve our voluntary targets to reduce unit consumption of CO₂ emissions by 1% or more in fiscal 2020. In waste management, we continue with domestic zero-emissions activities as we promote restrictions on waste emissions volume. 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.

1. Encourage global environmental management

- 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

- 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

NHK Spring Group's CO₂ Reduction Activities

We uphold reduction targets for energy use and CO₂ emissions as we engage in global environmental conservation activities. As a member of the Japan Auto Parts Industries Association (JAPIA), we have largely achieved JAPIA unit CO₂ emissions index to sales*1 targets as a result of the CO₂ reduction activities implemented in association with our overall Group.

NHK Spring Initiatives

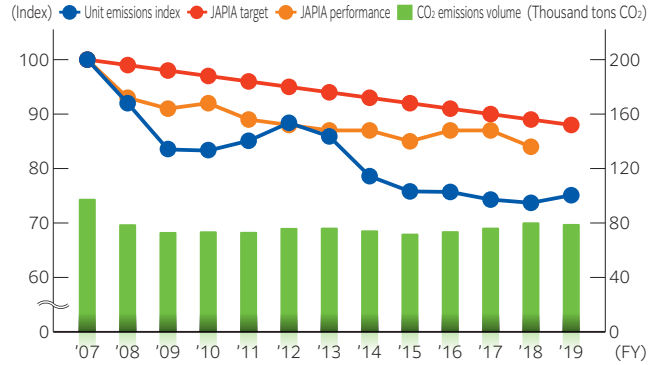
During fiscal 2019, NHK Spring's CO₂ reduction efforts outperformed the JAPIA fiscal 2019 target of a 12% reduction from fiscal 2007 levels, achieving a relative reduction of 24.9%. We achieved twice the targeted reduction. We also achieved major CO₂ reductions in comparison to JAPIA performance of 16% reduction (fiscal 2018).

FY2019 unit emissions index performance (NHK Spring)

Compared to JAPIA	Results	Assessment
FY2019 JAPIA target 88.0	75.1	◎◎
FY2018 JAPIA performance 84.0		

*1. Unit emissions index: Figures relative to those for JAPIA base year fiscal 2007, with index reference value set to 100.

Transition in unit CO₂ emissions index (NHK Spring)



*Electric CO₂ emissions coefficient = 0.368 tons/1,000 kWh

Domestic Group company initiatives

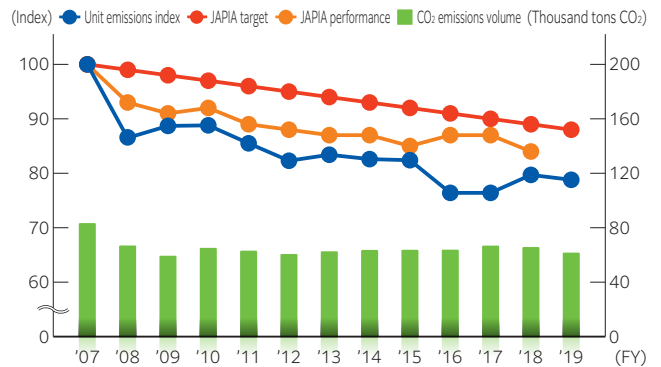
During fiscal 2019, the CO₂ reduction efforts of our domestic Group companies outperformed the JAPIA fiscal 2019 target of a 12% reduction from fiscal 2007 levels, achieving a relative reduction of 21.2%. We thus greatly outperformed both the JAPIA reduction target, as well as actual JAPIA performance of a 16% relative reduction (in fiscal 2018).

FY2019 unit emissions index of performance (domestic Group companies)

Compared to JAPIA	Results	Assessment
FY2019 JAPIA target 88.0	78.8	◎◎
FY2018 JAPIA performance 84.0		

*1. Unit emissions index: Figures relative to those for JAPIA base year fiscal 2007, with index reference value set to 100.

Transition in unit CO₂ emissions index (domestic Group companies)



*Electric CO₂ emissions coefficient = 0.368 tons/1,000 kWh

Overseas Group company initiatives

CO₂ emission volumes at overseas Group companies trended upward in line with increases in production volumes. Unit emissions index performance during fiscal 2019 was down 25.9% compared to fiscal 2009, when statistical aggregation began.

