Brother Industries, Ltd. - Climate Change 2020

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

The Brother Group started by providing repair services for sewing machines in 1908. Since then, we have been growing by focusing on our own technology development, promoting the diversification of our businesses through applying accumulated core technologies, and continuing to cultivate new markets consistently. The headquarters of Brother group, "Brother Industries, Ltd" is located in Japan. Paid-in Capital is 19,209 million yen (As of March 31, 2020) and the sales revenue is 637,259 million yen (fiscal year ending March 31, 2020). The Brother group delivers products and services to customers all over the world with manufacturing facilities and sales facilities in 40 or more countries and regions of the world. The consolidated number of employees is 37,697 / and the non-consolidated number is 3,800 (as of March 31, 2020). We offer products and services with Brother expertise in a wide range of fields such as "communications and printing equipment," "home sewing machines," "industrial sewing machines/machine tools/industrial parts, "Coding & Marking Equipment, Digital Printing Equipment" and "online karaoke/content-delivery systems." In 2018, the Brother Group established the Brother Group Environmental Vision 2050. This environmental vision recognizes environmental issues in society such as climate change, resource depletion, environmental pollution, and destruction of the ecosystem as business risks for the Brother Group and clearly states the Brother Group's continuous commitment to solving these issues over the long term. 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 and it is subject to audit based on ISO 14064 that provides guidelines for measuring and verifying emissions of greenhouse gases (GHGs). We expand the environmental understanding and awareness for all employees and stakeholders by conducting activities such as environmental education and the building of community relationships. We actively disclose our environmental efforts to our customers, local communities, and other interested parties to further foster understanding. As part of our commitment to continuous environmental improvement, as of Apr 1, 2019, 88% of the Brother Group's facilities has received ISO14001 certification.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Reporting year	April 1 2019	March 31 2020	No	<Not Applicable>

C0.3

(C0.3) Select the countries/areas for which you will be supplying data.

Argentina
Australia
Austria
Belgium
Brazil
Bulgaria
Canada
Chile
China
China, Hong Kong Special Administrative Region
Czechia
Denmark
Finland
France
Germany
Hungary
India
Indonesia
Ireland
Italy
Japan
Malaysia
Mexico
Netherlands
New Zealand
Norway
Peru
Philippines
Poland
Portugal
Republic of Korea
Romania
Russian Federation
Singapore
Slovakia
South Africa
Spain
Sweden
Switzerland
Taiwan, Greater China
Thailand
Turkey
United Arab Emirates
United Kingdom of Great Britain and Northern Ireland
United States of America
Viet Nam

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

JPY

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.

Operational control

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Chief Operating Officer (COO)	The COO is a Managing Executive Officer overseeing the environmental programs at Brother. This position is the chief executive of the “Law, Environment & General Affairs Department” and responsible as chairman of the Brother Environmental Committee. The COO has the authority to settle single-year environmental objectives and medium-term environmental action plans. The Mid-term Environmental Action Plan includes targets for climate change, resource recycling and biodiversity.

C1.1b

(C1.1b) Provide further details on the board’s oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Scope of board-level oversight	Please explain
Scheduled – all meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Setting performance objectives Monitoring implementation and performance of objectives Monitoring and overseeing progress against goals and targets for addressing climate-related issues	<Not Applicable>	The risk management committee of BIL (BROTHER INDUSTRIES, LTD.) as chaired by the president, manages the activities of the environmental committee. This committee develops the strategy, annual plan (Brother Medium Term Environmental Action Plan) and tracks the performance of the climate change programs as well as evaluates risks associated with the programs. At the Board of Directors meetings, he is responsible for reporting and problem solving as the person in charge of environmental issues.

C1.2

(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Reporting line	Responsibility	Coverage of responsibility	Frequency of reporting to the board on climate-related issues
Chief Operating Officer (COO)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Half-yearly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

The COO is a Managing Executive Officer overseeing the environmental programs at Brother. This position is the chief executive of the “Law, Environment and General Affairs Department” and responsible as chairman of the environmental committee. This position provides advice and requests the data from all facilities necessary to evaluate climate change in Brother. The COO makes the final decisions regarding operational changes that can affect the performance of facilities in achieving the groups Environmental Target 2030 objectives.

The environmental committee is top management organization in Brother group regarding environmental issues and responsibility for managing our environmental policy, plans and major environmental issues including climate change.

Law, Environment & General Affairs Department is collecting all environmental risks and opportunities from group-wide and reports the information to Environmental committee half-yearly.

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	We provide incentives for achievement of KPI and voluntary efforts in each department and subsidiary.

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

Entitled to incentive	Type of incentive	Activity inventivized	Comment
Executive officer	Non-monetary reward	Emissions reduction target	A President Award will be presented from the President. CO2 emissions reduction is one of the evaluation indexes. This year it was based on the following Meeting CO2 Emission reduction targets of the Environmental Action Plan: The targets for manufacturing sites administered by executive officers include reducing CO2 emissions by 1% per annum (per unit of sales).
All employees	Monetary reward	Emissions reduction target Energy reduction project	Bonus on the achievement of targets will be presented. This year it was based on the following yearly review of environmental performance against specific objectives in the Environmental Action Plan: Reducing CO2 emissions by 1% per annum (per unit of sales)
All employees	Non-monetary reward	Emissions reduction target Energy reduction project Energy reduction target Efficiency project Efficiency target Behavior change related indicator	Annually, all Brother offices globally have opportunities to complete an application for the internal Brother Group award for environmental performance called the "5R Award". The "5R Award" recognizes efforts by group companies and departments in five different categories. This includes activities at business sites (such as manufacturing facilities and offices), eco-consciousness specs in products, environmental activities conducted in and outside the company (such as employee awareness programs or biodiversity activities conducted for ecosystems, natural communities and habitats among their local communities). From 1999, the Brother Group has been conducting environmental activities based on the "5Rs," which adds "Refuse" and "Reform" to the "Reduce," "Reuse" and "Recycle" 3Rs as the basis for establishing a sound material-cycle society. In particular, "Reform" is Brother's original idea that creates value by incorporating innovative approaches and ideas for changing the state of waste.
All employees	Monetary reward	Behavior change related indicator	Brother Group promotes and provides Employees with the "Brother Eco Point Program". This program awards points to employees for eco-conscious actions by employees such as reuse of cloth bags instead of plastic shopping bags, saving electricity and water, using sustainable alternative travel by to destinations such as walking, bicycle or public transportation, and participating in local clean-up activities. Monetary rewards throughout the year are provided to boost the program, and annual recognition to highest point participants and locations are commended and rewarded. The eco-points collected here will support the funding of biodiversity conservation activities carried out at various locations around the world every year.

