

Environmental Activities: The Brother Group's environmental activity report



The Brother Group helps society achieve sustainable development by positively and continuously considering the environmental impact in all aspects of our business operations.

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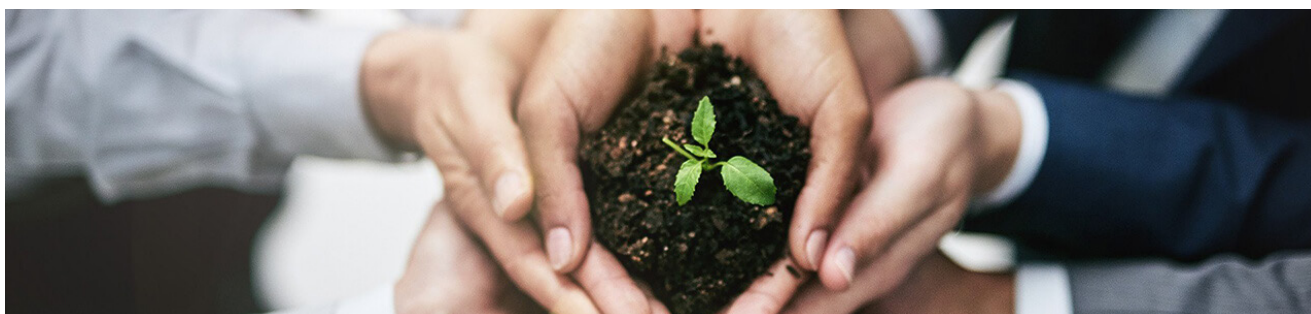
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Environmental Activities: The Brother Group's environmental activity report



The Brother Group helps society achieve sustainable development by positively and continuously considering the environmental impact in all aspects of our business operations.

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Scope of report: Brother Industries, Ltd. and its global group companies (including those in Japan)
Covered period: April 1, 2019 to March 31, 2020
Guideline used as a reference: GRI's "Sustainability Reporting Standards"

Environmental Strategy and Management

Message from the Management (Environment)

Toward achieving a sustainable society

With the establishment of the Sustainable Development Goals (SDGs)*1, the Paris Agreement (an international agreement for mitigating climate change), and the Corporate Governance Code*2 in 2015, the world began to take steady steps toward achieving a sustainable society.

On the other hand, climate change risk continues to make it unclear what changes could happen in the world and when and where, while the effects of COVID-19 are also increasing uncertainty.

Even under these circumstances, we are aiming for management that will create social value through our business under the spirit of "At your side.", which places the highest priority on customers in all situations.



Strengthen activities based on the Brother Group Environmental Vision 2050

In addressing the environment, we formulated the Brother Group Environmental Vision 2050 in March 2018 in order to contribute to solving urgent social issues such as climate change, toward creating a society in which sustainable development in line with the Brother Group Environmental Policy is possible. Based on this environmental vision, we are strengthening our activities related to reduction of CO₂ emissions, resource circulation, and biodiversity conservation.

In particular, the mid-term target for FY2030 related to reduction of CO₂ emissions set out in this vision has been recognized by the international environmental initiative, Science Based Targets initiative, as a target based on scientific evidence to help achieve the Paris Agreement's goal of limiting global warming to well below 2 degrees Celsius. As for the reduction of CO₂ emissions throughout the entire Brother Group (Scope 1 & 2), a reduction of 37.8% was achieved in FY2019, already exceeding the FY2030 target of a 30% decrease from FY2015 levels. Likewise, in terms of the reduction of CO₂ emissions in the Brother Group's value chain (Scope 3), a reduction of 15.8% was achieved toward the FY2030 target of a 30% decrease from FY2015. Starting in FY2020, the Brother Group is analyzing the business risks and opportunities presented by climate change, incorporating the results into the Brother Group's management strategy, and promoting further measures to mitigate climate change, based on the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD)*3, for which the Brother Group announced support in February 2020.



As for resource circulation, the Brother Group will reduce the amount of resources used in our main products, efficiently utilize water resources, and properly treat wastewater. As for biodiversity conservation, the Brother Group will build a framework for quantifying and reducing our environmental impact, and steadily continue activities toward achieving the goals.

*1: The international community's common aim, consisting of 17 goals and 169 targets, adopted by world leaders at a UN summit held in September 2015.

*2: Guiding principle for corporate governance that defines the code of conduct that must be followed by listed corporations.

*3: A task force established in 2015 by the Financial Stability Board (FSB), an international body in which the central banks and financial regulatory bureaus of major countries participate. In order to assess and disclose the financial effects of the risks and opportunities brought on by climate change, the FSB in June 2017 published its recommendations on how to disclose information.

Environmental Strategy and Management

Message from the Management (Environment)

Gaining public trust

In our history of more than 110 years, the Brother Group has continued to provide a variety of products matching customer needs and the changes of the times. To ensure that we are not afraid of change and continue delivering superior value as a manufacturing company while reducing our environmental impact, it is essential for us to collaborate with our business partners. In January 2019, the Brother Group joined the Responsible Business Alliance*¹, a global industry organization promoting corporate social responsibility through building a sustainable supply chain, and in February 2020 became a signatory to the United Nations (UN) Global Compact*². As the head of the management team, I am committed to reevaluating our business operations in terms of the Sustainable Development Goals (SDGs) toward achieving a sustainable society. In addition, I will make utmost efforts to enable the Brother Group to gather our technologies and knowledge toward continuing to provide products and services that solve social issues.

Ichiro Sasaki

**Representative Director & President
Brother Industries, Ltd.
September 2020**

*1: The Responsible Business Alliance has established a code of conduct made up of five sections, including the environment, and actively promotes conformity to this code and various standards.

*2: A voluntary pact to encourage corporations and other organizations worldwide to act as good citizens of society and to participate in a global framework for achieving sustainable growth by demonstrating responsible and creative leadership. The UN Global Compact asks its members to abide by and practice the Ten Principles consisting of four areas, including the environment.

▶ Brother Included in "FTSE4Good Index Series" ESG Investment Index for the First Time
<https://global.brother/en/news/2020/200708ftse>

▶ Brother to Comply with the Recommendations by the Task Force on Climate-related Financial Disclosures
<https://global.brother/en/news/2020/200212tcfcd>

▶ Brother Signed the Agreement to Join the UN Global Compact
<https://global.brother/en/news/2020/200227gc>

*: Click the link above to read a press release.

Environmental Strategy and Management

Environmental Policy and Management Structure



Brother Group's Environmental policy

The Brother Group helps society achieve sustainable development by positively and continuously considering the environmental impact in all aspects of our business operations.

The Brother Group's mission is to place our customers first everywhere, every time, and provide them with superior value, by quickly creating and delivering high-quality products and services. To fulfill the mission, it is essential to help society achieve sustainable development, by positively and continuously considering the environmental impact in all aspects of our business operations. This is the basic philosophy of the Brother Group Environmental Policy, and is set out in the Brother Group Global Charter, originally established in 1999, that provides the foundation for all Brother Group activities in the global marketplace. The charter has been translated into 28 languages and been shared with all our employees in order to create a system that is appropriate for a global company transcending differences in culture and customs.

Guidelines and Development of environmental activities

Concern for the environment shall be the cornerstone of all operations. Safety and environmental impact shall be prime considerations at every stage of a product's life cycle, from design, development, manufacturing, customer usage, and disposal, to reuse and recycling.

With this as the cornerstone, we seek to deploy environmental activities in accordance with the action guidelines given below.

Environmental Strategy and Management

Environmental Policy and Management Structure



Brother Group's Environmental policy

Guidelines	Development of environmental activities
1. We will set environmental targets in all areas (manufacturing, production, and service) and continuously improve their environmental aspects.	Both manufacturing and sales facilities work to acquire ISO 14001 certification, and strive to reduce environmental impact, such as reducing CO ₂ emissions.
2. We will recognize the importance of reducing energy consumption in all areas (manufacturing, production, and service) and strive to make energy consumption efficient and reduced in the entire Value Chain.	Improve energy-saving performance in products, energy saving at business sites, promote energy consumption reduction and efficiency, including more efficient distribution.
3. We will not limit our activities to the observation of laws and regulations in all countries where we conduct business, but will also act with a strong moral responsibility to prevent pollution and reduce environmental impact.	A rigorous management framework ensures compliance with environmental laws and regulations in respective countries, prevents oversight and omissions, and enables a quick response.
4. We will always consider waste reduction by more efficient use of resources and recycling of products, and will also avoid creating contamination by hazardous substances when designing and developing both technologies and products.	In developing products, eco-consciousness is considered in various aspects (e.g. resource conservation, use of hazardous chemical substances, and ease of recycling).
5. While respecting voluntary activities by each company of the Brother Group, we will also exercise our environmental duties as a united group.	Activities are promoted based on the Brother Group Mid-term Environmental Action Plan, which is the plan for the entire group.
6. We will enhance the environmental understanding and awareness of all employees through activities such as environmental education and PR.	Various educational opportunities are offered to enhance eco-consciousness (including training programs for new employees, technical training programs for engineers, and e-learning programs for all employees).
7. We will actively disclose our environmental efforts to our customers, local communities, and other interested parties to further foster understanding.	Proactive efforts are made to publicize Brother's activities, such as touring facilities with environmental features, participating in exhibitions, offering lessons at elementary schools and other educational institutions, and planting seedlings.
8. We will endeavor to reduce our impact on the ecosystem and to conserve biodiversity in all our operations.	Biodiversity conservation activities include the procurement of biodiversity-conscious raw materials and the use of FSC-certified paper. Projects for the restoration/conservation of forests or other natural habitats are promoted.

Environmental Strategy and Management

Environmental Policy and Management Structure



Brother Group's biodiversity conservation policy

Basic policy

To help build a sustainable society, the Brother Group will endeavor to reduce the impact of its operations on biodiversity and ensure biodiversity conservation through environmental and social contribution activities.

1. Challenges in management

- The Brother Group recognizes biodiversity conservation as an important challenge for corporate survival, and works on environmental management.

2. Business operations

- The Brother Group identifies the impact of all its operations (including procurement of raw materials) on biodiversity, and constantly endeavors to reduce the impact.

3. R&D activities

- The Brother Group gathers information and acquires technologies regarding conservation and sustainable use of biodiversity, and promotes technological development.

4. Social contribution activities

- The Brother Group works on biodiversity conservation activities in collaboration with stakeholders including government organizations, local residents, and NGOs.

5. Activities involving all employees

- Actions are led by top management, and measures are taken throughout the company to help all employees increase their knowledge about biodiversity and encourage them to work voluntarily on conservation activities.

6. Communication

- Details of activities are actively disclosed in and outside the company to raise awareness of biodiversity conservation activities.

Environmental Strategy and Management

Environmental Policy and Management Structure



Environmental slogan "Brother Earth"

To boost our environmental activities, the Brother Group created the "Brother Earth" logo and slogan in 2010 to symbolize our efforts. Under Brother Earth, each Brother Group employee has been further committed to various activities based on a unified message of "Working with you for a better environment."

In 2012, the Brother Group Principles of Social Responsibility were established to define the responsibilities that group companies are expected to assume and the fundamental concept of action for environmental conservation.

To appeal to society at large, "brother earth.com," Brother's special website on the environment, was launched to simply present Brother's wish and its unique environmental activities.



Working with you for a better environment

"5R" concept – the key to reducing environmental impact

From 1999, the Brother Group has been conducting environmental activities based on the "5Rs," which adds "Refuse" and "Reform" to the 3Rs of "Reduce," "Reuse" and "Recycle" as the basis for establishing a sound material-cycle society. "Reform" in particular is an original idea from the Brother Group for creating value by introducing novel approaches and ideas for changing the state of a waste material.

"5R" Concept



- **Refuse:** Avoid purchase of environmentally burdensome materials whenever possible
- **Reduce:** Reduce waste materials
- **Reuse:** Reuse waste materials without processing
- **Reform:** Reuse materials in a different form
- **Recycle:** Reuse materials as resources

Environmental Strategy and Management

Environmental Policy and Management Structure

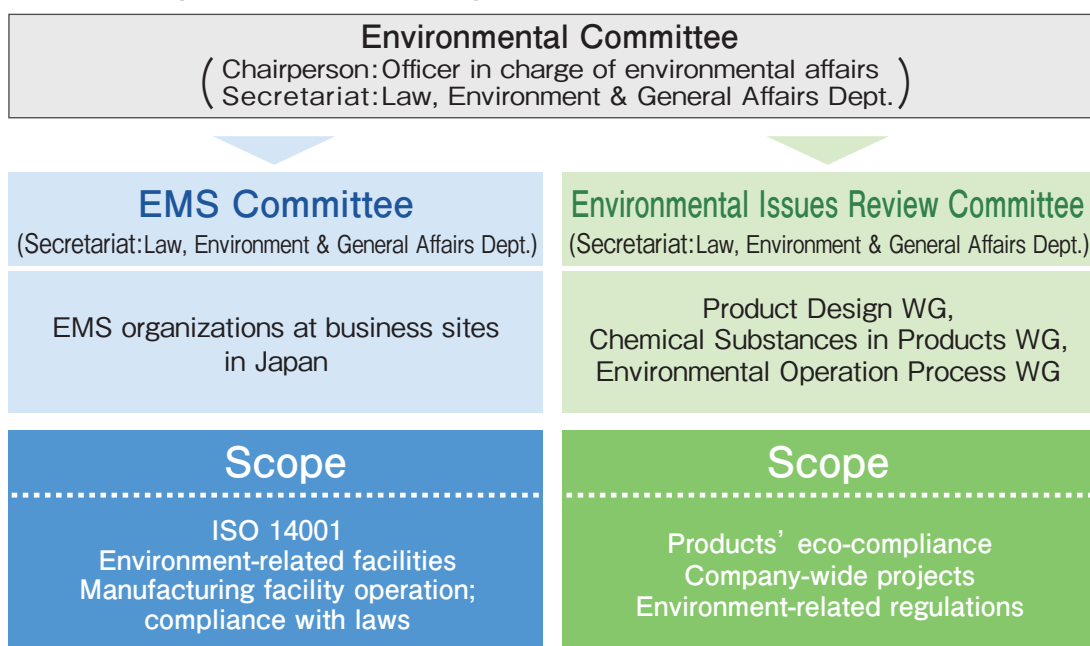


Environmental management framework

Globally managing environmental issues throughout the group, led by the Environmental Committee

The Brother Group promotes global environmental conservation according to the Brother Group Environmental Policy. Specifically, the officer in charge of environmental affairs instructs respective departments at head office as well as divisions and function centers through the Environmental Committee (the supreme committee responsible for promoting environmental management) to determine policies and implement measures.

Brother Group environmental management framework



Environmental Strategy and Management

Environmental Policy and Management Structure



Environmental management framework

Environmental Committee

The Environmental Committee is the decision-making body responsible for environmental risks and environmental issues of the Brother Group, such as climate change and environmental laws and regulations. It is chaired by the officer in charge of environmental affairs and other executive officers responsible for function centers, new business, and general affairs. Committee meetings are held twice a year, and extraordinary meetings are held as necessary. Serious environmental risks and issues related to climate change and environmental laws and regulations raised at the Environmental Committee are reported to the Risk Management Committee chaired by the representative director & president. In addition, top priorities are reported to the Board of Directors for instructions and supervision from the management.