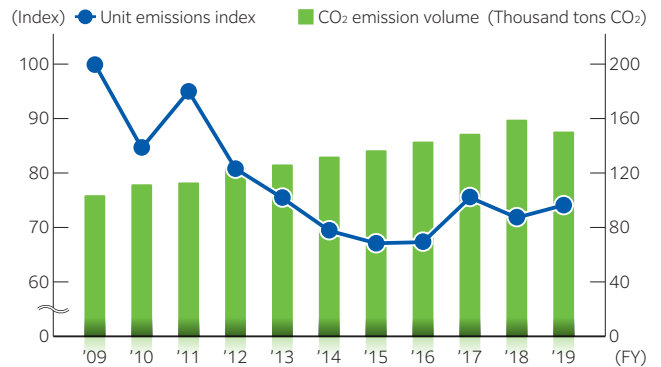
While considering the circumstances present in each country, we are actively pursuing action to deploy management and technologies that have produced results in Japan.

FY2019 unit emissions index performance (overseas Group companies)

Results	Assessment
based on FY2009 74.1	◎

*1. Unit emissions index: Fiscal 2009 index reference value set to 100.

Transition in unit CO₂ emissions index (overseas Group companies)



*Electric CO₂ emissions coefficient = 0.368 tons/1,000 kWh

Sharing of existing countermeasures technology and new technology development (CO₂ Reduction Activity Awards)

Our work to further CO₂ reductions includes not only existing countermeasures technology, but also development of new countermeasures technology. In order to share these technologies Groupwide, we hold annual CO₂ Reduction Activity Awards. Business sites compete with each other on countermeasures technology, and effective countermeasures technologies are shared throughout the Group. To work for global environmental conservation moving forward, we will engage in vigorous exchanges of views throughout the entire Group as we do our utmost to take CO₂ reduction action on a continuous basis.

Suspension Spring Division

—CO₂ Reduction Through Adoption of Electric Servomechanisms in Hydraulic Fatigue Testing Machines—

Joint development of a fatigue tester with test equipment manufacturer (KOKUSAI CO., LTD.). Major CO₂ consumption reductions (270 tons/year) were achieved by replacing the hydraulic unit to a low-power-consumption electric servomechanism design (received the President's Award for 2017).



Electric servomechanism fatigue testing machine

DDS Komagane Plant

—Air Consumption Volume Reduction Through Production Facilities Improvement—

Large volumes of air are used when products are held in place by vacuum chuck. By making precision improvements in facilities operations, vacuum clutching times were shortened, thereby reducing air consumption volumes. Reducing air volume consumption eased the air compressor load, leading to reduced CO₂ emission (received the President's Award for 2018).

● Award-winning actions, technologies of the past five years

FY	Award	Business site	Description
2015	Chairperson's Award	Atsugi Plant	Automated air conditioning challenge using external air induction system
	Chairperson's Award	DDS Komagane Plant	CO ₂ reduction through compressor improvement
2016	Chairperson's Award	Yokohama Plant (Seating)	CO ₂ reduction through steam supply boiler optimization
	Chairperson's Award	DDS Komagane Plant	CO ₂ reduction through adoption of LED clean room lighting
2017	President's Award	Suspension Spring Division	CO ₂ reduction through adoption of electric servomechanisms in hydraulic fatigue testing machines
	Chairperson's Award	NHK Spring Production Company	Manufacturing technology development and application
	Chairperson's Award	Yokohama Plant (Seating)	CO ₂ reduction through cut-off of pipes supplying unneeded steam
	Chairperson's Award	Tokuhatsu	Adoption of solar electric generation system and electric power volume visibility
2018	President's Award	DDS Komagane Plant	Air consumption volume reduction through production facilities improvement
	Chairperson's Award	Komagane Plant (Industrial Machinery and Equipment)	CO ₂ reduction through revision of clean room operational procedures
2019	Chairperson's Award	Yokohama Plant (Seating)	CO ₂ reduction through adoption of package air conditioning
	Chairperson's Award	Isehara Plant No. 1	CO ₂ reduction through revision of cooling methods at facilities
	Chairperson's Award	DDS Komagane Plant	Reduction of energy consumption during long offline periods

Use of Renewable Energy

NHK Spring Group is moving forward with adoption of solar power generating equipment as part of our renewable energy facilities.