C2. Risks and opportunities

C2.1

(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?

Yes

C2.1a

(C2.1a) How does your organization define short-, medium- and long-term time horizons?

	From (years)	To (years)	Comment
Short-term	0	3	Brother Group Mid-term Environmental Action Plan (2019-21), and the annual plan that developed it
Medium-term	4	10	Brother Group Environmental Mid-term target for FY2030
Long-term	11	30	Brother Group Environmental Vision 2050

C2.1b

(C2.1b) How does your organization define substantive financial or strategic impact on your business?

To identify risks related to climate, the Brother group calculates the CO2 emissions of Scope1, 2 and 3, which is the greenhouse gas emissions of the entire value chain every year. Based on the result of the calculation, we identify the process with high CO2 emissions that are considered business risk. Treating CO2 emissions as a risk related to climate change, we set the CO2 reduction target for fiscal 2030 in line with the goal for the Paris Agreement, a global agreement. This goal is certified as Science Based Targets by SBTi. Aiming at achieving this goal, short-term reduction targets are formulated in the environmental action plan of 3-5 years, and progress management is carried out at the environmental committee which board members participate. We are currently studying how to assess the financial impact to our company due to the risk of climate change.

C2.2

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered
Upstream

Risk management process
Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment
Annually

Time horizon(s) covered
Medium-term

Description of process
Scope 3 GHG emissions from purchased goods and services, which is the GHG emissions upstream of the value chain, accounts for 43% of the Brother Group's total emissions, and it is subject to the reduction by the Brother Group's CO2 reduction target in FY 2030. Since this contribution rate of GHG emissions to reduction targets is high, there is a risk that this delayed reduction will result in failure to reach the target. Therefore, this GHG emissions are an important component of climate change related risk.

Value chain stage(s) covered
Downstream

Risk management process
Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment
Annually

Time horizon(s) covered
Medium-term

Description of process
The Scope 3 GHG emissions from use of sold products, which is the GHG emissions downstream of the value chain, accounts for 40% of the Brother Group's total emissions, which is the target of the Brother Group's CO2 reduction target in FY 2030. Since this contribution rate of GHG emissions to reduction targets is high, there is a risk that this delayed reduction will result in failure to reach the target. Therefore, this GHG emissions are an important component of climate change related risk.

Value chain stage(s) covered
Direct operations

Risk management process
Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment
Annually

Time horizon(s) covered
Short-term
Medium-term

Description of process
(Company level) In Brother, the Environment Committee (Environmental Management Promotion Committee), which is the decision-making body for environmental problems, decides appropriate measures and measures that can be taken with respect to important aspects related to global climate change and environmental laws and regulations. The Environmental Committee is also responsible to collect data and report against the targets outlined in the Environmental Action Plan. We will identify key issues at that committee and set ambitious targets for climate change, environmental laws and regulations. In addition, though the Environmental Issues Review Committee, we draw up and review specific policies and measures for solving environmental issues related to products on monthly basis. The Environmental Committee then presents the final report to the president and board members of the Risk Management Committee.

Value chain stage(s) covered
Direct operations

Risk management process
Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment
Annually

Time horizon(s) covered
Short-term
Medium-term

Description of process
(Asset level) The Risk Management Committee will cooperate with the environmental management personnel (EMR) in each country/region at the global level. The committee reports risks and opportunities in tackling environmental activities in accordance with the Brother Group's environmental action plan. Prior to the committee, from the management planning department every year, risk assessment sheets are sent to the bases of each country/region. This assessment sheet contains concerns about climate change, environmental law concerns and problems at present, presence of accidents and incidents, compliance with environmental law, and so on. The environmental department reviews this assessment sheet, extracts risks and opportunities, and reports it to the committee. In addition, the environmental department will conduct hearings directly to the sites as necessary.

C2.2a

(C2.2a) Which risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	In Japan, Vietnam and China where main factories producing our products are located, there are regulations that oblige to reduce energy consumption, so penalties will be given by the government if we cannot comply. Therefore, current legal regulations must always be considered in assessing the risk of the current climate change.
Emerging regulation	Relevant, always included	In the Asian region where our products are located, the environmental regulations including the emission of greenhouse gases are strengthened. Furthermore, when regulations are strengthened and there is an influence on the operation of the production factory, since financial influence is significant, we always gaze at the latest laws and regulations trends according to our environmental management system trends.
Technology	Relevant, always included	To achieve the goal of reducing the CO2 emissions of Scope 1, 2 and Scope 3 set by the Brother group in FY 2030, we must always incorporate new technologies and do not use it for energy saving and resource conservation of facilities and products I believe it will not. Delay in the introduction of new technologies has the risk of relative environmental performance deterioration in the market and the risk of not reaching the CO2 reduction goal, so we must always consider the trend of new technology.
Legal	Relevant, always included	In the Asian region where our products are located, the environmental regulations including the emission of greenhouse gases are strengthened. Furthermore, when regulations are strengthened and there is an influence on the operation of the production factory, since financial influence is significant, we always gaze at the latest laws and regulations trends according to our environmental management system trends.
Market	Relevant, always included	We believe that demand for low-carbon products will increase in the market due to the worldwide interest in climate change. Therefore, we constantly monitor the level of low-carbon products required by the market. To create low-carbon products, the Brother group is committed to the following objectives: Reduce absolute Scope 3 GHG emissions from purchased goods and services, use of sold products and end-of-life treatment of sold products 30% by FY 2030 from a FY 2015 base-year.
Reputation	Relevant, always included	Based on the agreement of the Paris Agreement, it is expected that demand for low carbonization to companies will increase worldwide. Therefore, the lack of commitment to low carbon can lead to a loss of stakeholder reputation, and we believe there is a risk that the Brother Group's brand will decrease. As one of the purposes of avoiding this reputation risk, the Brother group has set CO2 reduction targets for FY 2030 and clarifies the attitude to tackle low carbon.
Acute physical	Relevant, always included	To minimize the impact on operations due to intense weather such as typhoons and guerrilla torrential rains and the intensification of floods, we have bases in countries and regions with low risk in our production, procurement from the supply chain, transportation of parts and products.
Chronic physical	Relevant, always included	We are based in countries and regions with low risk of survival due to long-term changes in climate and rainfall patterns that cause sea level rise, drought and heat waves.