As in previous years, there were no serious accidents or environmental penalties (total payment of zero yen) in FY2019 (April 1, 2019–March 31, 2020). Regarding permits, standards, and regulations related to water, as in previous years, there were also no violations (zero cases of violations).

▶ Brother Industries, Ltd. Governance Structure
https://global.brother/en/corporate/governance/structure#org_chart

EMS (environmental management system) Committee (secretariat: Law, Environment & General Affairs Dept.)

This committee has control over the EMS organizations set up in the head office and manufacturing facilities in Japan. The committee monitors ISO 14001 operations at these facilities and compliance with laws and regulations in Japan, while constantly following up improvement activities.

Respective business sites and major group companies

These entities have dedicated staff responsible for environmental conservation activities. The staff members identify and report (i) progress in fulfilling specific policies and targets set by the Environmental Committee and (ii) compliance with rules for environmental management.

Environmental Strategy and Management

Environmental Policy and Management Structure



Environmental management framework

Environmental Issues Review Committee (secretariat: Law, Environment & General Affairs Dept.)

This committee draws up and reviews specific policies and measures relating to products' eco-compliance, company-wide projects, and environment-related regulations.

Working Groups (WGs)

The following working groups in Japan serve as task forces responsible for their respective themes.

- Product Design WG: Reviews and determines various standards and targets (such as CO₂ emission reduction and recycling) for eco-friendly product design.
- Chemical Substances in Products WG: Ensures compliance with regulations on chemical substances contained in products, primarily the RoHS Directive.
- Environmental Operation Process WG: Addresses the establishment of eco-compliance operations and environmental information systems for the entire group.

Environmental communication promotion framework

The Brother Group established "working on activities to enhance the environmental brand image under the environmental slogan 'Brother Earth'" as the basic policy for environmental communication in the Brother Group Environmental Action Plan 2021 (2019-2021). The CSR & Corporate Communication Department takes the initiative to promote environmental activities at facilities around the world.

Environmental Strategy and Management

Environmental Policy and Management Structure



Environmental management system

Practicing the PDCA cycle in line with ISO 14001

Under our mid-term management plan, the Brother Group creates the Brother Group Environmental Action Plan every three to five years, based on which Brother Industries, Ltd. (BIL) and manufacturing and sales facilities in respective countries set annual plans and carry out environmental activities as part of their business operations. The progress and performance (results) of plans are checked based on reports from and internal audits on each facility, and the findings are then reflected when planning for the following year.

In operating the environmental management system for environmental conservation activities, compliance with laws, regulations, and standards is ensured, and the ISO 14001-based PDCA (Plan - Do - Check - Act) cycle is practiced.

ISO 14001 certification has been obtained by all group manufacturing facilities*, with Brother Industries (U.K.) Ltd. being the first to be certified in 1996. Brother U.K. Ltd., a sales facility in the U.K., obtained certification in 2005, followed by other many sales facilities.

* : When a new business site is established, activities are implemented in compliance with ISO 14001 upon commencement of operations, and ISO 14001 certification is immediately obtained.

PDF List of ISO 14001-certified facilities [PDF/324KB]
<https://global.brother/-/media/global/eco/pdf/data/en/iso14001.ashx>

Internal audit and external review

The Brother Group annually conducts internal audits to confirm that manufacturing facilities in and outside Japan effectively follow the environmental management system in conformance with ISO 14001. The Brother Group is also subject to external review for ISO 14001 (environmental management system) certification.

For facilities in Japan, internal audits are conducted by the Law, Environment & General Affairs Department of BIL. For overseas facilities, internal audits are conducted by departments in charge of environmental affairs at the respective facilities. Internal audits are conducted to check compliance with relevant laws and regulations, the progress of annual plans, the effectiveness of the environmental management system, and consistency with ISO standards. Corrective measures are implemented immediately when any nonconformance is found, and the effectiveness of such corrective measures is checked by follow-up audits. Audit results in Japan, together with the status of legal compliance and performance (results), are presented to the Environmental Committee.

In the annual internal audit and external review, it was confirmed that the PDCA cycle is being practiced properly.

Environmental Strategy and Management

Environmental Policy and Management Structure



Environmental management system

Environmental training for employees

The Brother Group's ISO 14001-certified facilities offer environmental training programs for all employees as well as job specific training related to specific tasks and functions.

Examples include environmental training programs for all new recruits joining Brother; e-learning-based environmental training programs for all employees; training programs for production and procurement staff at manufacturing facilities in and outside of Japan, for example, the management of chemical substances contained in products, process control guidance and auditing at suppliers. Essential environmental training is periodically provided to raise eco-awareness and facilitate operations.

Environmental Strategy and Management

Environmental Action Plan



Brother Group Environmental Vision 2050

In March 2018, the Brother Group formulated the Brother Group Environmental Vision 2050 as a new long-term target of the Brother Group to contribute to resolving global environmental issues under the slogan "Brother Earth," and established a mid-term target for FY2030 as a milestone.

Out of the three goals of reduction of CO₂ emissions, resource circulation, and biodiversity conservation, the mid-term target for FY2030 for reduction of CO₂ emissions has been recognized as a target based on scientific evidence by the Science Based Targets (SBT) initiative, an international initiative established to help achieve greenhouse gas emission reduction targets.



See ▶ 16p Toward a Sustainable Society

▶ Brother Became the First Company in the Chubu Region to Have CO₂ Emissions Reduction Targets Approved by the Science Based Targets Initiative

<https://global.brother/en/news/2018/sbt> *: Click the link above to read a press release.

Brother Group Environmental Action Plan 2021 (2019–2021)

Basic policy

The Brother Group shall proactively promote the following initiatives with its stakeholders to solve the key issues set in the Brother Group Environmental Vision 2050:

- Create eco-conscious products
- Reduce CO₂ emissions in the entire value chain
- Strengthen resource circulation in our business activities
- Reduce the burdens of business operations on the ecosystem and expand conservation activities
- Address social requirements properly in addition to compliance with environmental laws and regulations

Environmental targets based on the basic policy (2019–2021) and achievements in FY2019

1. Activities at Brother facilities

- 1-1 Reduction of CO₂ emissions (Scope 1 and 2)
- 1-2 Reduction of water consumption
- 1-3 Waste reduction
- 1-4 Obtainment of ISO 14001 certification and reconstruction of the environmental management system
- 1-5 Legal compliance and response to social requirements
- 1-6 Assessment of impact on the ecosystem
- 1-7 Biodiversity conservation

Environmental Strategy and Management

Environmental Action Plan



Environmental targets based on the basic policy (2019–2021) and achievements in FY2019

*: The numbers in "Environmental targets" in the chart below correspond to the numbers in the text above.

Environmental targets*	Achievements in FY2019	Self-evaluation
1-1	Achieved an 11.7% reduction from FY2018. (Absolute value)	Significantly achieved
1-2	Achieved a 16.7% reduction from FY2018. (Per unit of sales)	Significantly achieved
1-3	Achieved an 8.5% reduction from FY2018. (Absolute value)	Significantly achieved
1-4	Obtained multi-site certification together with consolidated subsidiary Xing Inc. In addition, conducted major organizational change (restructuring) aimed at efficient operation of environmental management systems in Japan.	Achieved
1-5	Conducted response to legal compliance in accordance with ISO 14001. In addition, deployed various measures and achieved reduction of greenhouse gases which are thought to be the causes of climate change.	—
1-6	With printing equipment—Brother's flagship product—as a model, conducted quantitative evaluation of environmental impact on biodiversity from business operations using the LIME2 method (second edition of Japan's version of life cycle environmental impact evaluation method based on damage assessment) and created a relation map between biodiversity and business operations in the entire value chain.	—
1-7	To expand activities for biodiversity conservation, which is an important theme of the Brother Group Environmental Vision 2050, a new "Biodiversity Conservation 5R Award" was added to the Environmental 5R Awards—an internal commendation system—since FY2019 to encourage group companies to undertake activities. In FY2019, Brother International Europe Ltd. (BIE) received the Gold award for its 10-year partnership with U.K.-based NPO Cool Earth and conducting environmental protection activities in the basin of the Amazon River. BIE's activities are also introduced in the page of "Environmental Vision 2050: Biodiversity Conservation." See ▶ 28p Environmental Vision 2050: Biodiversity Conservation	Achieved

[See](#) ▶ 38p Environmental performance data

[PDF](#) List of ISO 14001-certified facilities [PDF/324KB] <https://global.brother/-/media/global/eco/pdf/data/en/iso14001.ashx>

▶ Special Website on the Environment (brotherearth.com) <https://www.brotherearth.com/en/>

Environmental Strategy and Management

Environmental Action Plan



Environmental targets based on the basic policy (2019–2021) and achievements in FY2019

2. Activities related to products

- 2-1 Reduction of CO₂ emissions (Scope 3)
- 2-2 Promotion of reuse and recycle
- 2-3 Promotion of environmentally friendly design
- 2-4 Legal compliance and response to social requirements

*: The numbers in "Environmental targets" in the chart below correspond to the numbers in the text above.

Environmental targets*	Achievements in FY2019	Self-evaluation
2-1	Brother is building a system where CO ₂ reduction targets (compared to previous model) are set for each product in the upstream stages of new product development and product development is carried out aimed at those targets. In FY2019, such a system was established for the mainstream Printing & Solutions Business and reduction activities were started.	—
2-2	To reduce the consumption of new natural resources, targets were established to increase the use of recycled plastic in printing equipment which uses a lot of plastic. In addition, reduction targets for the use of polystyrene foam—which is especially difficult to recycle globally—was also simultaneously established to reduce plastic packaging material which is becoming an environmental problem.	—
2-3	In the product group of Communications and Printing Equipment, environmentally friendly design was promoted from the initial stages of product planning and development, and management complying with environmental labelling standards were carried out. As a result, products met the standards for environmentally friendly products, such as the Blue Angel in Germany, the Eco Mark in Japan, and EPEAT in the United States which are top-level environmental labels and standards in major regions.	—
2-4	Ensured proper compliance with all environmental laws and regulations—including new laws and regulations that came into effect in the respective countries and regions—regarding chemical substances contained in products, laws and regulations on recycling of waste electrical/electronic equipment and packaging materials, and energy-saving regulations on products.	Achieved

See ▶ 38p Environmental performance data

See ▶ 41p Product Lifecycles—Environmental Considerations

See ▶ 58p Environmental Labels Obtained

Environmental Strategy and Management

Environmental Action Plan



Environmental targets based on the basic policy (2019–2021) and achievements in FY2019

3. Environmental communication

- 3-1 Information disclosure
- 3-2 Collaboration with suppliers
- 3-3 Environmental education

*: The numbers in "Environmental targets" in the chart below correspond to the numbers in the text above.

Environmental targets*	Achievements in FY2019	Self-evaluation
3-1	Worked to improve engagement with stakeholders through the special website on the environment (brotherearth.com) based on the environmental slogan "Brother Earth." Disclosed the Brother Group's environmental activity report from the perspective of SDGs, and at the same time, took into consideration social requirements and enhanced activity details specifically related to water and suppliers.	Achieved
3-2	Collaborated with suppliers to promote green procurement. Established study team and launched study so as to formulate the "Supplier's Guidelines" (tentative name) related to the environment. Conducted audits on suppliers in Japan and overseas—which number more than 350—regarding their management systems for chemical substances contained in products. For suppliers with issues pointed out as a result of the audits, follow-up audits were conducted on corrective and improvement measures after they have been implemented. Out of these, 17 suppliers in Japan and overseas were visited and given guidance anew.	Achieved
3-3	Continued to promote the Brother Eco Point Program within the Brother Group. Continued to implement measures to improve the environmental awareness of employees using the internal commendation program, information dissemination via the intranet, and e-learning.	Achieved

参照 ▶ 56p Green Procurement

PDF Brother Eco Point Program [PDF/301KB]
<https://global.brother/-/media/global/eco/pdf/data/en/eco-point.ashx>

PDF Internal Environmental Commendation system [PDF/287KB]
<https://global.brother/-/media/global/eco/pdf/data/en/award.ashx>

Toward a Sustainable Society

Global Environmental Conservation and SDGs

SDGs related to Brother's environmental conservation efforts



The Sustainable Development Goals (SDGs) comprise 17 goals and 169 targets aimed at realizing a sustainable world. They are universal goals adopted unanimously by the 193 member states at the General Assembly of the United Nations held in 2015.

The Brother Group will also create social value globally through our businesses to contribute to the achievement of the SDGs based on the Brother Group Environmental Policy.

In 2018, we formulated the Brother Group Environmental Vision 2050 regarding the key social issues of climate change, resource depletion, environmental pollution, and destruction of the ecosystem. We established the mid-term target for FY2030 as a milestone and continue to undertake various activities.

[See](#) ▶ 3p Environmental Policy and Management Structure

Brother Group Environmental Vision 2050

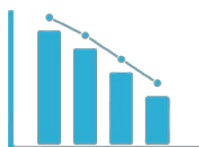
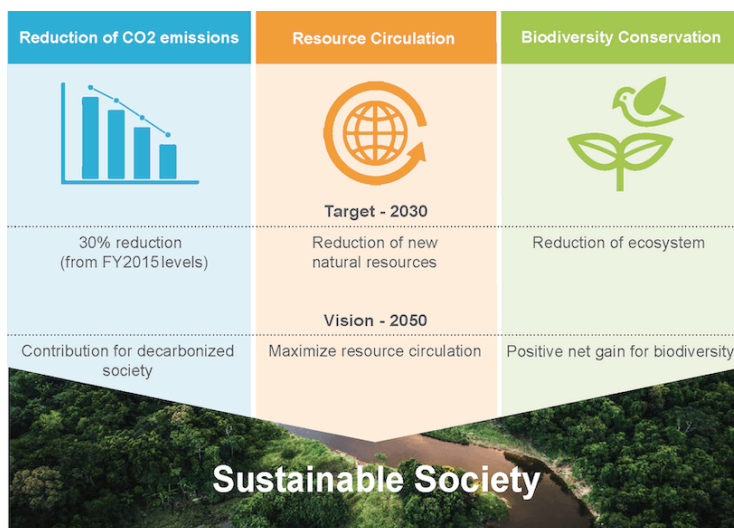
Established: March 19, 2018

The Brother Group Environmental Vision 2050 recognizes the key social issues of climate change, resource depletion, environmental pollution, and destruction of the ecosystem as business risks for the Brother Group and clearly states the group's continuous commitment toward solving these issues over the long term as a company that uses energy and resources to provide products using bio-based items such as paper, thread and cloth.

Toward a Sustainable Society Global Environmental Conservation and SDGs

Brother Group Environmental Vision 2050

Three key issues undertaken by the Brother Group



Reduction of CO2 emissions

The vision aims to support the Paris Agreement and contribute toward creating a carbon-free society with zero greenhouse gas emissions.

Mid-term target for FY2030: 30% reduction from FY2015

[Scopes 1 and 2] Achieve 30% reduction from the FY2015 level

[Scope 3] Categories 1, 11, and 12 Achieve 30% reduction from the FY2015 level

※The mid-term target for FY2030 for reduction of CO₂ emissions has been recognized as a target based on scientific evidence by the Science Based Targets (SBT) initiative, an international initiative established to help achieve greenhouse gas emission reduction targets.