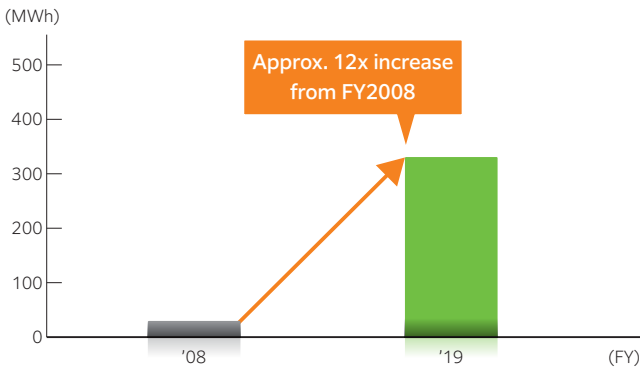
Adoption of solar power generating equipment

We installed solar power generators at our DDS Komagane Plant in fiscal 2008, our Yokohama Office in fiscal 2009, our Gunma Plant in fiscal 2011, and our Miyada Plant in fiscal 2018. In fiscal 2019, electric power generation had increased to about 12 times that of fiscal 2008, when the system was adopted. At the Yokohama Office, the system supplied an amount of electric power sufficient to run the OA equipment at company headquarters.

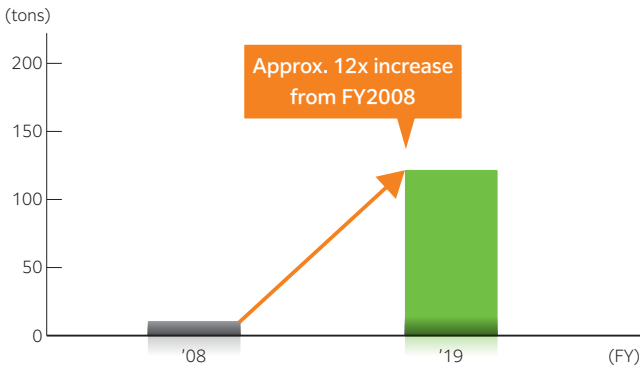
Domestic Group companies with solar power generating equipment installed also include NHK Sales, NHK Flex, Tokuhatsu Kogyo and Topura.

In the future, we will systematically utilize solar power generation as we move forward with reductions in energy consumption and CO₂ emissions volumes.

Solar power generation volume



CO₂ emissions reduction due to solar power generation



*Electric CO₂ emissions coefficient = 0.368 tons/1,000 kWh



DDS Komagane Plant (20kW, FY2008 operation start)



Yokohama Office (100kW, FY2009 operation start)



Gunma Plant (56kW, FY2011 operation start)



Miyada Plant (144kW, FY2018 operation start)

Zero Emission Activities

We proactively engage in zero-emission activities in efforts to use precious resources effectively and achieve a recycling-oriented society.

Zero emission activities

We set our resource recycling rate goal at 99% or more, exceeding the JAPIA target rate of 85%, and we have achieved a resource recycling rate of 100% in actual practice.

In order to achieve a resource recycling rate of 100%, it is crucial to perform thoroughgoing separation, and to outsource recycling processing work to the appropriate service providers.

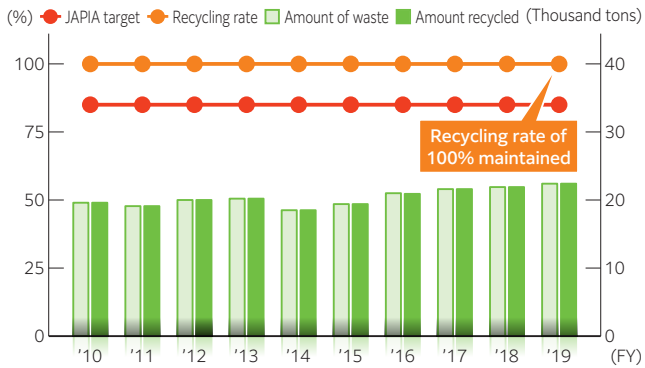
We set detailed rules at each of our business sites, create Environmental Dojos where we provide employees with repeated training, and establish Recycling Centers for thoroughgoing waste

separation. In addition, we perform site visits to check on the state of operations performed by waste processing contractors, and we confirm that appropriate processing is being carried out.

The result is that we have been able to achieve a recycling rate of 100% at our company and our domestic group companies, and to maintain it to the present.

While maintaining our 100% recycling rate, we will also undertake activities to reduce waste volume.