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Downstream

Risk type & Primary climate-related risk driver

Emerging regulation	Mandates on and regulation of existing products and services

Primary potential financial impact

Increased indirect (operating) costs

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

Brother has formed a regulation team within the department responsible for the environment and is watching product environmental regulations globally. Employees can view the information they grasp on the company intranet. Depending on the degree of urgency, we will use instructions and environmental committees to give instructions.

Time horizon

Short-term

Likelihood

Very likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

6000000000

Potential financial impact figure – maximum (currency)

60000000000

Explanation of financial impact figure

Products must comply with global environmental regulations. Otherwise our products cannot be put on the market (100% of sales). If non-compliant products are placed on the market, we could face fines and product recall. The estimated financial impact of this would be about 1-10% reduction of our sales revenue in FY 2019.

Cost of response to risk
328000000

Description of response and explanation of cost calculation
Environmental management systems are designed to meet current regulations and respond quickly to new regulations/legislation through Green Procurement and Product Life Cycle Assessments to ensure compliance. We lobby through JBMIA and other industry associations. We have dedicated people at major sales companies and work with consultants for lobbying.

Comment
The costs of management are included in management activity costs in environmental accounting to meet various laws and regulations. Therefore, we quoted its management costs from environmental accounting in FY 2019.

Identifier
Risk 2

Where in the value chain does the risk driver occur?
Downstream

Risk type & Primary climate-related risk driver

Emerging regulation	Mandates on and regulation of existing products and services

Primary potential financial impact
Decreased revenues due to reduced demand for products and services

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
Compliance with new regulations and standards requires a budget for re-designing or re-engineering. Potential to lose sale opportunities for our products. It is assumed that there is a high-risk tendency especially for communication and printing equipment.

Time horizon
Short-term

Likelihood
Very likely

Magnitude of impact
High

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
20000000000

Potential financial impact figure – maximum (currency)
30000000000

Explanation of financial impact figure
Compliance with product labelling (Energy Star, Blue Angel, etc.) expresses our printing products strong advantage in the market. Labelled products make up about 50-70% of our sales and our profit. The loss of these labelled products would significantly impact on sales. We estimated the impact from the sales of communications and printing equipment in FY2019.

Cost of response to risk
137000000

Description of response and explanation of cost calculation
The Brother Group monitors stake holder demands, actively participates through Brother subject matter experts and designs products to environmental label requirements. In addition, Brother has set specific targets in the Environmental Action Plan to acquire specific environmental labels in respective countries including Blue Angel, Eco Mark, Nordic Swan, EPEAT, and China's Ten Circle Mark, and efforts have been accelerated to fulfil the targets.

Comment
The costs for the development of eco conscious products and technologies are included in the R&D costs of environmental accounting. Therefore, we quoted its management costs from environmental accounting in FY 2019.

Identifier
Risk 3

Where in the value chain does the risk driver occur?
Direct operations

Risk type & Primary climate-related risk driver

Emerging regulation	Carbon pricing mechanisms

Primary potential financial impact
Increased indirect (operating) costs

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
If the Japanese government sets targets based on the framework of the Paris Agreement and allocates these to each industry as well as individual companies, it may impact Brother's targets for CO2 emissions in domestic locations and the energy efficiency indicator in products. The estimated financial impact of this would be about 1-10% reduction of our sales revenue in FY 2019.

Time horizon
Medium-term

Likelihood
Likely

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
6000000000

Potential financial impact figure – maximum (currency)
60000000000

Explanation of financial impact figure
Bother has been promoting improvements in both energy efficiency in each location and in products. However, if industry and individual companies are pressured to raise our targets, our cost for investment, operations management and developing may increase. We estimate that if Brother's head office reduces CO2 emissions domestically by 1% compared to the previous year, it will be covered by capital investment related to energy conservation.

Cost of response to risk
328000000

Description of response and explanation of cost calculation
Brother continues to establish new systems in new locations along with development plans in products. We have started Scope3 CO2 emissions analysis in addition to existing Scope1 and 2 emissions and can see and now focus on Category11 - emissions from use of sold products as one of the major emissions in Scope3. Towards this, to reduce CO2 emissions, we are considering the necessity to create products that can contribute to CO2 emission reduction through things such as making the product enable offset emissions during the use of product.

Comment
The costs of management are included in management activity costs in environmental accounting to meet various laws and regulations. Therefore, we quoted its management costs from environmental accounting in FY 2019.

Identifier
Risk 4

Where in the value chain does the risk driver occur?
Direct operations

Risk type & Primary climate-related risk driver

Chronic physical	Rising mean temperatures

Primary potential financial impact
Increased direct costs

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
The predicted impact of an increase in the mean average temperature will affect our facilities located in regions where higher temperatures are experienced as the norm. This will result in increased demand in cooling systems and electrical usage. An increase in electrical usage costs for buildings in those regions and countries where weather changes resulting in higher or lower than average temperatures for an extended period will cause higher energy usage (Air Conditioning).