▶ Brother Became the First Company in the Chubu Region to Have CO₂ Emissions Reduction Targets Approved by the Science Based Targets Initiative

<https://global.brother/en/news/2018/sbt>

*: Click the link above to read a press release.



DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

2050 vision: Contribution for decarbonized society

The Brother Group is committed to reducing CO₂ emissions of the entire value chain in all its business operations by 2050 and contributing to creating a carbon-free society, which is a mission for the global community.

See ▶ 19p Environmental Vision 2050: Reduction of CO₂ Emissions

See ▶ 23p Response to TCFD Recommendations

Toward a Sustainable Society

Global Environmental Conservation and SDGs

Brother Group Environmental Vision 2050



Resource circulation

The vision aims to ensure sustainable use of natural resources in business operations and minimize the environmental impact due to wastes.

Mid-term target for FY2030: Reduction in use of new natural resources

Mechanisms for resource circulation have been established throughout the value chain. Efforts have been made to reduce the amount of new natural resources that are used in main products.

The group's manufacturing facilities continuously endeavor to ensure efficient use of water resources and proper treatment of wastewater.

2050 vision: Maximize resource circulation

Toward 2050, the Brother Group will maximize resource circulation to ensure the sustainable use of natural resources and minimize the environmental impact due to wastes.

See ▶ 24p Environmental Vision 2050: Resource Circulation



Biodiversity conservation

The vision aims to minimize the environmental impact of business operations and promote activities to restore and conserve the ecosystem beyond the impact.

Mid-term target for FY2030: Reduction of environmental impact on the ecosystem

The Brother Group assesses the environmental impact of its business operations on the ecosystem and the effectiveness of restoration and conservation activities, and works to avoid and reduce the environmental impact on the ecosystem.

The manufacturing and sales facilities of the entire group work on ecosystem restoration and conservation activities on a voluntary basis depending on the situation in each region.

2050 vision: Positive net gain for biodiversity

By 2050, the Brother Group will minimize the environmental impact of business operations on the ecosystem and promote activities to restore and conserve the ecosystem beyond the impact.

See ▶ 28p Environmental Vision 2050: Biodiversity Conservation

Toward a Sustainable Society

Environmental Vision 2050: Reduction of CO₂ Emissions



Brother Group Environmental Vision 2050

VISION

01
Reduction of CO₂
Emissions

02
Resource Circulation

03
Biodiversity
Conservation

01

The vision aims to support the Paris Agreement and contribute toward creating a carbon-free society with zero greenhouse gas emissions.

Reduction of CO₂ Emissions

GOAL

By 2050, the Brother Group will actively reduce CO₂ emissions from the entire value chain in all business operations and contribute to creating a carbon-free society that the global community aims to achieve.



Toward a Sustainable Society

Environmental Vision 2050: Reduction of CO₂ Emissions

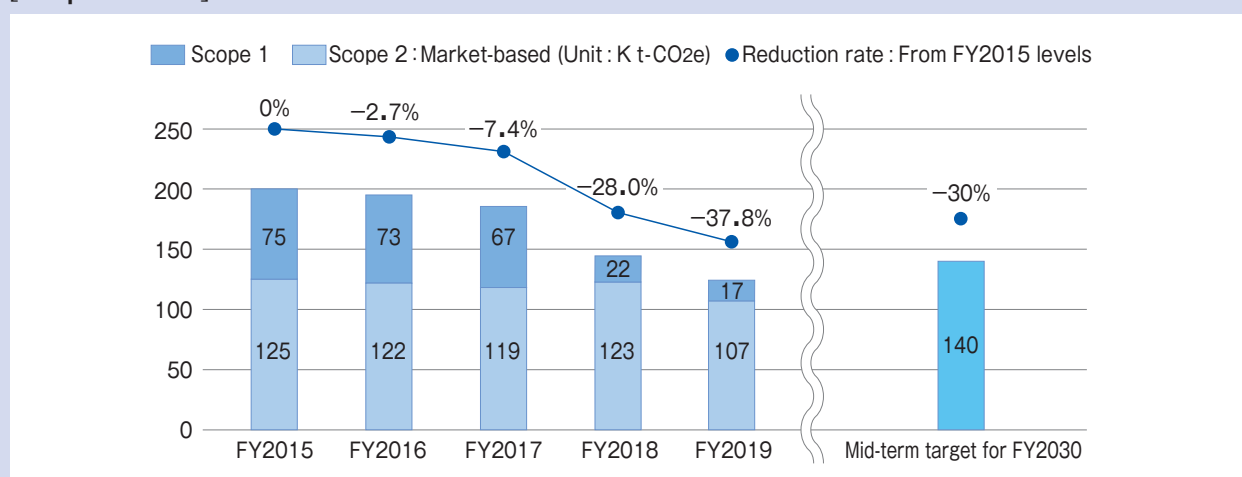


Brother Group Environmental Vision 2050

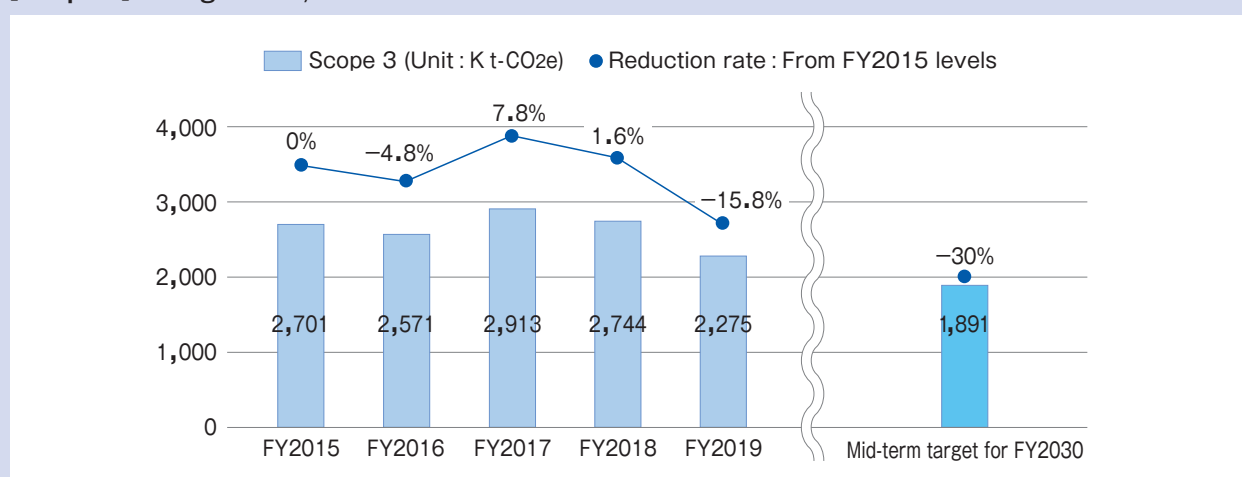
Reduction of CO₂ Emissions

Mid-term target for FY2030*

[Scope 1 and 2] Achieve 30% reduction from the FY2015 level



[Scope 3] Categories 1, C11 and C12 Achieve 30% reduction from the FY2015 level



*: The mid-term target for FY2030 has been recognized as a target based on scientific evidence by the Science Based Targets (SBT) initiative, an international initiative established to help achieve greenhouse gas emission reduction targets.



Toward a Sustainable Society

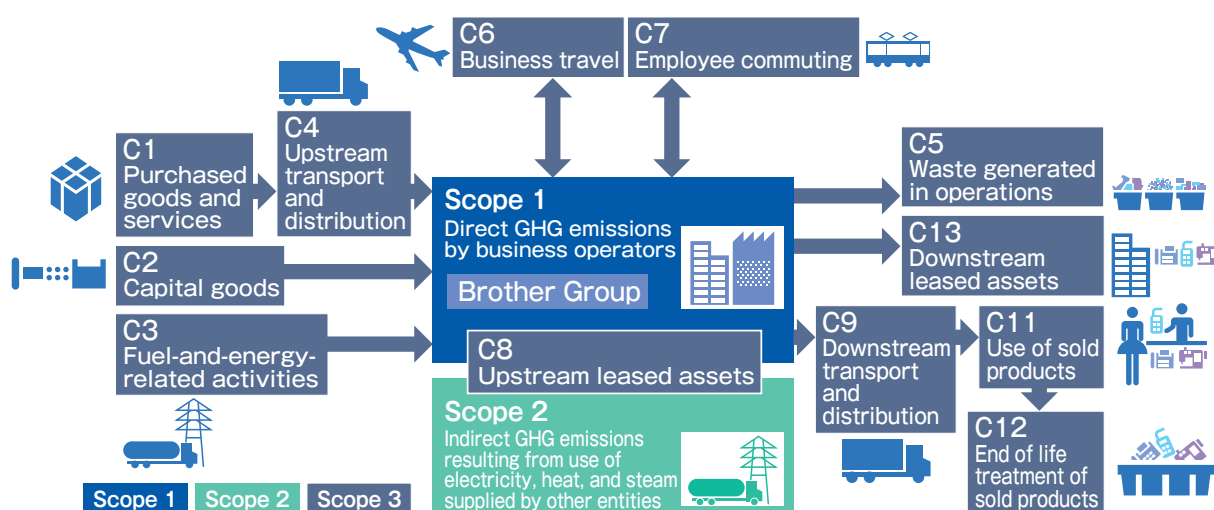
Environmental Vision 2050: Reduction of CO₂ Emissions



Brother Group Environmental Vision 2050

Reduction of CO₂ Emissions

Through reducing the use of solvents containing greenhouse gases which has been undertaken since FY2018, we were able to significantly reduce Scope 1 and 2 CO₂ emissions. The FY2030 mid-term target for Scope 1 and 2 were achieved 10 years in advance. Going forward, we will revise the target upward with FY2021 as a gauge and take on the challenge of achieving this new target. Regarding Scope 3, we continue to work on improving the energy-saving performance of products, and achieved a significant reduction of 15.8% compared to FY2015. We will continue to take on challenges with procurement, development, manufacturing, logistics, sales, and service working as one.



Scope 1, 2, and 3

These are components making up greenhouse gas (GHG) emissions in the supply chain. Dividing into three categories minimizes overlapping calculations and allows specific emissions to be identified.

Scope 1: Direct GHG emissions by business operators

Scope 2: Indirect GHG emissions resulting from use of electricity, heat, and steam supplied by other entities

Scope 3: Indirect GHG emissions other than Scope 1 and 2 (emissions by other entities related to the activities of business operators)

▶ Brother Became the First Company in the Chubu Region to Have CO₂ Emissions Reduction Targets Approved by the Science Based Targets Initiative
<https://global.brother/en/news/2018/sbt> *: Click the link above to read a press release.

See ▶ 23p Response to TCFD Recommendations

Toward a Sustainable Society

Environmental Vision 2050: Reduction of CO2 Emissions



Brother Group Environmental Vision 2050

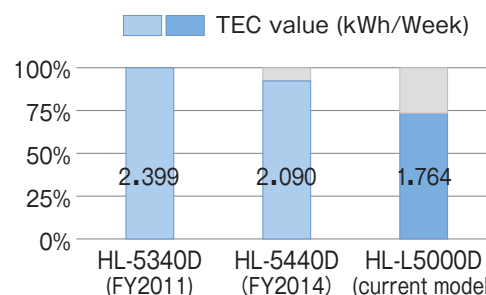
Reduction of CO2 Emissions

Examples of CO2 reduction

Energy-saving performance of Brother's products with customers and the environment in mind

HL-L5000D's power consumption per week is 1.764 kWh/week. This is 16% lower than the previous model, and a 26% reduction from the model before the last. Brother continues to strive untiringly as a company delivering better products that are friendly to the environment.

* : Figures calculated using the TEC test procedure.



Thinking about the environment from the perspective of electrical energy—toward a future with widespread use of hydrogen

Toward the development of fuel cell systems, Brother has undertaken many years of fuel cell research while pursuing the potential of hydrogen.

There are still many issues in further widening the use of hydrogen. However, the development of this technology was a steady step into the future for Brother.



See ▶ 38p Environmental performance data

Video contents of [brotherearth.com](https://www.brotherearth.com)

- ▶ Fuel Cell <https://www.brotherearth.com/en/tech/fuel-cell.html>
- ▶ Eco Factory <https://www.brotherearth.com/en/tech/ecofactory.html>
- ▶ Power Regeneration <https://www.brotherearth.com/en/tech/power-supply-regenerative.html>
- ▶ Low Energy Standby <https://www.brotherearth.com/en/tech/standby.html>
- ▶ Direct Drive <https://www.brotherearth.com/en/tech/direct-drive.html>
- ▶ Low-Noise Belt Drive https://www.brotherearth.com/en/tech/hsm_belt-driving.html

Toward a Sustainable Society

Response to TCFD Recommendations



Promoting further climate change mitigation measures

In February 2020, the Brother Group expressed our support for the recommendations made by the Task Force on Climate-related Financial Disclosures (TCFD).



In the future, based on TCFD recommendations, the Brother Group will strive to analyze the risks climate change brings to our business as well as the opportunities, incorporate the results into our management strategy, and disclose related information. In conjunction with our support of the TCFD recommendations, the Brother Group plans to promote further measures for mitigating climate change to contribute toward creating a carbon-free society.

- ▶ Brother to Comply with the Recommendations by the Task Force on Climate-related Financial Disclosures
<https://global.brother/en/news/2020/200212tcf>
- ▶ To visit TCFD website
<https://www.fsb-tcf.org> (the link to the site of "TCFD")

Toward a Sustainable Society

Environmental Vision 2050: Resource Circulation



Brother Group Environmental Vision 2050

VISION

01
Reduction of CO₂
Emissions

02
Resource Circulation

03
Biodiversity
Conservation

02

The vision aims to ensure sustainable use of natural resources in business operations and minimize environmental impact due to waste.

Resource Circulation

GOAL

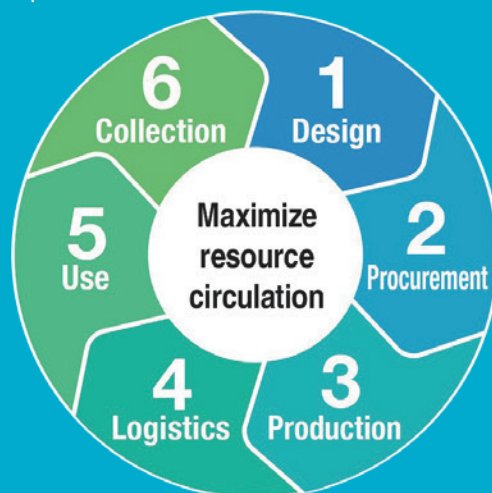
Toward 2050, the Brother Group will maximize resource circulation to ensure the sustainable use of natural resources and minimize the environmental impact due to wastes.

Mid-term target for FY2030

Mechanisms for resource circulation have been established throughout the value chain. Efforts have been made to reduce the amount of new natural resources that are used in main products.