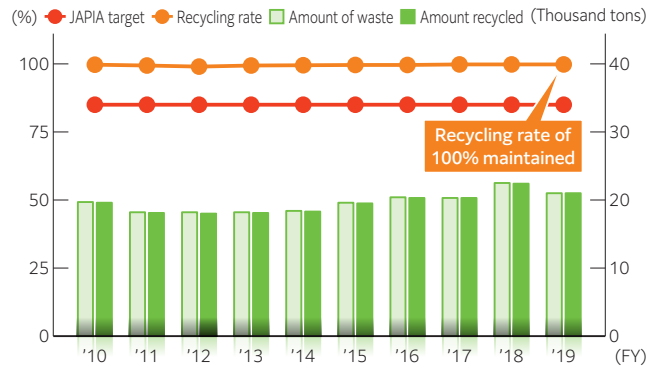
● Transition in waste recycling rate (NHK Spring)



FY2019 recycling rate performance (NHK Spring)

FY2019 target	Results	Assessment
JAPIA 85% or more	100%	◎
Voluntary target 99% or more		

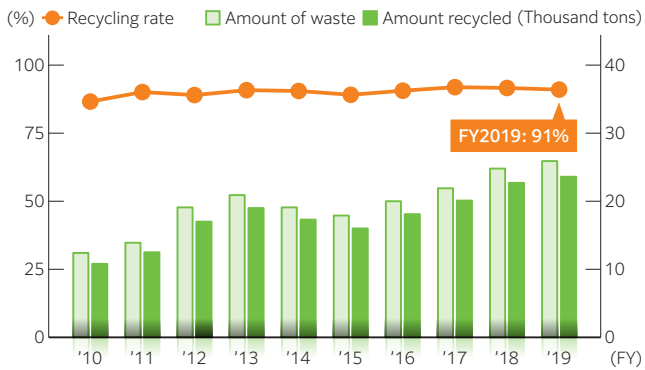
● Transition in waste recycling rate (domestic Group companies)



FY2019 recycling rate performance (domestic Group companies)

FY2019 target	Results	Assessment
JAPIA 85% or more	100%	◎
Voluntary target 99% or more		

● Transition in waste recycling rate (overseas Group companies)



FY2019 recycling rate performance (overseas Group companies)

FY2019 target	Results	Assessment
Voluntary target 95% or more	91%	△

Initiatives at each business site

Recycling of waste plastic and food waste

We store and transport soft plastics in compact form using compression packing machines, and recycle using the appropriate waste processing service providers. High-quality materials are recycled into plastic raw materials and high-calorie fuels.

Food waste is reused as feed for livestock or recycled as compost through a fermentation and decomposition process.



Soft plastic compression packing machine



Soft plastic after compression

Thorough separation

In order to maintain our 100% recycling rate, we also thoroughly separate ordinary daily waste at our business sites.



Yokohama Office separation station

On-site checks of waste processors

To ensure proper implementation of our zero-emissions policies, each business site conducts regular on-site checks of waste processing service providers to confirm that waste is being processed according to contract.



On-site checks of waste processors

Yokohama Office recognized as excelling in "3R" practices

NHK Spring receives high marks for our social contribution activities such as waste recycling, proper management of waste processing contractors, and local clean-up activities around business sites. In keeping with this reputation, the Yokohama Office has been recognized by the city of Yokohama for eight consecutive years since fiscal 2012 as a "Company That Excels in Implementing 3R Practices."

We will strive to receive continued recognition in the future.



Certificate of the Yokohama Office's excellence in "3R" practices

Environmental Audit and Energy Conservation Diagnosis for CO₂ Reduction

In order to appropriately implement environmental conservation activities such as CO₂ reduction and zero-emissions efforts, we base our management of each business site on an environmental management system (EMS).

We perform environmental audits and energy conservation diagnoses to gain an understanding of the situation on the ground, so that we can work to improve environmental performance and reduce CO₂ emissions.

ISO 14001 and environmental auditing

The NHK Spring Group conducts environmental audits to verify that the EMS at each Group company is run properly in accordance with the ISO 14001 standard. We also work to ensure compliance with environmental laws and regulations, improve environmental performance, seek out points for improvement, and otherwise improve management capabilities.