Time horizon
Medium-term

Likelihood
Very likely

Magnitude of impact
Medium-high

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
50000000

Potential financial impact figure – maximum (currency)
100000000

Explanation of financial impact figure
This is the maximum estimated value of the electricity usage of the air conditioner due to domestic Brother's base, which is 1 degree higher in the summer and 1 degree in the winter than in the normal year. If the average summer temperature may be one to two degrees higher, we estimate that the costs associated with the plant's energy consumption will be this amount.

Cost of response to risk
266000000

Description of response and explanation of cost calculation
Monitoring energy consumption at each facility on monthly basis. We are setting goals for each facility to reduce energy consumption to offset the predicted impact of climate change. Some of the methods to accomplish energy reduction include the study of LED installation, hours of operations, HVAC (heat ventilation air conditioning), and applying insulation to equipment with high heat output and shut down of non-essential equipment during peak hours.

Comment
This is the amount of investment related to energy conservation measures including the establishment and renewal of air conditioners in environmental accounting. Therefore, we estimated from the global environmental conservation cost in the environmental accounting of FY 2019.

Identifier
Risk 5

Where in the value chain does the risk driver occur?
Direct operations

Risk type & Primary climate-related risk driver

Acute physical	Increased severity and frequency of extreme weather events such as cyclones and floods

Primary potential financial impact
Decreased revenues due to reduced production capacity

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
Risk drivers can cause temporary closures, loss of personnel, complete or partial loss of facilities resulting in disruption to Brother's supply chain. Operational cost will increase.

Time horizon
Medium-term

Likelihood
Very likely

Magnitude of impact
High

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
6000000000

Potential financial impact figure – maximum (currency)
60000000000

Explanation of financial impact figure
The financial risks are decreased revenue through lost sales and an increase in distribution costs combined with capital cost increases to rebuild facilities that have the highest potential to be destroyed. The estimated financial impact of this would be about 1-10% reduction of our sales revenue in FY 2019.

Cost of response to risk
0

Description of response and explanation of cost calculation
We are reducing our exposure through expansion of product manufacturing for the same product category to multiple factory sites which includes construction of new facilities.

Comment
Last year, there was no relocation or establishment of the factory. Therefore, we entered the management cost as zero.

Identifier
Risk 6

Where in the value chain does the risk driver occur?
Downstream

Risk type & Primary climate-related risk driver

Market	Changing customer behavior

Primary potential financial impact
Increased indirect (operating) costs

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description
In Brother's product group such as communication/printing equipment, sewing machines, and machine tools, customers who cannot be satisfied with the current energy-saving performance increase in future.

Time horizon
Medium-term

Likelihood
Likely

Magnitude of impact
Medium-high

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
6000000000

Potential financial impact figure – maximum (currency)
60000000000

Explanation of financial impact figure
Customer-oriented product designing will lead to an increase in operation costs. However, it is difficult to calculate the potential financial impact, we estimated the financial impact of this about 1-10% reduction of our sales revenue in FY 2019.

Cost of response to risk
137000000

Description of response and explanation of cost calculation
Research and understand customers demand and trend and reflect the result in our product planning and designing.

Comment
The costs for the development of eco conscious products and technologies are included in the R&D costs of environmental accounting. Therefore, we quoted its management costs from environmental accounting in FY 2019.

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?
Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier
Opp1

Where in the value chain does the opportunity occur?
Direct operations

Opportunity type
Resource efficiency

Primary climate-related opportunity driver
Other, please specify (Reduction of utility costs through energy-saving equipment investment)

Primary potential financial impact
Reduced direct costs

Company-specific description
Every year, Brother Group aims to reduce Scope1 and 2 CO2 emissions by 1% (unit of sales) compared with the previous fiscal year, reducing the amount of materials for solvents containing greenhouse gases in the production process, introducing energy-saving equipment, strengthening management of facility operations, etc. As a result, in FY 2019 we achieved 6.9% reduction in market standard compared to FY2018.

Time horizon
Short-term

Likelihood
Virtually certain

Magnitude of impact
High

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
600000000

Potential financial impact figure – maximum (currency)
6000000000

Explanation of financial impact figure
Because there are various factors, it is difficult to calculate the financial impact. We dare to estimate the financial impact of this about 0.1-1% reduction of our sales revenue in FY 2019.

Cost to realize opportunity
328000000

Strategy to realize opportunity and explanation of cost calculation
We will develop, implement and manage a single or multi-year GHG reduction plan every year. The multi-year plan is reviewed every year.

Comment
The costs of management are included in management activity costs in environmental accounting. Therefore, we quoted its management costs from environmental accounting in FY 2019.

Identifier
Opp2

Where in the value chain does the opportunity occur?
Downstream

Opportunity type
Products and services

Primary climate-related opportunity driver
Development and/or expansion of low emission goods and services

Primary potential financial impact
Reduced indirect (operating) costs

Company-specific description
Brother produce energy reducing products and meeting substance legislation.

Time horizon
Medium-term

Likelihood
Very likely

Magnitude of impact
Medium-high

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
600000000

Potential financial impact figure – maximum (currency)
6000000000

Explanation of financial impact figure
The potential financial implications of the opportunity in this area we believe is gaining a larger market share of like products over our competitors. Since it is difficult to calculate the potential financial impact, we estimated the financial impact of this about 0.1-1% reduction of our sales revenue in FY 2019.

Cost to realize opportunity
137000000

Strategy to realize opportunity and explanation of cost calculation
We quickly respond to new laws and regulations by utilizing the environmental management system. Our activities range from the procurement of parts and materials, development, design and product use to produce eco-conscious products that comply with regulations.

Comment
The costs for the development of eco conscious products and technologies are included in the R&D costs of environmental accounting. Therefore, we quoted its management costs from environmental accounting in FY 2019.