The group's manufacturing facilities continuously endeavor to ensure efficient use of water resources and proper treatment of wastewater.

The mid-term target aims to reduce* the consumption of resources for main products, achieve efficient use of water resources, and ensure proper treatment of wastewater.



*: Regarding the reduction of consumption of resources for products, the reduction target values will be set by FY2021 while monitoring the development of global environmental regulations.

Toward a Sustainable Society

Environmental Vision 2050: Resource Circulation



Brother Group Environmental Vision 2050

Resource Circulation

Resource circulation initiatives

Plastics are useful resources that are inexpensive and easy to mold, and are used in many products all over the world. However, plastic waste, most of which is not yet being recycled, is causing environmental problems such as marine plastic pollution and soil contamination. To help mitigate these environmental problems, the Brother Group has increased the use of recycled plastics in printing equipment, our main business, and formulated an internal goal for reducing the use of polystyrene foam, a plastic packaging material that cannot be easily recycled. Through these initiatives, the Brother Group aims to contribute to the recycling of plastics and reducing the environmental impact related to plastic manufacturing. In the future, the Brother Group plans to accelerate these activities and promote resource circulation throughout our value chain.

Examples of resource circulation

Exploring recycling possibilities for the sake of the future global environment

In Europe, we started a recycling program in 2004 by adopting newly developed recycling-compatible toner cartridges. Thanks to an automated recycling system we introduced, we are able to offer the same high quality in recycled cartridges, as well. In 2014, the Brother Group group received two prestigious awards in the 2014 Responsible Business Awards given out by Business in the Community, a U.K.-based NPO. The group's contribution to communities and the environment was recognized.



LINK

Video contents of [brotherearth.com](https://www.brotherearth.com)

- ▶ Toner Cartridges Recycling
<https://www.brotherearth.com/en/tech/toner-recycle.html>
- ▶ Package Design Optimization
<https://www.brotherearth.com/en/tech/package-desing-optimization.html>

Toward a Sustainable Society

Environmental Vision 2050: Resource Circulation



Brother Group Environmental Vision 2050

Resource Circulation

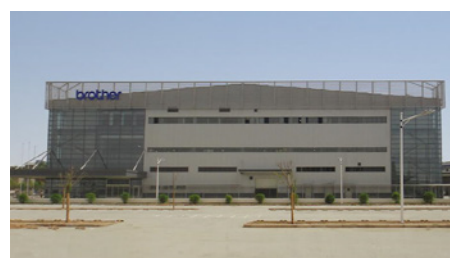
The Brother Group's water usage reduction activities

Securing safe water resources is an important environmental challenge for the global community. The Brother Group has been monitoring all of our sites regularly, evaluating water risks at each site every year, and working to reduce water consumption to fulfill our responsibilities as an operator of manufacturing facilities in many countries and regions. At the 13 facilities with relatively higher water consumption, we also formulate water management plans and implement various initiatives.

In FY2019, we formulated the new Brother Group Environmental Action Plan 2021 (2019-2021). In it, we set up a target of reducing water consumption at manufacturing facilities by 3% from FY2018 (April 1, 2018–March 31, 2019) levels by FY2021 (April 1, 2021–March 31, 2022) (per unit of sales), and made efforts to reduce water consumption. By taking measures such as improving production efficiency and reducing restroom water consumption, the Brother Group achieved a major reduction, cutting water consumption by 36.8% from the FY2010 level (per unit of sales) and 16.7% from the FY2018 level (per unit of sales). Further, we found from the FY2019 water risk evaluation that the following three sites had relatively high risks: two in China and one in Philippines.

Water circulation efforts at Brother Machinery Xian Co., Ltd.

Brother Machinery Xian Co., Ltd. (BMX) is located in an area with relatively high water risk since water resources are not abundant there. In FY2018, as part of an effort to circulate water, BMX installed a rainwater collection tank inside its site and is continuing to use the collected water for maintaining greenery.



Toward a Sustainable Society

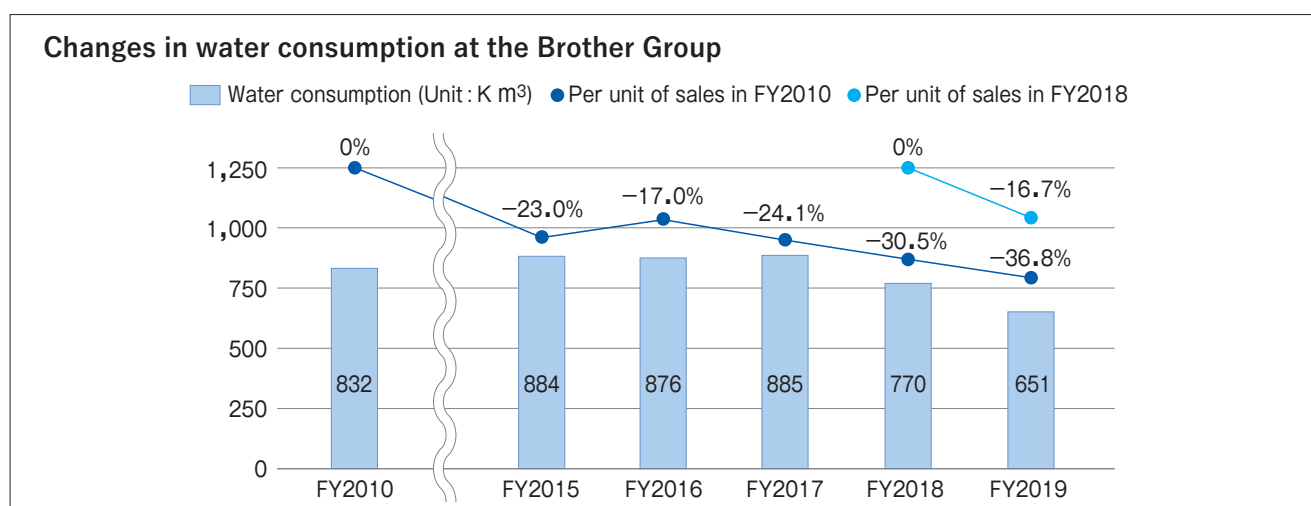
Environmental Vision 2050: Resource Circulation



Brother Group Environmental Vision 2050

Resource Circulation

The Brother Group's water usage reduction activities



Scope of aggregation

FY2010	FY2015–FY2019
<p>Eight business sites in Japan (head office of Brother Industries, Ltd., Mizuho Manufacturing Facility, Hoshizaki Manufacturing Facility, Minato Manufacturing Facility,*1Momozono Manufacturing Facility, Kariya Manufacturing Facility, Research & Development Center, and Logistics Center), Brother Industries (U.K.) Ltd., Taiwan Brother Industries, Ltd., Zhuhai Brother Industries, Co., Ltd., Brother Machinery Xian Co., Ltd.,*2 Brother Industries (Shenzhen), Ltd.,*3 Brother Technology (Shenzhen) Ltd., Brother Industries Technology (M) Sdn. Bhd.,*4 Brother Industries (Vietnam) Ltd., Nissei Corporation, Mie Brother Precision Industries, Ltd., and Brother Industries (Slovakia) s.r.o.</p>	<p>Brother Industries Saigon, Ltd., Brother Industries (Philippines), Inc. and Brother Machinery Vietnam Co., Ltd. were added to the scope of aggregation on the left.</p>

*1: The Minato Manufacturing Facility stopped production on September 30, 2017.

*2: Brother Machinery Xian Co., Ltd. is a business site established through the merger of Xian Brother Industries, Co., Ltd. (formerly Xian Typical Brother Industries, Co., Ltd.) with Brother Sewing Machine Xian Co., Ltd. in 2010. In the same year, Brother Sewing Machine (Shanghai) Co., Ltd. transferred its business to Brother Machinery Xian Co., Ltd.

*3: Brother Industries (Shenzhen), Ltd. was subject to an absorption-type merger in October 2016, with Brother Technology (Shenzhen) Ltd. as the surviving company.

*4: Brother Industries Technology (M) Sdn. Bhd. terminated its business operations on March 31, 2017.

See 38p Environmental performance data

Toward a Sustainable Society

Environmental Vision 2050: Biodiversity Conservation



Brother Group Environmental Vision 2050

VISION

01
Reduction of CO₂
Emissions

02
Resource Circulation

03
Biodiversity
Conservation

03

The vision aims to minimize the environmental impact of business operations and promote activities to restore and conserve the ecosystem beyond the impact.

Biodiversity Conservation

GOAL

By 2050, the Brother Group will minimize the environmental impact of business operations on the ecosystem and promote activities to restore and conserve the ecosystem beyond the impact.

Mid-term target for FY2030

The Brother Group assesses the environmental impact of its business operations on the ecosystem and the effectiveness of restoration and conservation activities, and works to avoid and reduce the environmental impact on the ecosystem.

The manufacturing and sales facilities of the entire group work on ecosystem restoration and conservation activities on a voluntary basis depending on the situation in each region.

Based on the mid-term target, the Brother Group will continue initiatives to reduce environmental impact on the ecosystem, quantitatively evaluate respective activities, and reliably avoid and reduce environmental impact on the ecosystem.

PDF Brother Group's commitment to Aichi Biodiversity Targets [PDF/312KB]
<https://global.brother/-/media/global/eco/pdf/data/en/biodiversity.ashx>

PDF Cooperative project endorsed by the Japan Committee for United Nations Decade on Biodiversity [PDF/363KB]
<https://global.brother/-/media/global/eco/pdf/data/en/undb-j.ashx>

PDF Nijyu-maru Project registration certificate [PDF/19.5MB]
<https://global.brother/-/media/global/eco/pdf/data/en/nijumaru.ashx>

Toward a Sustainable Society

Environmental Vision 2050: Biodiversity Conservation



Brother Group Environmental Vision 2050

Biodiversity Conservation

Relationship between business activities and biodiversity

The Brother Group is proceeding with the creation of a relationship map between business activities and biodiversity for each product group. This map quantifies the environmental impact caused by the input and output in individual processes of business activities based on product life cycle assessment, and shows the rate of environmental impact in the individual processes. Furthermore, the map lists the following five items as the major impacts that business activities have on the ecosystem: climate change, pollution, biological resource loss, habitat loss, and invasive alien species, and describes the group's ecosystem conservation activities designed to reduce the risk of these impacts.

The Brother Group utilizes these maps in considering effective ecosystem conservation activities and aims to achieve the mid-term target for FY2030 and Environmental Vision 2050.

[Example] Relationship between business and biodiversity for the laser multi-function printer



The ecosystem impact ratio is calculated through LCA. (Life cycle inventory database : IDEA Ver. 2.3)

PDF Relationship between business and biodiversity: Laser multi-function printer [PDF/279KB]
<https://global.brother/-/media/global/eco/pdf/data/en/laser-biodiversity-map.ashx>

PDF Relationship between business and biodiversity: Inkjet Printer [PDF/289KB]
<https://global.brother/-/media/global/eco/pdf/data/en/ink-biodiversity-map.ashx>

Toward a Sustainable Society

Environmental Vision 2050: Biodiversity Conservation



Brother Group Environmental Vision 2050

Biodiversity Conservation

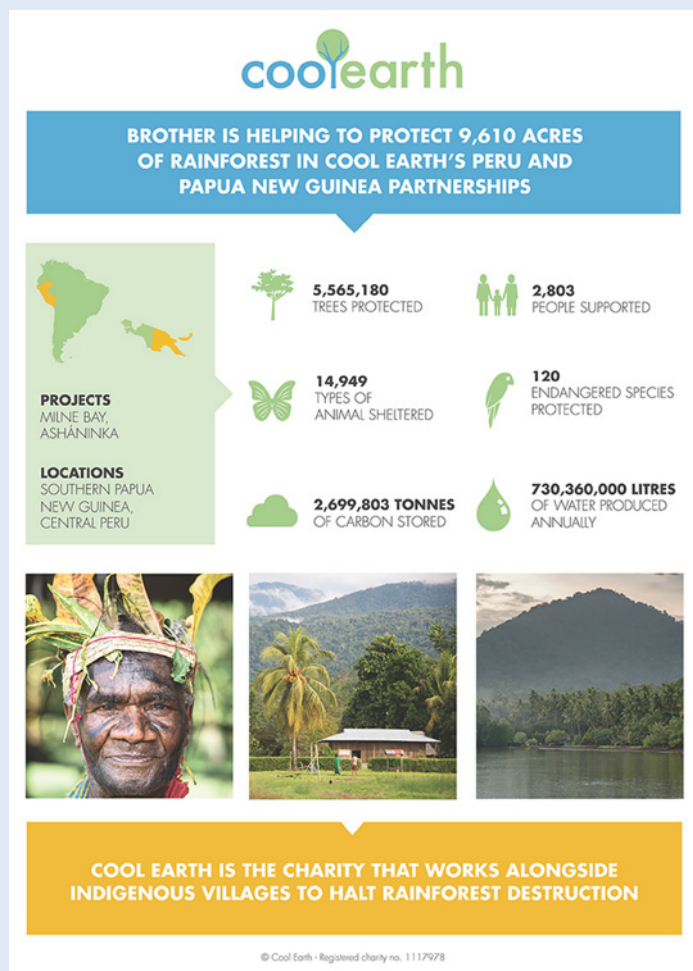
Examples of biodiversity conservation

Biodiversity conservation activity enabling resource recycling to reduce CO2 emissions

Biodiversity conservation activities in which resource circulation leads to CO2 emissions reduction

In 2009, Brother International Europe Ltd. (BIE) concluded a partnership agreement with Cool Earth, a U.K.-based NPO promoting activities to protect the environment in the basin of the Amazon River, and joins with 20 European Brother sales facilities in promoting the Cool Earth Eco-Rewards initiative. This initiative donates funds corresponding to the volume of collected consumables, such as toner and ink cartridges, to Cool Earth.

The fund is being used for activities to protect the tropical rainforests and habitats of endangered species in the Republic of Peru, which Cool Earth supports. Starting in FY2010, the "Click for the Earth" program, a donation feature available on the Brother Group's special website on the environment (brotherearth.com), was incorporated into donation activities for Cool Earth, expanding the scope of support. The funds donated through Click for the Earth are also being utilized for this activity. BIE plans to continue supporting this activity.



PDF Certificate of Donations issued for BIE by "Cool Earth" (July, 2020) [PDF/9.2MB]
<https://global.brother/-/media/global/eco/pdf/data/en/200701-Certificate.ashx>

▶ <https://www.brother.co.uk/recycling/cool-earth>

Toward a Sustainable Society

Environmental Vision 2050: Biodiversity Conservation



Brother Group Environmental Vision 2050

Biodiversity Conservation

Examples of biodiversity conservation

Continuous activities to stop desertification and protect people's lives

Desertification is rapidly advancing in Inner Mongolia Autonomous Region (Inner Mongolia).

In an effort to bring back the grasslands of the past, local Brother employees have joined with OISCA and local residents to plant more than 10,000 tree seedlings. They also dug wells to help water the trees, and succeeded in pumping up groundwater. Slowly but surely, new trees are putting their roots down into the desert.

This project is also suggesting new livelihoods to local residents, such as alternate livestock and sale of traditional Chinese medicines.