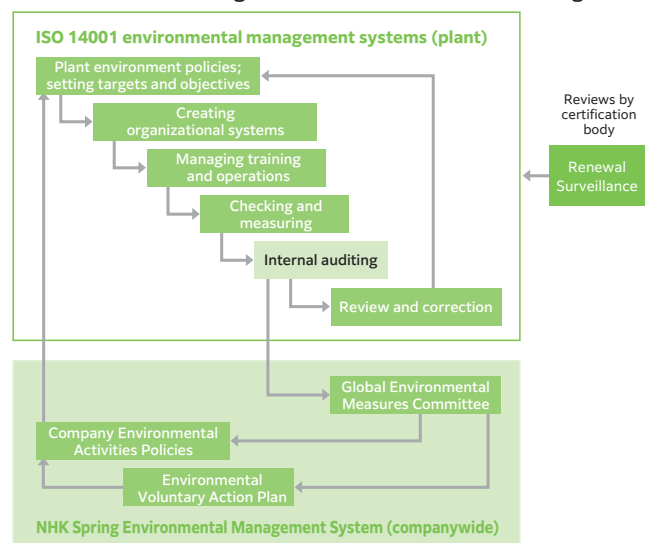
Environmental audits (internal auditing)

Internal auditing is led by persons who have completed specialized training.

In fiscal 2019, we conducted internal audits at each Group plant in accordance with ISO 14001 (2015).

Moreover, we held internal environmental auditor training courses taught by external instructors. This program has educated 19 ISO 14001 (2015) auditors in the Group to improve performance through the proper implementation of the system.

● Environmental management and environmental auditing



Environmental audits (external audits)

Inspections by external certification bodies are conducted to ensure that EMS implementation meets the requirements of ISO 14001 (2015).

The results of these external audits performed in fiscal 2019 found that each of the 11 plants was operating its EMS appropriately, that pollution was being prevented, and that continual efforts at environmental improvement were being carried out.



Fiscal 2019 external audits

8 plants (surveillance audits), 3 plants (renewal audits)

Energy saving diagnosis for CO₂ reduction

NHK Spring Group conducts regular energy saving diagnoses. Consultants certified by the Ministry of the Environment as CO₂ reduction potential diagnosticians perform site visits and interviews at company facilities, to develop new energy-saving measures aimed at sustained effective energy use and CO₂ emissions reduction.

In fiscal 2019, energy saving diagnostics were performed at four NHK Spring plants and one Group company, resulting in recommendations of emissions reduction measures for the five plants.

Moving forward, we will work to spread reduction measures horizontally throughout the group while systematically



Energy saving diagnostics

performing diagnoses at each Group plant, thus improving environmental performance through efficient energy use and CO₂ emissions reduction.

Voice



Taking proactive measures to promote energy management and CO₂ reduction

Tomoaki Tobe
Manager
Komagane Plant, DDS Division

The DDS Division Komagane Plant is situated amid the abundant natural environment of Komagane, Nagano Prefecture. Aiming to achieve both high productivity and environmentally friendly manufacturing, the plant produces suspensions for HDD use.

CO₂ reduction activities include establishing an annual improvement plan at the start of each fiscal year, and subsequent monthly follow-up efforts. For our fiscal 2019 activities, we set a CO₂ emissions reduction goal of 341 tons, which we exceeded, achieving a reduction of 351 tons. Moving forward, we are undertaking efforts to bring visibility to production line energy use, manage energy more proactively, and advance CO₂ reduction action.

Also, by heightening awareness among each and every employee, we are working toward more thoroughgoing waste separation, and will maintain our 100% recycling rate amid waste management standards that grow stricter each year.

Environment

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.

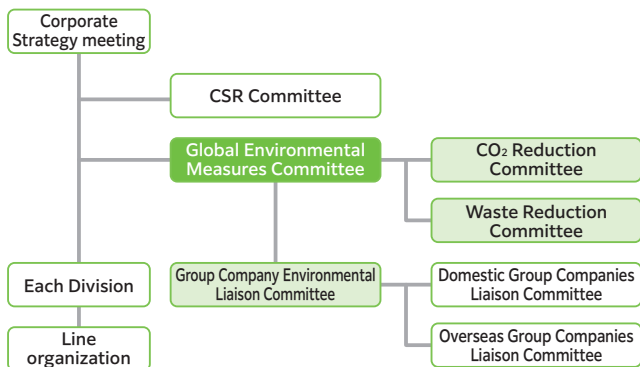
Organization

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 is also establishing frameworks to more proactively advance global environmental conservation activities.

System for encouraging environmental protection



Voice



Reliable improvement in risk management and environmental performance

Mariko Yamashita
Manager
Safety and Environmental Activities
Department, Engineering Division

NHK Spring has obtained ISO 14001 certification for all of our business sites, and have completed updates to the 2015 edition of the standard. We will continue to work toward reliable improvements in risk management and environmental performance.

We are also moving forward with CO₂ reduction efforts, and have met JAPIA reduction targets. In recent years, we have adopted solar power generation systems upon completing new facilities.