Identifier
Opp3

Where in the value chain does the opportunity occur?
Downstream

Opportunity type
Products and services

Primary climate-related opportunity driver
Development and/or expansion of low emission goods and services

Primary potential financial impact
Reduced indirect (operating) costs

Company-specific description

Brother gains business opportunities by creating products that conform to the following environmental labels and regulations. - Blue Angel Mark and Nordic Swan, Eco Mark (Japan) EU ECO Flower, EPEAT - EU ErP Lot4 VA, France VA collection of consumables, Action Plan of the Industries of Electrical and Electronics on a Low Carbon Society.

Time horizon
Medium-term

Likelihood
Very likely

Magnitude of impact
Medium-high

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
2000000000

Potential financial impact figure – maximum (currency)
3000000000

Explanation of financial impact figure
Our products meet the criteria for environmental labels. This provides a strong opportunity to gain market share and provide our consumers a greater choice of eco conscious products over our competitors who are not meeting the criteria. The development and update of environmental label criteria required investment and development for the products and consumables. Mitigation of implementation costs if regulations were enacted. By preceding the customer-oriented products can lead to the development of new customers. We estimate that we can expect an increase of about 1% of total sales.

Cost to realize opportunity
137000000

Strategy to realize opportunity and explanation of cost calculation
We actively promote acquisition of environmental labels around the world, communicate through our website and provide customers helpful information. Compliance with product labelling (Energy Star, Blue Angel, etc.) expresses our printing products strong advantage in the market. These low-carbon products make up about 50-70% of our sales and our profit. Expanding market share with these low-carbon products will have a significant impact on sales. We estimated the impact as about 1/10 of the sales of communications and printing equipment in FY2019.

Comment
Costs vary globally and are difficult to quantify. If we estimate risks and opportunities as being coincident, the costs for the development of eco conscious products and technologies are included in the R&D costs of environmental accounting. Therefore, we quoted its management costs from environmental accounting in FY 2019.

Identifier
Opp4

Where in the value chain does the opportunity occur?
Direct operations

Opportunity type
Energy source

Primary climate-related opportunity driver
Use of lower-emission sources of energy

Primary potential financial impact
Reduced direct costs

Company-specific description
Ensuring the continuous flow of goods through our supply chain and the opportunity to implement the latest technologies for energy efficiency within a new facility in Asia.

Time horizon
Long-term

Likelihood
About as likely as not

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
No, we do not have this figure

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
The operation cost has been reduced by utilizing the latest technologies in energy efficiencies and CO2 emission reduction in a new Vietnam factory.

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation
Field studies were conducted within various Asian countries that took into consideration climate change risks, the ability to procure parts from regional suppliers, cost

factors, as well as local conditions that would support our manufacturing and supply chain requirements and new technologies in energy efficiencies.

Comment

We have not announced the cost concerning the establishment of the factory.

C3. Business Strategy

C3.1

(C3.1) Have climate-related risks and opportunities influenced your organization's strategy and/or financial planning?

Yes, and we have developed a low-carbon transition plan

C3.1a

(C3.1a) Does your organization use climate-related scenario analysis to inform its strategy?

Yes, qualitative and quantitative

C3.1b

(C3.1b) Provide details of your organization's use of climate-related scenario analysis.

Climate-related scenarios and models applied	Details
2DS RCP 2.6	Our inventory follows the GHP Protocol Corporate Standard and the consolidation approach used to calculate is operational control. We commit to reduce absolute Scope1 and 2 GHG emissions 30 % by FY 2030 from a FY 2015 base-year. The primary operations and activities that account for emissions in Scope1 and 2 is –, Scope 1: GHG emissions from liquid solvent for manufacturing and fossil fuel consumption Scope 2: GHG emissions from purchased electricity consumption. We also commit to reduce absolute Scope3 GHG emissions from purchased goods and services, use of sold products and end-of-life treatment of sold products 30 % by FY 2030 from a FY 2015 base-year. We believe that the target value of 30% reduction by 2030 compared with the fiscal 2015 level is a consistent with the ambitious target level of Paris Agreement. The reason is the same setting as the target values of Scope1 and 2 set based on the SDA tool. As we are aggressively pursuing greenhouse gas reduction efforts aiming at achieving the 2 degrees target of the Paris Agreement globally, it is imperative for the Brother Group to carry out business activities in line with that trend, It is supposed to be kept low, and I think that it will be blessed with business opportunities. Based on this scenario, we have analysed the amount of greenhouse gas to be reduced in the business sectors of the Brother group, because we recognize that the scenario with a high possibility to achieve the 2 degrees target is IEA 2DS. We specifically calculated the CO2 equivalent reduction of Scope1 and 2 that should be reduced by FY 2030 using the SDA tool provided by SBTi. As a result, we realized that it is the level required by society to achieve 30% of the fiscal 2015 level. In addition, the Brother group's Scope3 emissions account for more than 90% of the total GHG emissions from purchased goods and services, end of life treatment of sold products. Because these emissions are greatly related to the low carbon performance of products and demand for low-carbon products is expected in future markets, we set the reduction target of Scope3 at the same level as Scope1 and 2, We believe that addressing creation will lead to business risk reduction. Based on the above concepts, we decided to set the goal of reducing the Scope1, 2 and Scope 3 by 30% from FY 2015 in FY 2030 as the goal of the entire group with the Environmental Committee and Strategy Committee, which the directors participate in. The whole group mentioned here covers areas in more than 40 countries such as Japan, the United States, Europe and Asia where branch offices are located.

C3.1d

(C3.1d) Describe where and how climate-related risks and opportunities have influenced your strategy.