See ▶ 38p Environmental performance data

Video contents of brotherearth.com

- ▶ Japan - Brother's Forest Gujo, Project for restoring ecosystem and interacting with the locals
<https://www.brotherearth.com/en/activity/gujo.html>
- ▶ Thailand - Mangrove Reforestation Project
<https://www.brotherearth.com/en/activity/thailand.html>
- ▶ Australia - Project Manta
<https://www.brotherearth.com/en/activity/australia.html>
- ▶ China - Project for Combating Desertification in Inner Mongolia
https://www.brotherearth.com/en/activity/inner_mongolia.html
- ▶ China - A project to improve local environmental awareness in Zhuhai city
<https://www.brotherearth.com/en/activity/zhuhai.html>
- ▶ The Americas - Environment and Education
<https://www.brotherearth.com/en/activity/usa.html>
- ▶ Slovakia - Tatras mountains the reforestation project
<https://www.brotherearth.com/en/activity/slovakia.html>

Toward a Sustainable Society

Pollution Prevention and Chemical Substance Management



Preventing pollution associated with different sources

Under the Brother Group Environmental Policy, we are working to maintain compliance with laws and regulations and prevent environmental pollution in each country and region in which we operate, throughout the life cycle of our products (from product development and design; procurement of parts and materials; and production, packaging, and logistics; to use by customers, collection, and recycling). Furthermore, the Brother Group is committed to continuously reducing our environmental impact, recognizes the risks and opportunities of environmental pollution as follows, and is making efforts to prevent pollution through ISO 14001 activities, etc.

Risks	<ul style="list-style-type: none"> • Increases in environmental impact and loss of biodiversity due to air, water, and soil pollution, etc. caused by leakage and outflow of hazardous chemical substances • Increases in management cost and capital investment due to tightening of environmental laws and regulations inside and outside Japan • Damages stemming from environmental pollution or health damage, and costs incurred for pollution removal • Delay in business operations due to cancellation of sales or modification of land because of discovered soil pollution, and costs incurred to clean the soil • Stoppage or delay in operations due to pollution removal and unplanned additional measures • Social sanctions due to improper handling of incidents of soil pollution or accidents • Reduction in asset value due to soil pollution
Opportunities	<ul style="list-style-type: none"> • Conservation of biodiversity through preventing leakage or outflow of hazardous chemical substances • Permanent pollution prevention and management cost reduction through maintaining a high level of compliance awareness • Societal trust improvement and business opportunity expansion through consistent prevention of soil pollution and accidents • Asset value improvement through consistent prevention of soil pollution and accidents

Toward a Sustainable Society

Pollution Prevention and Chemical Substance Management



Preventing pollution associated with different sources

Managing and reducing chemical substances

Main activities at business sites in Japan

Brother Industries, Ltd. (BIL) participated in a priority review in line with the introduction of the PRTR system by KEIDANREN (Japan Business Federation) in 1998. BIL started to report the amount of chemical substances transferred and released, starting with those used at business sites in FY1997 (April 1, 1997–March 31, 1998). As in previous years, BIL has been making serious efforts toward managing and reporting chemical substances under PRTR Law. In FY2019, BIL reported the balance of chemical substances as follows. Going forward, we will continue with appropriate management and reporting of chemical substances from FY2021 onwards.

PDF Brother Industries, Ltd. FY2015-FY2019 balance of substances subject to PRTR [PDF/294KB]
<https://global.brother/-/media/global/eco/pdf/data/en/prtr.ashx>

Since 2008, BIL has systematically commissioned disposal in accordance with the Act on Special Measures concerning Promotion of Proper Treatment of PCB Wastes. At the end of FY2017, BIL completed the commissioning of disposal of all electrical equipment containing waste PCB oil. The high-concentration PCB waste BIL has disposed of includes 2,468 units, such as capacitors and ballasts for fluorescent lamps; and the low-concentration PCB waste disposed of includes 41 units of end-of-life electrical equipment, such as transformers and capacitors. BIL also disposed of approximately 70 kg of waste PCB oil in FY2019. Contaminated materials such as waste cloth generated during disposal were disposed of by the end of June 2020. Also, because newly discovered inventory of ballasts for fluorescent lamps was found in 2019 in areas such as infrequently used stockrooms under stairwells in older manufacturing facilities, all stockrooms that had not been converted to LEDs were checked. Disposal of all ballasts for fluorescent lamps was completed by the end of June 2020. Furthermore, in April 2020, in response to an announcement by the Ministry of the Environment about the possibility of PCB having been used in non-private use electrical equipment such as elevators, BIL conducted an investigation and reconfirmed that there was no new PCB waste. Regarding fluorocarbons, air conditioning equipment has been managed using the refrigerant management system of the Japan Refrigerants and Environment Conservation Organization (JRECO) since 2015 after the Act on Rational Use and Appropriate Management of Fluorocarbons came into force (April 2015). This system enables centralized and real-time monitoring of the operating statuses of about 1,600 air conditioners at BIL in Japan.

Main activities at manufacturing facilities outside Japan

Manufacturing facilities outside Japan have identified applicable laws and regulations in respective regions within ISO 14001 systems. Management frameworks have also been established to ensure local environmental management. The Brother Green Procurement Management System is in operation with collaboration with suppliers to carefully select parts, materials and sub-materials used in production processes to prevent contamination with harmful chemical substances.

Toward a Sustainable Society

Pollution Prevention and Chemical Substance Management



Preventing pollution associated with different sources

Concept of preventing air, water, and soil pollution

The Brother Group gives high priority to preventing environmental accidents by reviewing target facilities and processes and switching to alternatives that are less likely to cause pollution. When managing existing facilities, activities to prevent pollution include setting and complying with voluntary management targets through ISO 14001.

Preventing air pollution

The Brother Group is striving to prevent air pollution. For example, we have replaced fossil fuel-fired boilers and heaters with electric or city gas-fired boilers and heaters, thus reducing the impact of emissions on the environment. City gas has a low CO₂ emission coefficient.

BIL has abolished heavy oil-fired boilers, which contribute to air pollution, at all of our business sites, including employees' dormitories. Solar water heaters and heat pump equipment have mainly replaced the heavy-oil fired boilers used for employees' dormitories at manufacturing facilities outside Japan. The electricity supply for Brother Technology (Shenzhen) Ltd. (BTSL) in Huanan, China, which had relied on private power generation systems fueled by heavy oil, was replaced by the city's public utility service. Through these initiatives, BIL is reducing the risks of air pollution and global warming caused by CO₂ emissions, as well as soil and underground water contamination.

A catalytic combustor was introduced in 1994 to the coating process installed at Brother's Kariya Manufacturing Facility to reduce volatile organic compounds (VOC) emissions. Exhaust gases are burned to control VOC emissions and prevent odors. Additionally, BIL is switching to materials with lower organic solvent content and reducing their usage. Meanwhile, BTSL set up VOC treatment facilities in 2015 and is implementing measures for reducing emissions from the processes used to form resin products and manufacture printed wiring boards for mounting parts.

Toward a Sustainable Society

Pollution Prevention and Chemical Substance Management



Preventing pollution associated with different sources

Preventing water pollution

BIL is taking the following measures to prevent water pollution:

In FY2011, BIL installed a wastewater treatment facility at the Kariya Manufacturing Facility to treat our wastewater with the latest membrane bioreactor.

Brother Industries Saigon, Ltd. in Vietnam to treat wastewater from the parts cleaning process, Brother Machinery Xian Co., Ltd. in China to treat coating pretreatment wastewater, and Taiwan Brother Industries, Ltd. established wastewater treatment facilities to treat coating pretreatment wastewater. Brother Industries (Vietnam) Ltd., which expanded its manufacturing facility in 2012, upgraded the conventional wastewater treatment facility with a biofilm type facility. The increased treatment capacity has significantly lowered the environmental impact values of wastewater.

At Brother Machinery Vietnam Co., Ltd., which was established in 2013, a wastewater purification plant was introduced. Waste heat generated in the manufacturing facility is utilized to remove the water content of the wastewater from the coating pretreatment process, reducing the volume to sludge. By eliminating the waste fluid, the solid waste is appropriately treated. Other business sites do not have specified activities that cause significant environmental impact. At sites without sewage infrastructure, facilities have been installed to clean sewage and treat the resulting wastewater. These facilities comply with regional standards in accordance with the ISO 14001 facility management procedure.

As part of Brother's preventative measures, we periodically conduct emergency drills for hypothetical incidents such as hazardous wastewater flowing into sewage, public water sources, or permeating into soil. Other specific preventative measures include equipping wastewater treatment facilities with systems which constantly monitor chemical oxygen demand (COD) and installing oil traps for wastewater from cafeterias, to cope with an oil outflow accident. Biochemical oxygen demand (BOD) and n-hexane extracts (an index of the oil content in water, etc.) are regularly measured and monitored.

Toward a Sustainable Society

Pollution Prevention and Chemical Substance Management



Preventing pollution associated with different sources

Preventing soil contamination

In 1997, BIL began investigating the status of soil and groundwater contamination by chlorinated organic compounds and harmful heavy metals used inside our manufacturing facilities in the past. In areas where contamination was found, BIL took actions to prevent the contaminating substances from spreading, implemented purification measures, and also submitted reports to the local governments having jurisdiction over the manufacturing facilities.

Before selling or modifying company-owned land, BIL carries out a soil survey in accordance with legal standards.

In FY2019, BIL carried out soil and underground water surveys in accordance with the Soil Contamination Countermeasures Act, in conjunction with partial dismantling and reconstruction of a manufacturing facility building with seismic isolation functions inside the Hoshizaki Manufacturing Facility and work to construct a machine tool show room inside the Kariya Manufacturing Facility site. As a result, fluorine and its compounds, arsenic and its compounds, hexavalent chromium compounds, along with lead and its compounds were detected in some sections of the Hoshizaki Manufacturing Facility, all exceeding the specified standards. Fluorine and its compounds, exceeding both the soil elution amount standard and the groundwater standard were detected in some sections of the Kariya Manufacturing Facility. None of these contaminating substances affect human bodies if not directly placed in the mouth.

For the fluorine, lead, and their compounds detected at the Hoshizaki Manufacturing Facility, records show that they were used in parts of the surveyed area. However, the amounts of fluorine and its compounds detected were greater than their usage, and lead and its compounds were detected only outside the area where they had been used. Arsenic and its compounds and hexavalent chromium compounds were detected even though there is no record of their usage, and it is difficult to identify the cause. As of July 2020, under the guidance of Nagoya City, BIL started excavation and removal of the contaminated soil, as well as backfilling with clean soil. Groundwater is continuously monitored in an observation well and appropriate actions are taken.

The fluorine and its compounds detected at the Kariya Manufacturing Facility were found outside the area where they had been used. Since there are no records of accidents, leakage, or disposal, it is difficult to identify the cause of the contamination. As of July 2020, under the guidance of Aichi Prefecture, the excavated contaminated soil has been removed and properly disposed of, and the area has been backfilled with clean soil. For groundwater, appropriate steps are being taken, such as setting up an observation well and carrying out monitoring.

Toward a Sustainable Society

Pollution Prevention and Chemical Substance Management



Preventing pollution associated with different sources

Preventing generation of noise, vibration, and offensive odors

BIL takes great care to prevent the generation of noise, vibration, and offensive odors, so as not to cause inconvenience to local communities including homes, schools, and pedestrians.

To prevent the generation of noise and vibration, manufacturing facilities that cause noise or vibration such as chillers and exhaust outlets were installed or relocated as far away from the community as possible into the internal area of the facilities.

To prevent the generation of noise, BTSL (a manufacturing facility outside Japan) set up a noise prevention system at the water treatment facility. Ongoing efforts have been made to prevent noise by using noise-absorbing flexible ducts and replacing exhaust fans with inverter-driven types, in particular. To prevent the generation of offensive odors, filters and/or deodorizing equipment are provided at exhaust outlets at various facilities, including coating facilities. Measures in the coating process also include switching to paints with lower organic solvent content (which gives rise to offensive odor) and reducing the consumption of paints.

For measures to prevent noise and offensive odors, facilities that cause noise and offensive odors are buried underground. For example, an underground type water tank has been employed at the new wastewater treatment facility that was built at the Kariya Manufacturing Facility in FY2011. In particular, noise and offensive odors are measured when facilities are built, and then constantly monitored after construction is complete.

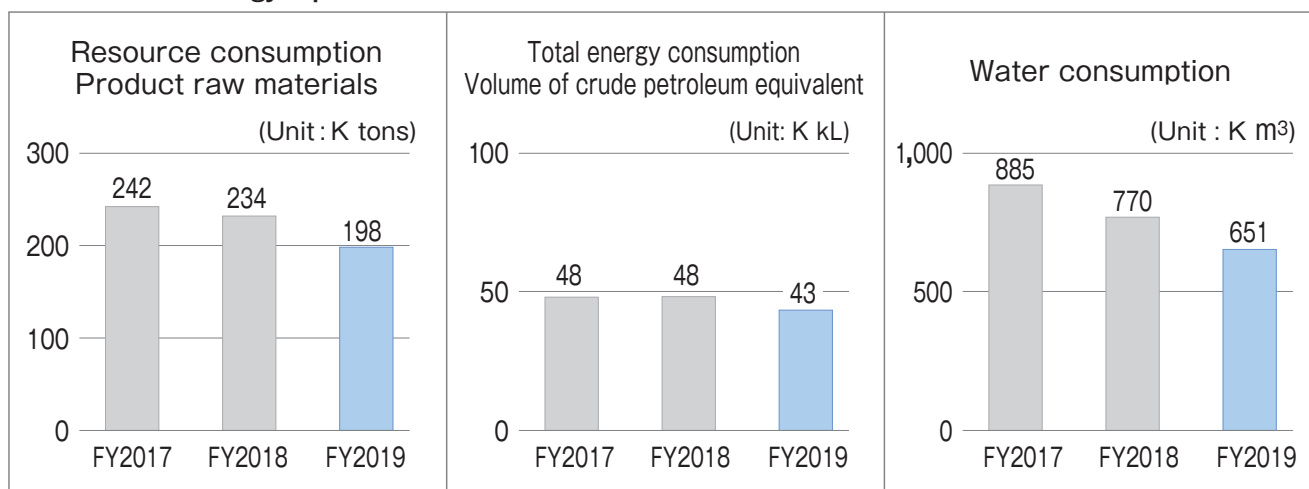
Nissei Corporation implemented further measures to reduce the noise affecting its neighborhood by relocating the die-cast machine within the factory (away from the direction of the housing lots) in FY2016, and stopping and scrapping a large melting furnace to reduce the noise generated when raw materials were charged.