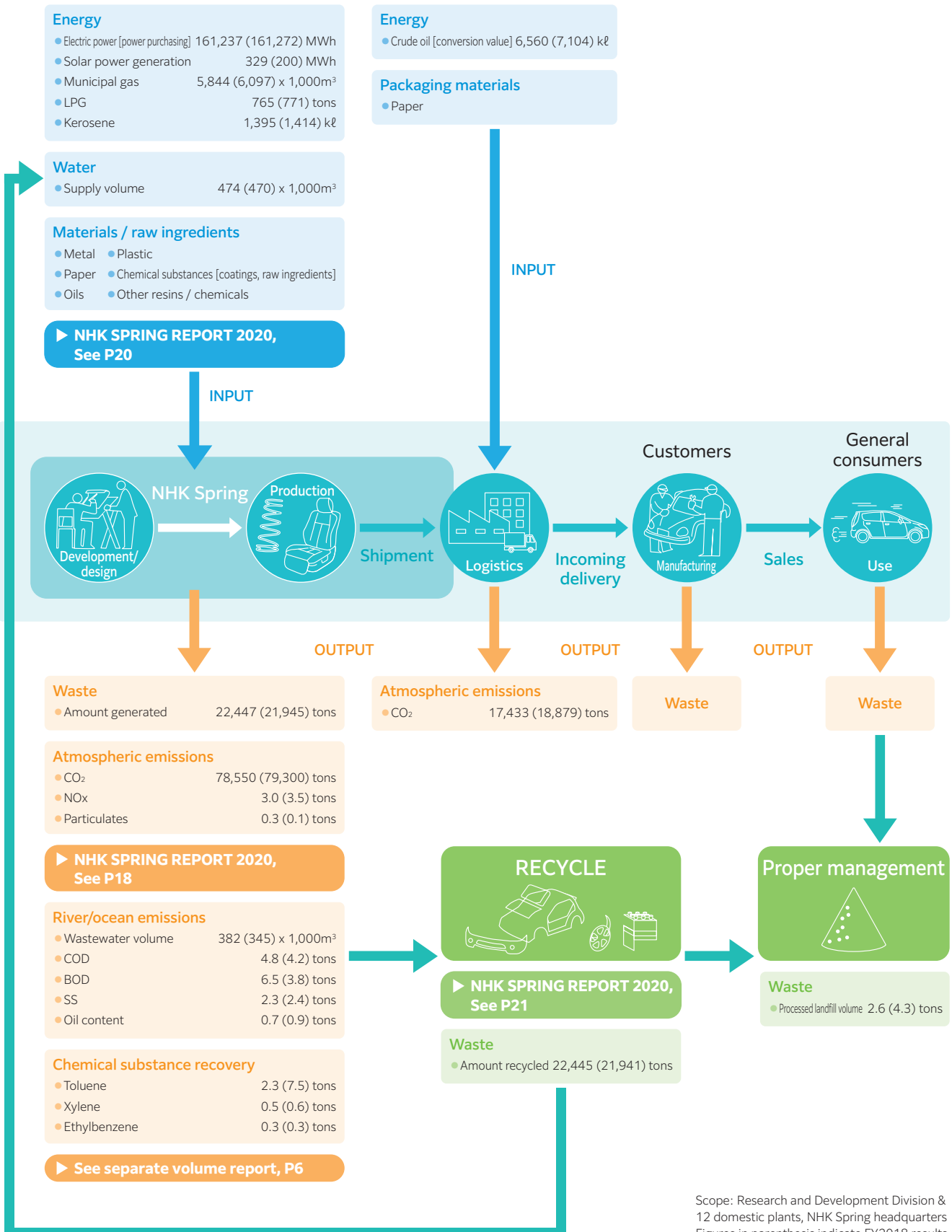
In addition, we are focusing efforts on waste reduction activities, and our Yokohama Office has been officially recognized for eight consecutive years since fiscal 2012 as a "Company that Excels in Implementing 3R Practices."

Each of our business sites also cooperates with local government authorities to give back to local communities through tree planting campaigns, riverside clean-up activities and other environmental improvement actions.

Business Activities and Life-cycle Flow

We understand our whole business in terms of a life cycle, so that by attaining the best possible quantitative understanding of its inputs and outputs, we can work to reduce environmental impacts. And through action such as recycling of waste, we aim to help achieve a recycling-oriented society.

Environment



Scope: Research and Development Division & 12 domestic plants, NHK Spring headquarters
 Figures in parenthesis indicate FY2018 results.