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	Impacted. We incorporate low-carbon product creation and line up into annual environmental targets and mid- and long-term plans, and the environmental committee manages the progress situation. Product example; Printers, All-in-Ones, Home Sewing Machines, Industrial Sewing Machines, Machine Tools, Reducers and Gears, etc.
Supply chain and/or value chain	Yes	Impacted for some suppliers, facilities, or product lines. When initiating transactions with the supply chain, or periodically, we are requesting the setting and reporting of voluntary targets for GHG reduction.
Investment in R&D	Yes	Impacted for some suppliers, facilities, or product lines. In 2016, Brother succeeded in developing a fuel cell system by making use of miniaturization technology accumulated through the development of printers and multifunction machines, and power control technology cultivated in machine tools and others. We believe that we can contribute to the development of a low carbon society and a decarbonized society.
Operations	Yes	Impacted. We have incorporated the latest energy-saving facilities in establishing a new factory and building a new building. Even in existing buildings, we have budgeted and introduced devices that compatible with functions and energy saving, such as updating to devices with fewer GHGs. In the office, operational standards are set for air conditioner, lighting and office equipment operation, contributing to energy conservation. At the factory, we reviewed the unnecessary power, updated the equipment, improved the process, contributing to the reduction of GHG.

C3.1e

(C3.1e) Describe where and how climate-related risks and opportunities have influenced your financial planning.

	Financial planning elements that have been influenced	Description of influence
Row 1	Revenues Direct costs	Changes in factory production volumes and changes in consumer trends caused by the effects of climate change will have an impact on Brother's financial plan for revenue. Due to the effects of climate change, financial planning concerning Brother's business expenditure, such as product quality control, employee safety and health, and introduction of low GHG emissions equipment, may be affected.

C3.1f

(C3.1f) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).

i) We formulate the Brother Group Environmental Action Plan based on the Global Charter. The Environmental Promotion Division continuously researches regulatory information and global trends related to climate change from the stage of draft documents. We identify the important issues, set ambitious environmental targets in our Environmental Action Plan and publish it to entire departments in the Head Office and facilities around the world. Based on the tasks under Environmental Action Plan, the Environmental Committee as the decision-making body for environmental affairs, acts to check the progress and performance and utilizes the results in making a new action plan every three to five years.
ii) In order to contribute to solving global environmental problems, Brother creates the "Brother Group Environmental Vision 2050" as an environmental goal of the Brother group, as well as its milestone we have set the "Medium-Term Fiscal 2030 target" as our target. We are aware that this medium-term target for reducing CO2 emissions is appropriate as a reduction target based on the scientific basis for achieving the "2 degrees target" of the Paris Agreement, or "Science Based Targets Initiative" and applied for certification.
Prior to this target setting, we have expanded the boundary of Scope1, 2 and 3 to set tasks, which drive forward the efficient CO2 reduction program to disclose the effect of producing more energy-saving products.
iii) Energy saving activities at each facility, energy efficient performance in our products to meet regulatory requirements and customers' preference change have been influenced on our product development plans and our decisions to develop new technologies.
iv) By identifying global trends and regulatory requirements, we developed the Brother Group midterm environmental action plan 2019-2021 and set the following ambitious targets in respect to the following fields:
-1. Create eco-conscious products,
-2. Reduce group CO2 emissions. For example, we develop low carbon products and switch to energy-efficient equipment at each facility.
v) We developed new Fuel cells. This product does not emit CO2 emissions in its usage and is very useful from CO2 reduction view point.
vi) We have started a working group and now are considering the future vision.
vii) We conduct product environmental assessments at key stages of development and ensure eco-conscious design by addressing the product life cycle from material procurement, production, products use through to the collection and recycling at the end of life. We conduct an LCA that quantitatively provides numerical data for the "degree of impact on the environment" at each stage of its life cycle. Environmental load characteristics and improvement points are identified, and the improvement effects are confirmed for each product. We conduct an LCA for our core products categories in our business operations and acquire the JEMAI EcoLeaf environmental label on almost all core products. We make our Brother products towards achievement of the top-level energy efficiency in the market.
viii) We will perform forward-looking scenario analyses, including a 2 degrees scenario and aim to utilize the results in setting our long-term business plan and strategies.

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?
Absolute target

C4.1a

(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.

Target reference number
Abs 1

Year target was set
2018

Target coverage
Company-wide

Scope(s) (or Scope 3 category)
Scope 1+2 (market-based)

Base year
2015

Covered emissions in base year (metric tons CO2e)
200425.85

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)
100

Target year
2030

Targeted reduction from base year (%)
30

Covered emissions in target year (metric tons CO2e) [auto-calculated]
140298.095

Covered emissions in reporting year (metric tons CO2e)
124647.21

% of target achieved [auto-calculated]
126.029385264758

Target status in reporting year
Achieved

Is this a science-based target?
Yes, this target has been approved as science-based by the Science-Based Targets initiative

Please explain (including target coverage)
In July 2018, Brother Industries, Ltd. announces that its mid-term targets for CO2 emissions reduction set out in the "Brother Group Environmental Vision 2050" have been approved by the international environmental initiative "Science Based Targets initiative" as the science-based reduction targets for achieving the Paris Agreement's goal of limiting global warming to well below "2 degrees Celsius." The Brother Group identifies CO2 emissions reduction as one of the priorities in the "Brother Group Environmental Vision 2050," a long-term environmental vision towards 2050. The mid-term targets for CO2 emissions reduction, which were recognized as science-based targets this time, were set based on the view that worsening worldwide climate change is a serious social challenge and a business risk for the Brother Group that need to be addressed continuously for years. The Group's reduction targets have been expanded to include CO2 emissions from its value chain that account for more than 90% of its total CO2 emissions (Scope 3) in addition to CO2 emissions from office activities (Scope1 and 2), which the Group has already been addressing. Focusing on these scopes, the Brother Group contributes to preventing climate change. Since it is published as a news release on our website, please refer to below.
http://www.brother.com/en/news/2018/sbt/index.htm 1-(124,647.21-140,298.10) / (200,425.85-140,298.10) =1-(-15,650.89)/60,127.75=1.260294=126.03%

Target reference number
Abs 2

Year target was set
2018

Target coverage
Company-wide

Scope(s) (or Scope 3 category)
Other, please specify (Product-related Scope 3 (Category 1, 11, 12))

Base year
2015

Covered emissions in base year (metric tons CO2e)
2701150.49

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)
100

Target year
2030

Targeted reduction from base year (%)
30

Covered emissions in target year (metric tons CO2e) [auto-calculated]
1890805.343