Environmental performance data

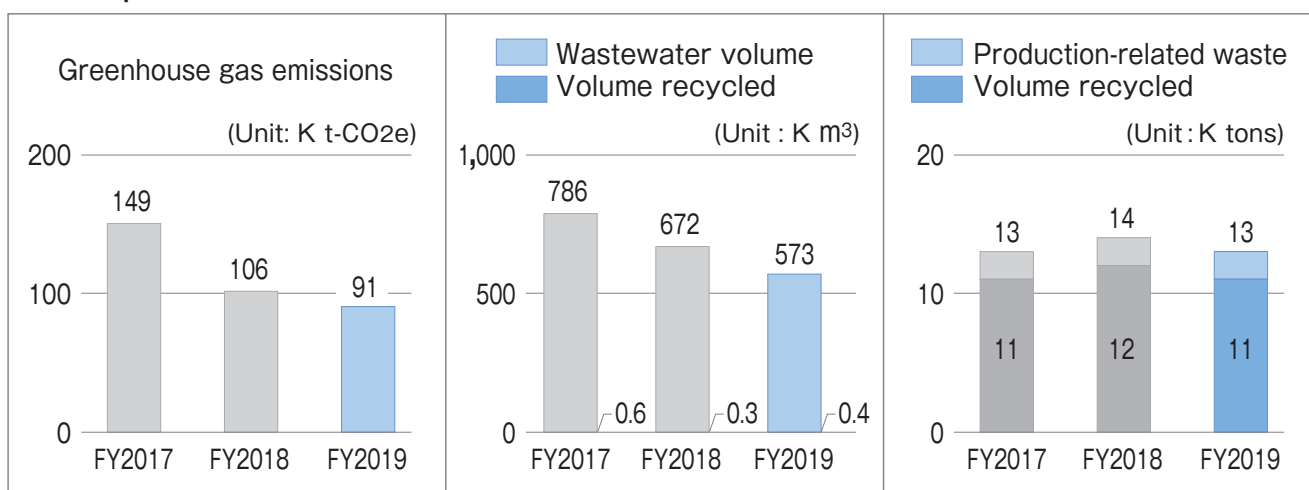
The Brother Group's manufacturing facilities are engaged in processing and assembly to manufacture products. The environmental impacts (including resource consumption, CO₂ emissions, and waste generated) associated with all business operations are quantitatively monitored and summarized to reduce environmental impacts.

Resource utilization and material production/emissions from FY2017 through FY2019

Resource and energy inputs



Material production/emissions



The scope of aggregation was directly related to the product range. For the list of applicable sites, see "Material balance" [PDF/484KB].

PDF Material balance [PDF/484KB]
<https://global.brother/-/media/global/eco/pdf/data/en/material-balance.ashx>

Environmental performance data

Water-related data at main business sites from FY2017 through FY2019

Water intake, wastewater volume, volume of water recycled

		FY2017	FY2018	FY2019
Water intake(m ³)	Clean water	786,318	669,888	550,645
	Industrial water	0	0	0
	Underground water	98,842	99,816	100,557
Wastewater volume(m ³)	River	259,441	223,764	190,703
	Sewer system	526,403	448,096	382,111
	Others	423	422	251
Volume of water recycled(m ³)		552	288	421
Percent of water recycled(%)		0.1	0.0	0.1

The scope of aggregation was directly related to the product range.
For the list of applicable sites, see "Material balance" [PDF/484KB].

Water pollution load*

		FY2017	FY2018	FY2019
Water pollution load(t)	BOD	40.4	19.6	25.0
	COD	68.1	40.4	46.1
	N-hexane extracts	1.2	0.6	0.5
	SS	15.0	44.1	13.8

The scope of aggregation was directly related to the product range.
For the list of applicable sites, see "Material balance" [PDF/484KB].

* :The calculation method was revised.

PDF Material balance [PDF/484KB]
<https://global.brother/-/media/global/eco/pdf/data/en/material-balance.ashx>

Environmental performance data

Scope 1, 2, and 3 greenhouse gas (GHG) emissions according to ISO 14064 from FY2017 through FY2019

Category		CO ₂ emissions in t-CO ₂ equivalent			
		FY2017	FY2018	FY2019	
■ Scope 1: Direct emissions		67,068	21,622	17,363	
■ Scope 2: Indirect emissions from energy use	Location-based	122,220	120,199	107,833	
	Market-based	118,524	122,599	107,285	
■ Scope 3: Other indirect emissions		3,054,418	2,944,798	2,467,045	
C1	Purchased goods and services	1,385,263	1,341,698	1,127,547	
C2	Capital goods	68,872	57,780	56,658	
C3	Fuel- and energy-related activities	11,334	12,247	10,955	
C4	Upstream transportation and distribution	70,416	83,395	80,691	
C5	Waste generated in operations	3,452	2,960	3,680	
C6	Business travel	4,528	4,414	3,663	
C7	Employee commuting	15,689	15,557	14,247	
C8	Upstream leased assets	7,211	6,288	5,176	
C9	Downstream transportation and distribution	16,017	16,534	15,312	
C10	Processing of sold products	-	-	-	
C11	Use of sold products	1,302,511	1,229,988	988,118	
C12	End of life treatment of sold products	167,299	172,155	159,255	
C13	Downstream leased assets	1,729	1,742	1,742	
C14	Franchises	97	39	-	
C15	Investments	-	-	-	
Total of Scopes 1, 2, and 3		Location-based	3,243,706	3,086,619	2,592,241
		Market-based	3,240,010	3,089,019	2,591,693

The sources of emission factors for the location-based method are as follows:

- *: IEA - CO₂ EMISSIONS FROM FUEL COMBUSTION 2018 edition
- *: GHG Protocol - Calculation tools
- *: DEFRA

PDF | History of audit in compliance with ISO 14064-1 [PDF/352KB]
<https://global.brother/-/media/global/eco/pdf/data/en/iso14064.ashx>

Creating Eco-conscious Products

Product Lifecycles—Environmental Considerations



Setting ever higher targets for reducing environmental impact at each stage

The Brother Group is committed to reducing environmental impact at all stages of the life cycle of its products. This is the guiding principle of the group's manufacturing activities.



Since each of the stages are closely interlinked in terms of environmental impact, continuous efforts are required to make incremental improvements and to achieve technological innovation. The Brother Group aims to make such efforts throughout its operations in order to continuously deliver eco-conscious products to customers.

The Brother Group Environmental Action Plan 2018 (2016-2018) set ever-higher targets for each of these stages to accelerate efforts. Specific activities include enhancing eco-conscious design processes and green procurement, continuous reduction in environmental impact at manufacturing facilities (such as CO₂ emissions and water consumption), reduction in CO₂ emissions in logistics (for example, by optimizing packaging), further improvements in energy-saving performance during product use, and enhancement in the reusability, recyclability, and collection system for either products or consumables.

Furthermore, based on the Brother Group Environmental Action Plan 2021 (2019-2021), we are working with our stakeholders to actively promote solutions to the important issues described in the Brother Group Environmental Vision 2050. These issues include creating eco-conscious products, reducing CO₂ emitted throughout the entire value chain, strengthening resource circulation in business activities, reducing business activities' impact on the ecosystem, expanding conservation activities, complying with environmental laws and regulations, and accurately responding to societal demands.

Creating Eco-conscious Products Product Lifecycles—Environmental Considerations



1. Development and design

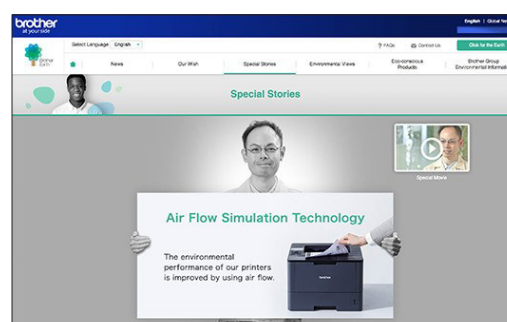
Basic policy

Brother products are developed and designed to:

- comply with laws and regulations of the various countries and regions where sold;
- be compact and lightweight to conserve resources;
- achieve the top levels of energy conservation performance in the industry;
- meet hazardous chemical substance management standards, as defined in the Brother Group Green Procurement Standards;
- be easily recycled at the end of life; and
- meet emission standards (for chemical substances, noise, etc.).

When trying to develop a product that will be eco-conscious throughout its entire life cycle, it is essential to apply these principles at the development and design stage.

For the key criteria listed in the product environmental impact assessments, target values are set at the initial stage of development and design.



► [Brother's activities] Air Flow Simulation Technology

<https://www.brotherearth.com/en/tech/air-flow.html>

Measures

Brother Industries, Ltd. (BIL) conducts product environmental impact assessments at key stages of development and ensures eco-conscious design by addressing the product life cycle from material procurement, production, products use and through to the collection and recycling at the end of life. Also, BIL actively acquires environmental labels in respective countries. For customers in Europe and the U.S. in particular, BIL discloses product information in accordance with the Eco Declaration (ECMA-370).

Creating Eco-conscious Products

Product Lifecycles—Environmental Considerations



1. Development and design

Product environmental impact assessments and Life Cycle Assessment (LCA)

BIL conducts product environmental impact assessments in order to evaluate the impact that products have on the environment. There are 51 assessment items. For key criteria, improvement must be achieved at the product development stage.



Product environmental impact assessment flow

See ▶ 55p The Eco Declaration (ECMA-370)

Key criteria for product environmental impact assessment

- Size and weight
- Parts reuse/recyclability, disassembly/dismantling, avoidance of difficult-to-disassemble structures, integration of resin materials
- Hazards during production or use
- Size, weight and recyclability of packaging materials
- Material labeling, compliance with related laws and regulations and environmental labels

Creating Eco-conscious Products Product Lifecycles—Environmental Considerations



1. Development and design

We conduct an LCA that quantitatively provides numerical data for the "degree of impact on the environment" at each stage of a product's life cycle. Environmental load characteristics and improvement points are identified and the improvement effect is confirmed for each product. Evaluation results are released on the BIL website showing the products that have acquired various environmental labels, as well as on the website managed and operated by the Sustainable Management Promotion Organization under the EcoLeaf Environmental Label.

Furthermore, since 2007, BIL has been promoting the development of eco-conscious products by sharing LCA information with various divisions by posting it on the company's intranet.

As of May 2020, the number of EcoLeaf products registered in the LCA information is 283 with Japanese specifications and 56 with the U.S. specifications (of which 123 with Japanese specifications and 56 with the U.S. specifications were previously registered).

The Brother Group will continue to reduce the environmental impact of products by using LCA techniques.



Products that have acquired the EcoLeaf environmental label

- ▶ Sustainable Management Promotion Organization "EcoLeaf Environmental Labeling Program"
<https://ecoleaf-label.jp/english/>
(Link to the website of "EcoLeaf Environmental Labeling Program.")
- ▶ [Brother's activities] Air Flow Simulation Technology
<https://www.brotherearth.com/en/tech/air-flow.html>

Creating Eco-conscious Products Product Lifecycles—Environmental Considerations



2. Procurement

Basic policy

We check parts and materials that are used to make products, to ensure:

- they do not contain hazardous materials; and
- they are made via an eco-conscious process.

In this way, we give priority to purchasing eco-conscious parts and materials.

Measures

Brother works with suppliers and uses the IT-based Brother Group Green Procurement Management System to manage data on the chemical substances contained in its products and promote the use of alternative parts and materials. This is regularly updated in response to the candidate list substances of very high concern defined within the REACH Regulation.

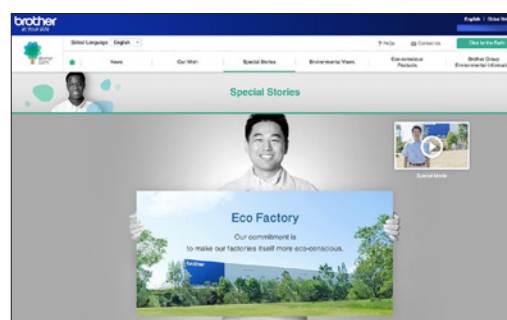
See ▶ 51p Environmental Compliance of Products

3. Production

Basic policy

The Brother Group's manufacturing facilities manufacture products with due consideration given to:

- ensuring efficient use of materials, energy, and water resources, etc.;
- reducing pollutants released into the atmosphere and wastewater;
- preventing the generation of waste; and
- recycling waste generated.



▶ [Brother's activities] Eco Factory
<https://www.brotherearth.com/en/tech/ecofactory.html>

Creating Eco-conscious Products Product Lifecycles—Environmental Considerations



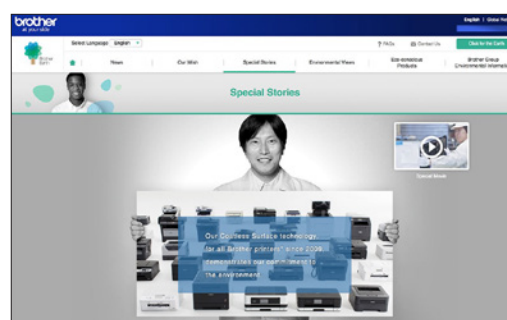
3. Production

Measures

- Electrical power consumption and CO₂ emissions are reduced by ensuring all manufacturing facilities efficiently run equipment.
- During the manufacture of products, the manufacturing facilities are carrying out Zero Waste Emission Activities to eliminate landfill waste.

- ▶ See 12p Environmental Action Plan
- ▶ See 19p Environmental Vision 2050: Reduction of CO₂ Emissions
- ▶ See 24p Environmental Vision 2050: Resource Circulation
- ▶ See 32p Pollution Prevention and Chemical Substance Management

- ▶ [Brother's activities] Eco Factory
<https://www.brotherearth.com/en/tech/ecofactory.html>
- ▶ [Brother's activities] Coatless Surface
<https://www.brotherearth.com/en/tech/coatless.html>



- ▶ [Brother's activities] Coatless Surface
<https://www.brotherearth.com/en/tech/coatless.html>

4. Packaging and logistics

Basic policy

Brother is committed to:

- reducing product packaging and waste where possible; and
- reducing CO₂ emissions in logistics and transportation.

Creating Eco-conscious Products Product Lifecycles—Environmental Considerations



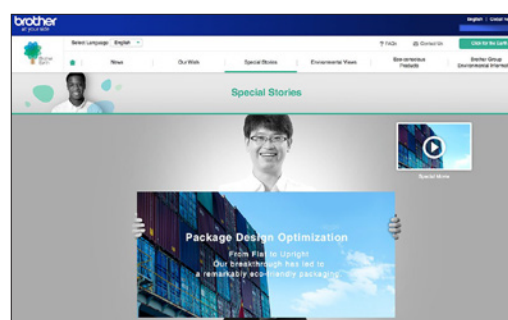
4. Packaging and logistics

Measures

- We are applying simpler and smaller packaging.
- We are combining product categories when arranging shipments to maximize loads.
- We continue to review distribution routes.

See ▶ 19p Environmental Vision 2050: Reduction of CO₂ Emissions

▶ [Brother's activities] Package Design Optimization
<https://www.brotherearth.com/en/tech/package-desing-optimization.html>



▶ [Brother's activities] Package Design Optimization
<https://www.brotherearth.com/en/tech/package-desing-optimization.html>

5. Use

Basic policy

Brother takes the following into consideration regarding customer use of our products:

- they do not consume excessive energy; and
- our products can be used safely, conveniently, and comfortably.

We also endeavor to disclose overall environmental information about products.