Covered emissions in reporting year (metric tons CO2e)
2274919.62

% of target achieved [auto-calculated]
52.5986823735492

Target status in reporting year
Underway

Is this a science-based target?
Yes, this target has been approved as science-based by the Science-Based Targets initiative

Please explain (including target coverage)
In July 2018, Brother Industries, Ltd. announces that its mid-term targets for CO2 emissions reduction set out in the "Brother Group Environmental Vision 2050" have been approved by the international environmental initiative "Science Based Targets initiative" as the science-based reduction targets for achieving the Paris Agreement's goal of limiting global warming to well below "2 degrees Celsius." The Brother Group identifies CO2 emissions reduction as one of the priorities in the "Brother Group Environmental Vision 2050," a long-term environmental vision towards 2050. The mid-term targets for CO2 emissions reduction, which were recognized as science-based targets this time, were set based on the view that worsening worldwide climate change is a serious social challenge and a business risk for the Brother Group that need to be addressed continuously for years. The Group's reduction targets have been expanded to include CO2 emissions from its value chain that account for more than 90% of its total CO2 emissions (Scope3) in addition to CO2 emissions from office activities (Scope1 and 2), which the Group has already been addressing. Focusing on these scopes, the Brother Group contributes to preventing climate change. Since it is published as a news release on our website, please refer to below.
http://www.brother.com/en/news/2018/sbt/index.htm 1-(2,274,919.62-1,890,805.34) / (2,701,150.49-1,890,805.34) =1-384,114.28/810,345.15=0.525987=52.60%

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?
No other climate-related targets

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.
Yes

C4.3a

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	0	0
To be implemented*	57	1559.54
Implementation commenced*	0	0
Implemented*	63	3731.7
Not to be implemented	0	0

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Initiative category & Initiative type

Energy efficiency in production processes	Other, please specify (Improvement of equipment by installing equipment that contributes to energy saving)

Estimated annual CO2e savings (metric tonnes CO2e)
294.56

Scope(s)
Scope 2 (location-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
9500000

Investment required (unit currency – as specified in C0.4)
94000000

Payback period
4-10 years

Estimated lifetime of the initiative
<1 year

Comment
We have reduced energy consumption by control of ventilation fans and lighting with timers and by installing air curtains at production plants. This activity planned for the year was completed in FY2019.

Initiative category & Initiative type

Energy efficiency in production processes	Machine/equipment replacement

Estimated annual CO2e savings (metric tonnes CO2e)
768.15

Scope(s)
Scope 2 (location-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
13000000

Investment required (unit currency – as specified in C0.4)
350000000

Payback period
21-25 years

Estimated lifetime of the initiative
<1 year

Comment
We have reduced energy consumption by updating production equipment, air conditioners and humidifiers. This activity planned for the year was completed in FY2019.

Initiative category & Initiative type

Energy efficiency in buildings	Lighting

Estimated annual CO2e savings (metric tonnes CO2e)
255.9

Scope(s)
Scope 2 (location-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
12000000

Investment required (unit currency – as specified in C0.4)
160000000

Payback period
11-15 years

Estimated lifetime of the initiative
<1 year

Comment
We have reduced energy consumption by replacing fluorescent lamps with LEDs. This activity planned for the year was completed in FY2019.

Initiative category & Initiative type

Energy efficiency in production processes	Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)
2307.07

Scope(s)
Scope 1
Scope 2 (location-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
19000000

Investment required (unit currency – as specified in C0.4)
88000000

Payback period
4-10 years

Estimated lifetime of the initiative
<1 year

Comment
At production factories, we have turned off lights during employee's break time and factory holidays and have reduced energy by stopping the machine in process waiting time. We attached timers and controllers as needed. We have reduced energy consumption by patrolling leaks on air piping and maintaining proper condition by periodic cleaning of air conditioning equipment. This activity planned for the year was completed in FY2019.

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Compliance with regulatory requirements/standards	We invested in outside consultants for energy efficiencies to meet regulatory requirements.
Dedicated budget for energy efficiency	Implementation for energy reduction projects within facilities.
Internal incentives/recognition programs	Donations from the amount of Eco-point Brother Environmental Programs to external environmental charities.
Internal finance mechanisms	Additional investments as required/needed for potential reduction activities.
Dedicated budget for low-carbon product R&D	We set energy-saving performance targets in each business segment and decide investment in developing new products.
Employee engagement	First place finish in the Drive Less Somerset Employer Challenge Event for 2016 sponsored by NPO "Ride Wise" in the USA. The challenge issued was to see which Somerset Employer could reduce traffic and decrease the most amount of carbon emissions through choosing sustainable transportation options.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.

Level of aggregation

Group of products

Description of product/Group of products

Period: Compliance rate of imaging equipment * placed on the European market from Jan 2019 to Dec 2019 Equipment using inkjet technologies: 100% Equipment using laser technologies: 98% *Copiers, printers, fax machines and multifunction devices using laser, inkjet and solid ink technologies

Are these low-carbon product(s) or do they enable avoided emissions?

Low-carbon product

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Evaluating the carbon-reducing impacts of ICT

% revenue from low carbon product(s) in the reporting year

53.08

% of total portfolio value

<Not Applicable>

Asset classes/ product types

<Not Applicable>

Comment

The Brother group produced more energy efficient products compared with the previous equivalent models based on our own Product Environmental Assessment Check Sheet.

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start
April 1 2015

Base year end
March 31 2016

Base year emissions (metric tons CO2e)
75333.15

Comment
To apply to SBTi and to expand the boundary, we tried again to calculate the base year as 2015.This data has been revalidated by external verification agencies.

Scope 2 (location-based)

Base year start
April 1 2015

Base year end
March 31 2016

Base year emissions (metric tons CO2e)
122766.05

Comment
To apply to SBTi and to expand the boundary, we tried again to calculate the base year as 2015.This data has been revalidated by external verification agencies.