Examples of environmental labels and energy-saving standard compliance marks awarded to eco-conscious products

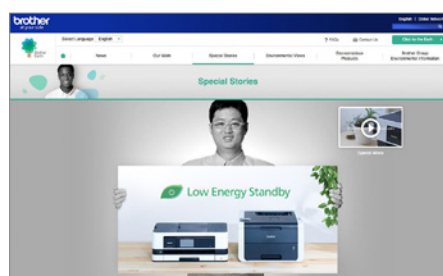
Creating Eco-conscious Products Product Lifecycles—Environmental Considerations



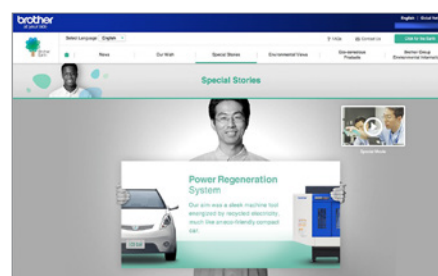
5. Use

Measures

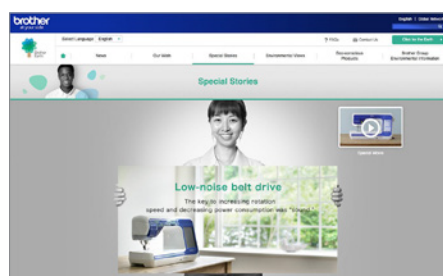
We are strengthening development of eco-conscious products focusing on energy conservation.



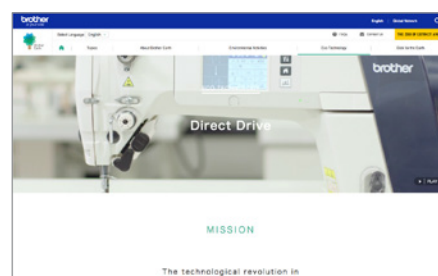
▶ [Brother's activities] Low Energy Standby
<https://www.brotherearth.com/en/tech/standby.html>



▶ [Brother's activities] Power Regeneration System
<https://www.brotherearth.com/en/tech/power-supply-regenerative.html>



▶ [Brother's activities] Low-noise Belt Drive
https://www.brotherearth.com/en/tech/hsm_belt-driving.html



▶ [Brother's activities] Direct Drive
<https://www.brotherearth.com/en/tech/direct-drive.html>

See ▶ 58p Environmental Labels Obtained

- ▶ [Brother's activities] Low Energy Standby
<https://www.brotherearth.com/en/tech/standby.html>
- ▶ [Brother's activities] Power Regeneration System
<https://www.brotherearth.com/en/tech/power-supply-regenerative.html>
- ▶ [Brother's activities] Low-noise Belt Drive
https://www.brotherearth.com/en/tech/hsm_belt-driving.html
- ▶ [Brother's activities] Direct Drive
<https://www.brotherearth.com/en/tech/direct-drive.html>

Creating Eco-conscious Products Product Lifecycles—Environmental Considerations

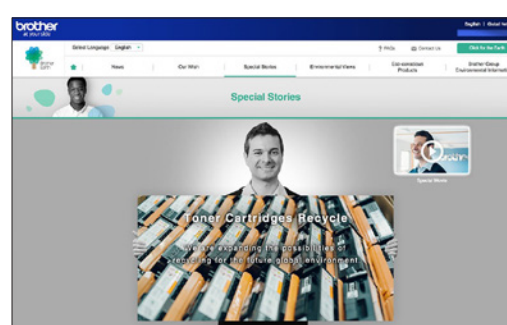


6. Collection and recycling

Basic policy

Brother takes the following into consideration regarding the end of customer use of a product:

- collect and recycle products and consumables at end of life; and
- design products so that they can be easily recycled.



► [Brother's activities] Toner Cartridges Recycling
<https://www.brotherearth.com/en/tech/toner-recycle.html>

Measures

- Ink cartridges consumed in Japan. The Ink Cartridge Return Project is under way in collaboration with printing product manufacturers.
- Toner cartridges, drum units, and label writer tape cassettes consumed in Japan. Brother's own collection and recycling system is in place.
- Participating in the Bellmark campaign through collection of used cartridges, and carrying out environmental conservation activities and education support.
- Toner and ink cartridges consumed outside Japan. Collection and recycling systems in place in more than 40 countries and regions.
- In Europe, products are collected and recycled in accordance with the WEEE Directive. In Australia and New Zealand, products are collected and recycled on a voluntary basis. Regarding corporate customers in Japan, used Brother products (fax machines, printers, and All-in-Ones) are collected and recycled in collaboration with business partners.

Creating Eco-conscious Products Product Lifecycles—Environmental Considerations



6. Collection and recycling

[Brother's activities] Conducting eco activities through the Bellmark campaign (Japan)

Brother Sales, Ltd. joined the Bellmark campaign in order to (i) actively participate in social contribution activities via support for education and (ii) improve the collection rate of used cartridges and promote recycling.



Examples of products in the Bellmark campaign



See ▶ 63p Collection and Recycling

▶ [Brother's activities] Toner Cartridges Recycling
<https://www.brotherearth.com/en/tech/toner-recycle.html>

Creating Eco-conscious Products

Environmental Compliance of Products



Incorporating the global environmental laws and regulations into design technologies and complying with them, with the full collaboration of the supply chain

In recent years, various environmental laws and regulations have been introduced at both the national and regional levels, with the aim of reducing power consumption and raw material usage during the entire life cycle of products, as well as preventing leakage of harmful substances to the environment during the production and disposal phases. The product areas covered and chemical substances regulated by these laws and regulations have been expanding year after year.

As a global company with operations in more than 40 countries and regions, the Brother Group believes that compliance with environmental laws and regulations is the foundation of environmental risk management and product competitiveness. The Brother Group has developed activities in line with the Brother Group Environmental Action Plan 2021(2019—2021), in order to ensure compliance with environmental laws and regulations in all the countries and regions in which we operate and to quickly prevent pollution and reduce environmental impact with high ethical standards. Furthermore, the Brother Group is continuously strengthening our framework for quickly responding to the trends in the regulations on chemical substances and energy-saving regulations on products around the world, and is also striving to offer eco-conscious products before new regulations come into force. These steps enable the entire group to comply with environmental laws and regulations accurately and quickly, leading to enhanced sales and service activities. We are also taking steps to respond to societal demands related to the environment, in addition to environmental laws and regulations.

To deliver environmentally conscious products, environmentally conscious parts and materials must be used. When procuring parts and materials, suppliers are asked to deliver parts and materials in accordance with the Brother Group Green Procurement Standards. Also, the Brother Group conducts audits on suppliers at least every three years to check their management systems and operations related to environmental laws and regulations. Suppliers are required to make necessary improvements and guarantee that the goods that they supply meet the standards.

See ▶ 56p Green Procurement

Creating Eco-conscious Products

Environmental Compliance of Products



Incorporating the global environmental laws and regulations into design technologies and complying with them, with the full collaboration of the supply chain

Compliance with the RoHS Directive in different countries and regions

The RoHS Directive is an EU law that took effect in July 2006, banning the use of hazardous substances in electrical and electronic equipment. In response to this directive, the Brother Group worked with suppliers to build Brother's unique environmental information system, which is used to investigate, avoid, and manage chemical substances contained in products. In line with the subsequent revision, the Brother Group established a system to create technical documents and Declarations of Conformity (DoC) in 2012. Furthermore, we also completed measures to handle the banned substances added in 2019.

Meanwhile, since 2007, many countries and regions including China and South Korea have introduced laws and regulations that reflect the regulations of the RoHS Directive on hazardous substances contained in electrical and electronic equipment, a trend that is expected to continue. The Brother Group is properly ensuring compliance with the laws and regulations in these countries and regions.

Compliance with the REACH Regulation (EU)

REACH is the EU Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals. It came into force in June 2007 for chemical substances that are manufactured or imported. The Brother Group completed registration of chemical substances determined applicable at that time by the June, 2018 deadline. Since then, we have been continuing to check for additional chemical substances requiring registration. In EU countries, there are various obligations related to the SVHC (Content of Substances of Very High Concern) in products. The Brother Group improved the environmental information system to facilitate the investigation of SVHC content. In FY2009 (April 1, 2009-March 31, 2010), the Brother Group set up a system for collecting data from suppliers to improve disclosure of information on SVHC content. In FY2010 (April 1, 2010-March 31, 2011), the Brother Group developed a system for calculating the SVHC content in products and reporting it to the appropriate agency as necessary. Meanwhile, safety data sheets (SDSs) have been translated into EU languages and have been published on the website. In FY2012 (April 1, 2012-March 31, 2013), the SDSs were revised to comply with the revised REACH Regulation.

Creating Eco-conscious Products

Environmental Compliance of Products



Incorporating the global environmental laws and regulations into design technologies and complying with them, with the full collaboration of the supply chain

Compliance with energy-saving regulations in respective countries and regions

The Ecodesign Energy-related Products (ErP) Directive (formerly, the Energy-using Products (EuP) Directive, which came into effect in 2005, and was revised in 2009) was set up as a framework that requires the eco-conscious design of energy-related products sold in the EU to help prevent global warming. The Brother Group uses the data in the environmental information system to calculate life cycle assessment (LCA) results for the entire product life cycle and facilitate eco-conscious design, thereby ensuring quick compliance with the directive.

Energy-saving technologies for applicable products were developed, and relevant procedures for product environmental impact assessments were updated for "imaging equipment (Lot 4)," "standby and off-mode losses (Lot 6)," "external power supply (Lot 7)," and "networked standby losses of energy using products" (Lot 26) (these are categories into which Brother's products fall) to put in place a framework for compliance. A system is in place to ensure compliance.

Countries and regions outside the EU have increasingly introduced laws and regulations requiring eco-conscious design and set energy conservation standards in respective product areas.

The Brother Group has taken quick action to meet these laws and regulations.

Compliance with the WEEE Directive, etc.

The WEEE Directive is an EU law that requires the collection and 3Rs of (Reduce, Reuse and Recycle) of used electrical and electronic equipment. Member countries, distributors, producers, and other entities are required to fulfill the requirements in the design, sorting, collection, and recycling phases. The Brother Group complies with the WEEE Directive using collection and recycling routes in place in respective member countries.

Additionally, WEEE-based laws have been passed in various countries and regions, primarily in Asia. For example, South Korea has passed the Act on the Promotion of Saving and Recycling of Resources, and India, E-Waste (Management) Rules. The Brother Group obtains the latest information through our sales companies in respective countries and regions, as well as manufacturers' associations, and information services, etc., and establishes a collection and recycling system in line with the requirements to ensure legal compliance.

The Brother Group also joins with partners in Australia, New Zealand, and Japan to collect and recycle e-waste on a voluntary basis.

Creating Eco-conscious Products

Environmental Compliance of Products



Incorporating the global environmental laws and regulations into design technologies and complying with them, with the full collaboration of the supply chain

Efforts to prevent illegal logging (EU and Australia)

The EU Timber Regulation and Australia's Illegal Logging Prohibition Act prohibit placing timber products (including paper products) derived from illegally harvested timber on the market. The regulations also require investigations and assessments of suppliers to prevent mixing of illegally harvested timber. The Brother Group collects information from suppliers about inkjet and thermal paper as well as paper packaging materials including product package boxes, and confirms the legality of timber used as a raw material.

Creating Eco-conscious Products

The Eco Declaration (ECMA-370)



Disclosure of product information in accordance with The Eco Declaration (ECMA-370)

Ecma International is an industry association founded in 1961, dedicated to the standardization of information and communication systems.

The Eco Declaration has been created by Ecma International to provide environmental information on known regulations, standards, guidelines and currently accepted practices in an industry standard format.

The Brother Group uses the Eco Declaration (ECMA-370) to disclose the environmental attributes of products designed for Europe, such as printers, All-in-Ones, and scanners.

The Eco Declaration for Europe

Please choose a product group.

Color Laser Printers/All-in-Ones

[WEB](https://global.brother/en/eco/product/declaration#cl_laser) https://global.brother/en/eco/product/declaration#cl_laser

Mono Laser Printers/All-in-Ones

[WEB](https://global.brother/en/eco/product/declaration#mn_laser) https://global.brother/en/eco/product/declaration#mn_laser

Inkjet Printers/All-in-Ones

[WEB](https://global.brother/en/eco/product/declaration#inkjet) <https://global.brother/en/eco/product/declaration#inkjet>

Mobile Printers

[WEB](https://global.brother/en/eco/product/declaration#mobile) <https://global.brother/en/eco/product/declaration#mobile>

Scanners

[WEB](https://global.brother/en/eco/product/declaration#scanner) <https://global.brother/en/eco/product/declaration#scanner>

Label Printers

[WEB](https://global.brother/en/eco/product/declaration#label) <https://global.brother/en/eco/product/declaration#label>

Tape Creator

[WEB](https://global.brother/en/eco/product/declaration#tc) <https://global.brother/en/eco/product/declaration#tc>

Stamp Creator

[WEB](https://global.brother/en/eco/product/declaration#stamp) <https://global.brother/en/eco/product/declaration#stamp>

Creating Eco-conscious Products

Green Procurement



Green procurement policy

At the Brother Group which operates its business globally, safety and environmental impacts are prime considerations at every stage of a product's life cycle, from design, development, manufacturing, customer usage, and disposal, to reuse and recycling, as set out in its basic environmental policy of the Brother Group Environmental Policy. Since 2001, under the Brother Group Global Charter, we have been implementing green procurement activities in order to preferentially procure eco-conscious parts and materials for use in the products we sell. In 2002, to promote manufacturing of eco-conscious products together with our suppliers, we issued the Brother Group Environmental Policy and the Brother Group Green Procurement Standards, which define specific requests to our suppliers. We have been revising these documents based on the trends in laws and regulations.

The Brother Group requests its suppliers to carry out business activities in line with the Brother Group Environmental Policy. In order to ensure their full compliance with the environmental policy as well as laws and regulations, we hold individual information sessions for new prospective suppliers, as a rule. Furthermore, in the event the Brother Group Green Procurement Standards are revised, we inform our suppliers about the revisions, ensure their understanding, and obtain their written consent. In 2018, we held worker-level seminars targeting those in charge of suppliers at each manufacturing facility (more than 30 times throughout the group) to discuss revisions to the Brother Group Green Procurement Standards and modifications to the green procurement system, and also to ensure full understanding of the environmental policy.

Additionally, the Brother Group audits its suppliers at least once every three years to check their management systems and operations related to laws and regulations, and ensure that the goods we purchase satisfy these standards.

Creating Eco-conscious Products

Green Procurement



Brother Group Green Procurement Standards

Quick compliance with global environmental laws and regulations

The Brother Group has updated the Brother Group Green Procurement Standards as necessary to comply with various countries' environmental laws and regulations, which are constantly being extended in scope. The Brother Group Green Procurement Standards classify substances whose use is globally restricted by laws and regulations, etc. as "prohibited chemical substances (Level A)," and we regulate their content in the goods to be delivered to the Brother Group. Additionally, outside prohibited chemical substances (Level A), the controlled substances designated by chemSHERPA, being endorsed by Japan's Ministry of Economy, Trade and Industry, are classified as "controlled chemical substances (Level B)." The content of these substances is controlled in the goods to be delivered to the Brother Group.

Meanwhile, controlled chemical substances specified in chemSHERPA, the system endorsed by the Ministry of Economy, Trade and Industry of Japan, are designated as "controlled chemical substances (Level B)," and their content in goods is managed. To help build society for sustainable development, the Brother Group encourages the suppliers to actively work on the conservation of biological diversity and formulate plans to reduce greenhouse gas emissions.

PDF Green Procurement Standards Japanese (version 9.1) [PDF/435KB]
http://download.brother.com/pub/jp/eco/pdf/gpsj_ver9_1.pdf

PDF Green Procurement Standards English (version 9.1) [PDF/609KB]
http://download.brother.com/pub/com/en/eco/pdf/gpse_ver9_1.pdf

PDF Green Procurement Standards Chinese-simp (version 9.1) [PDF/724KB]
http://download.brother.com/pub/com/cn/eco/pdf/gpsc_ver9_1.pdf

PDF Green Procurement Standards Chinese-trad (version 9.1) [PDF/1MB]
http://download.brother.com/pub/com/cn/eco/pdf/gpstc_ver9_1.pdf

PDF Green Procurement Standards Vietnamese (version 9.12) [PDF/797KB]
<http://download.brother.com/pub/com/vn/eco/pdf/gpsv-ver9-12.pdf>

See ▶ 52p Compliance with the RoHS Directive in different countries and regions

See ▶ 52p Compliance with the REACH Regulation (EU)

▶ Promoting CSR Procurement <https://global.brother/en/csr/stakeholder/partner/csr>

Green Procurement Management System

Using the green procurement system to strictly control the chemical substances in products

The Brother Group introduced the Green Procurement System in 2004, and requests all suppliers to cooperate in investigations into the content of chemical substances in products.

The Brother Group also supported the concept of chemSHERPA, a scheme for sharing information about chemical substances contained in products recommended by the Japanese Ministry of Economy, Trade and Industry. In March 2018, the system was updated to handle data in chemSHERPA format.

Creating Eco-conscious Products Environmental Labels Obtained



Actively acquiring environmental labels from around the world

A yardstick for use when selecting products, and for reducing the overall environmental impact of society

Environmental labels indicate that the selected product shows consideration for the environment, and provide customers helpful information when selecting eco-conscious products. Environmental labels come in three types (Type I, II and III) standardized by the International Organization for Standardization (ISO) or a compliance label that indicates that the product complies with specific performance criteria.

There are various environmental labels in the countries and regions around the world in which the Brother Group operates. The respective labels (which are based on different eco-conscious requirements and standards) are considered to meet stakeholders' environmental requirements and the basic stance of the Brother Group is to actively acquire the labels in the countries and regions where our products are sold.

Under this policy, the Brother Group prioritized the acquisition of specific environmental labels in various countries, including the Blue Angel, Eco Mark, Nordic Swan Ecolabel, EPEAT, and China's Ten Circle Mark, in both the Brother Group Environmental Action Plan 2018 (2016 –2018) and the Brother Group Environmental Action Plan 2021 (2019 –2021), and has been making efforts to that end.

Below are the main environmental labels acquired by Brother products.

Type I labels

Awarded by third-party organizations based on their unique classifications and judgment criteria



www.blauer-engel.de/uz205

The Blue Angel (Germany)

This eco-label is issued by the Federal Environmental Agency, the German Institute for Quality Assurance and Labeling, etc.

In July 2008, the MFC-6490CW and DCP-6690CW were the first inkjet All-in-Ones in the world to be certified according to the ink-jet standard of that time.

In January 2017, the standard was revised and upgraded. Brother has been working to comply with the new standard for both new and current products.

PDF List of products that acquired Blue Angel [PDF/99KB]
<http://download.brother.com/pub/com/en/eco/pdf/blue-angel.pdf>

▶ "The Blue Angel (Germany)"
<http://www.blauer-engel.de/uz205> (Link to the website of "the Blue Angel.")

Creating Eco-conscious Products Environmental Labels Obtained



Actively acquiring environmental labels from around the world



Nordic Swan Ecolabel (five Scandinavian countries)

This eco-label is administered primarily by the Nordic Ecolabelling Board, and is used in five Scandinavian countries (Norway, Sweden, Denmark, Finland, and Iceland).

Twelve Brother models, mainly black-and-white laser printers/All-in-Ones, received this label for the first time in 2009.

PDF List of products that acquired Nordic Swan [PDF/0.4KB]
<http://download.brother.com/pub/com/en/eco/pdf/nordic-swan.pdf>



China Environmental Labeling plan (China)

This government-run eco-label (the Ten Circle Mark) is issued by the China Environmental United Certification Center under the jurisdiction of the State Environmental Protection Administration.

Brother has acquired this label for color laser printers/All-in-Ones and black-and-white laser printers/All-in-Ones.

PDF List of products that acquired Ten Circle Mark [PDF/394KB]
<http://download.brother.com/pub/com/en/eco/pdf/china-environmental.pdf>



Eco Mark (Japan)

This eco-label is issued by the Japan Environment Association. It is awarded to products that minimize environmental impact and aid environmental protection across their entire life cycle (from production to disposal).

PDF List of products that acquired Eco Mark [PDF/538KB]
<http://download.brother.com/pub/com/en/eco/pdf/eco-mark.pdf>



Environmental Choice (New Zealand)

This eco-label was introduced by the national government of New Zealand, and is issued by the New Zealand Ecolabelling Trust.

Brother has acquired this label for color laser printers/All-in-Ones, etc.

Copying machines, printers, fax machines and multifunctional devices. Licence No. 2410083

PDF List of products that acquired Environmental Choice [PDF/97KB]
<http://download.brother.com/pub/com/en/eco/pdf/environmental-choice.pdf>

Creating Eco-conscious Products Environmental Labels Obtained



Actively acquiring environmental labels from around the world



Green Mark (Taiwan)

This eco-label was introduced in Taiwan by the Environmental Protection Administration, and is issued by the Environment and Development Foundation.

Brother has acquired this label for color laser printers/All-in-Ones, black-and-white laser printers/All-in-Ones, and consumables.

PDF List of products that acquired Green Mark [PDF/394KB]
<http://download.brother.com/pub/com/en/eco/pdf/green-mark.pdf>



Korea Eco-label (South Korea)

This eco-label is issued by the Korea Environment Industry & Technology Institute that was established in accordance with the Development of and Support for Environmental Technology Act.

Brother has acquired this label for laser/inkjet All-in-Ones.

PDF List of products that acquired Korea Eco-label [PDF/389KB]
<http://download.brother.com/pub/com/en/eco/pdf/korea-eco-label.pdf>

Type II labels

Self-declared labels by businesses



Brother Green Label (Japan)

In October 2001, Brother Industries, Ltd. (BIL) established voluntary environmental standards for products and created the Brother Green Label to recognize products that satisfied related certification standards.

PDF List of products that acquired Brother Green Label [PDF/355KB]
<http://download.brother.com/pub/com/en/eco/pdf/brother-green-label.pdf>

Creating Eco-conscious Products Environmental Labels Obtained



Actively acquiring environmental labels from around the world

Type III labels

Awarded to products whose environmental load is shown quantitatively by LCA (Life Cycle Assessment)



System certification
PA-590000-AI-03

EcoLeaf (Japan)

This eco-label is awarded to products that disclose quantitative information about their environmental characteristics. It is managed and issued by the Sustainable Management Promotion Organization (SuMPO) of Japan.

Having begun its efforts in 2002, BIL has received System Certification* for printers and facsimiles. BIL is currently working on acquiring the EcoLeaf label for main Brother products. (EcoLeaf has been merged with the CFP Communication Program and is being managed as the EcoLeaf Environmental Labeling Program. In 2019, EcoLeaf's management organization split off from the Japan Environmental Management Association for Industry to become independent SuMPO.)

*: Examines whether the system for calculation, verification, and disclosure/application built inside a business that wishes to acquire the label meets the requirements, and issues certification if it does.

▶ Sustainable Management Promotion Organization "EcoLeaf Environmental Labeling Program"
<https://ecoleaf-label.jp/english/>
(Link to the website of "EcoLeaf Environmental Labeling Program.")

Conformance label



International ENERGY STAR Program (the U.S., Japan, Canada, and Taiwan)

This is an international energy saving program for office equipment. Its logo is awarded to products that meet the energy-saving standards.

PDF List of products that qualify the standards of International ENERGY STAR program [PDF/274KB]
<http://download.brother.com/pub/com/en/eco/pdf/energy-star.pdf>



Energy Conservation Certification (Energy saving label) (China)

This eco-label is from China. It recognizes products for their energy-saving performance.

Creating Eco-conscious Products Environmental Labels Obtained



Actively acquiring environmental labels from around the world

Environmental assessment system



EPEAT (in the U.S.)

This is an environmental rating system for electronic products that is managed and administered by a NPO, the Green Electronics Council.

Compliance evaluations* of the entire product life cycle are performed using the EPEAT criteria that are based on current environmental laws and regulations. EPEAT criteria consist of required and optional ones; products are ranked Gold, Silver, or Bronze depending on the level of conformity with the optional criteria.

In December 2017, nine models including MFC-L2750DWXL became the first laser products to be registered as Silver products.

*: Judgments are based on laws and regulations, etc. in respective countries and regions. Thus, the same product may have different ranks

PDF List of EPEAT-compliant products [PDF/98KB]
<http://download.brother.com/pub/com/en/eco/pdf/epeat.pdf>

Green procurement laws



Products complying with the Act on Promoting Green Procurement (Japan)

In April 2001, the Act on Promoting Green Procurement came into effect.

This law requires that national governmental organizations and independent administrative institutions purchase green products, and that local public organizations and private businesses as well as individuals try to do the same.

By affixing our own eco-label to Brother products that meet the standard, BIL is promoting environmental activities to customers.

Creating Eco-conscious Products

Collection and Recycling



Efforts to establish a sound material-cycle society

With the "end of life" of products in mind, the Brother Group has been working to (i) increase reusability and recyclability of products and consumables and (ii) build recycling systems in accordance with laws and regulations in respective countries.

The Brother Group's collection and recycling efforts

Brother International Europe Ltd.

In Europe, the portal site for recycling consumables and products provides information about how to return used toner cartridges, drum units, ink cartridges, and products and ask for collection boxes, etc. and gives details of recycling methods available in a total of 28 countries.

Regarding collecting and recycling products, Brother utilizes the collection and recycling channels in place in respective countries, in compliance with the WEEE Directive.

- ▶ Portal site for recycling (Europe)
<https://www.brother.eu/recycling>

Brother Industries (U.K.) Ltd., Brother Industries (Slovakia) s.r.o.

Brother Industries (U.K.) Ltd.'s Recycling Technology Centre is the Brother Group's core facility that recycles toner cartridges and designs and develops recyclable toner cartridges in collaboration with facilities in the United States and Japan. A project is underway to build a system for automating the recycling process. With support from the Recycling Technology Centre, Brother Industries (Slovakia) s.r.o. (BISK) recycles Brother's toner cartridges that are sold primarily in Europe. BISK's accomplishments and development expertise are shared in Japan, the United States, and other countries to help raise the technological standards of the Brother Group. As a result of continuous, untiring efforts to improve recycling technologies, the Brother Group as a whole remanufactured 29.8 million cartridges between the start of recycling in 2004 and the end of March 2020.

- ▶ [Brother's activities] Toner Cartridges Recycling
<https://www.brotherearth.com/en/tech/toner-recycle.html>



- ▶ [Brother's activities] Toner Cartridges Recycling
<https://www.brotherearth.com/en/tech/toner-recycle.html>

Creating Eco-conscious Products Collection and Recycling



Efforts to establish a sound material-cycle society

Brother International Corporation (U.S.A.)

In the United States, the project is undertaken by collection and recycling contractors. The system is administered in accordance with state and federal laws.

The website of Brother International Corporation (U.S.A.) explains how to return used toner cartridges, drum units, ink cartridges, and tape cassettes.

Even in Canada used toner cartridges are collected via local sales facilities.

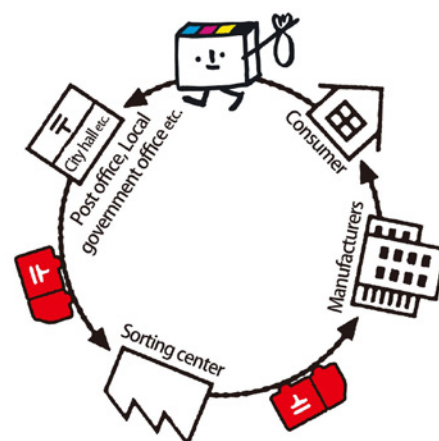
Brother Sales, Ltd.

In Japan, printing product manufacturers and sellers have collection boxes at retail outlets to collect used ink cartridges. In order to further improve the collection rate, the Brother Group along with other printing product manufacturers and sellers launched an Ink Cartridge Return Project with post offices in January 2007.

Collection began throughout Japan in 2008. For details, see "Ink Cartridge Return Project".

In collaboration with business partners, Brother Sales, Ltd. collects Brother products (fax machines, printers, and All-in-Ones for businesses), and Brother Industries, Ltd. recycles them.

For details, see "Recycling Used Consumables" or "Corporate Used Products".



Recycling process of Ink Cartridge Return Project

▶ Ink Cartridge Return Project

<http://www.inksatogaeri.jp>

(Link to the website of "Ink Cartridge Return Project." This website is available only in Japanese.)

Creating Eco-conscious Products Collection and Recycling



Efforts to establish a sound material-cycle society

Mie Brother Precision Industries, Ltd.

Mie Brother Precision Industries, Ltd. started to work on refurbishing toner cartridges for monochrome laser printers in FY2009 (April 1, 2009-March 31, 2010) based on recycling expertise gained in Europe.

Collected used toner cartridges undergo sorting, disassembly, cleaning, and parts replacement for reuse. To further reduce environmental impact, the company shares information with recycling facilities in Europe and the Americas and is continually improving the methods of refurbishing toner cartridges. Collected used color toner cartridges are delivered to Brother Industries (U.K.) Ltd. for recycling.



Monochrome toner cartridges

Brother International (Aust.) Pty. Ltd.

Brother International (Aust.) Pty. Ltd. is a founding member of the Cartridges 4 Planet Ark (C4PA) program to recycle printer toner cartridges. Since its founding, this program has collected and recycled a total of 46.7 million printer cartridges (as of the end of August 2020)

As a member of Electronic Product Stewardship Australasia (EPSA), the company is also participating in Australia's National Television and Computer Recycling Scheme to recycle printers.

Brother International (NZ) Ltd.

Brother International (NZ) Ltd. is working with an experienced recycling contractor to collect and recycle used consumables (e.g. ink and toner cartridges, drum units) and printers. In FY2019 (April 1, 2019-March 31, 2020), 110,000 consumables and printers/All-in-Ones weighing a total of 41 tons were collected.

Reducing CO₂ emissions through closed-loop recycling of toner cartridges

Collected end-of-life toner cartridges are remanufactured at the Brother Group's recycling sites into toner cartridges having the same quality as brand new products, and are delivered to customers again.

Through this method of closed-loop recycling of its products, the Brother Group is contributing to the effective utilization of natural resources through waste reduction, as well as to the reduction of CO₂ emissions.

In FY2019, the Brother Group as a whole remanufactured 2.77 million toner cartridges, reducing CO₂ emissions by 5,850 tons.