Scope 2 (market-based)

Base year start
April 1 2015

Base year end
March 31 2016

Base year emissions (metric tons CO2e)
125092.7

Comment
To apply to SBTi and to expand the boundary, we tried again to calculate the base year as 2015. This data has been revalidated by external verification agencies.

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

IEA CO2 Emissions from Fuel Combustion
ISO 14064-1
Japan Ministry of the Environment, Law Concerning the Promotion of the Measures to Cope with Global Warming, Superceded by Revision of the Act on Promotion of Global Warming Countermeasures (2005 Amendment)
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)
Toitū carbonzero programme
US EPA Emissions & Generation Resource Integrated Database (eGRID)

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)
17362.526

Start date
<Not Applicable>

End date
<Not Applicable>

Comment
This figure has been verified by a third-party external verifier.

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based
We are reporting a Scope 2, location-based figure

Scope 2, market-based
We are reporting a Scope 2, market-based figure

Comment
To apply to SBTi and to expand the boundary, we tried again to calculate the base year as 2015. This data has been revalidated by external verification agencies.

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Reporting year

Scope 2, location-based
107832.664

Scope 2, market-based (if applicable)
107284.683

Start date
<Not Applicable>

End date
<Not Applicable>

Comment
This figure has been verified by a third-party external verifier.

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?
Yes

C6.4a

(C6.4a) Provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure.

Source
Group of DOMINO PRINTING SCIENCE is headquartered in the United Kingdom and joined the brother group in FY2015.

Relevance of Scope 1 emissions from this source
Emissions are relevant and calculated, but not disclosed

Relevance of location-based Scope 2 emissions from this source
Emissions are relevant and calculated, but not disclosed

Relevance of market-based Scope 2 emissions from this source (if applicable)
Emissions are relevant and calculated, but not disclosed

Explain why this source is excluded
Currently, we are in the process of incorporating Group of DOMINO PRINTING SCIENCE into our environmental management system. Although we have access to environmental data for most of our plants, we have not been able to keep track of them at many sales companies, and we have not obtained complete environmental impact data for all sites. At present, due to imperfections, Group of DOMINO PRINTING SCIENCE is not in scope.

C6.5

(C6.5) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status
Relevant, calculated

Metric tonnes CO2e
1127546.682

Emissions calculation methodology
Regarding some products of each business area in FY 2019, LCA data will be used for determining emissions for goods and services purchased or acquired by the reporting company. CO2 emissions = Σ ((total sales by products) x (emission factor)).

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
We have not calculated emissions using data from suppliers or value chain partners.

Capital goods

Evaluation status
Relevant, calculated

Metric tonnes CO2e
56658.09

Emissions calculation methodology
To calculate CO2 emissions by multiplying the purchased price and the emission factor based on assert types (buildings, vehicles, machinery, tools, dies, fixtures and equipment, intangible) in FY 2019. CO2 emissions = Σ ((acquisition cost of fixed assets) x (emission factor)).

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
We have not calculated emissions using data from suppliers or value chain partners.

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status
Relevant, calculated

Metric tonnes CO2e
10955.22

Emissions calculation methodology
Fuels: The amounts of each fuels (Scope1 reported amounts) are multiplied by emissions unit values from the stage of resource extraction to the transportation stage in FY 2019. Electricity and Heat: The amounts of electricity and heat (Scope2 reported amounts) are multiplied by average emissions unit values for resource extraction, production, and transportation of fuel for all power sources in FY 2019. CO2 emissions = Σ ((amount of energy consumption) x (emission factor)).

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
We have not calculated emissions using data from suppliers or value chain partners.

Upstream transportation and distribution

Evaluation status
Relevant, calculated

Metric tonnes CO2e
80690.982

Emissions calculation methodology
Ton-kilometer method will be used for determining emissions for Transportation and delivery in FY 2019. CO2 emissions = Σ ((ton-kilometers transported) x (emissions factor by mode such as truck, railroads, ships and aircrafts)). Domestic BIL (BROTHER INDUSTRIES, LTD.) will use the data of transport emissions report in FY 2019 which are provided by domestic/overseas offices and the factories. CO2 emissions = Σ ((transport distance) x (transport weight) x (emission factor)).

Percentage of emissions calculated using data obtained from suppliers or value chain partners
26

Please explain
We use some data from value chain partners such as shipping companies to calculate.

Waste generated in operations

Evaluation status
Relevant, calculated

Metric tonnes CO2e
3680.42

Emissions calculation methodology
Emissions are estimated by multiplying amounts consigned to waste disposal/recycling companies by emissions unit values “tCO2e/t” based on standard scenarios for each type of waste in FY 2019. CO2 emissions = Σ ((acceptance amount of processed, recycled waste) x (emission factor)).

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
We have not calculated emissions using data from suppliers or value chain partners.

Business travel

Evaluation status
Relevant, calculated

Metric tonnes CO2e
3663.167

Emissions calculation methodology
In the use of public transportation, the emission in FY 2019 has been calculated in multiplying the expenses of each transport mode and the emission factor. If the transportation expense is unknown, the transport mode percentage will be set by the inspection of sampling. CO2 emission = Σ ((amount of travel expenses) x (emission factor)). There is a method to simply calculate the emission amount from the number of employees at the end of 2019 when each site cannot grasp the transportation allowance. Emissions can be calculated using the formula below. CO2 emission = Σ ((employee numbers) x (emission factor)).

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
We have not calculated emissions using data from suppliers or value chain partners.

Employee commuting

Evaluation status
Relevant, calculated

Metric tonnes CO2e
14247.115

Emissions calculation methodology
In the use of public transportation, the emission in FY 2019 has been calculated in multiplying the expenses of each transport mode and the emission factor .If the transportation expense is unknown, the transport mode percentage will be set by the inspection of sampling. CO2 emission = Σ ((amount of travel expenses) x (emission factor)). Calculate based on fuel economy method: CO2 emissions = Σ ((moving distance/fuel consumption) x (emission factor)). If we cannot know the data such as transportation expenses payments, travel distance, fuel usage, use the way to calculate based on the numbers of employee and working days in FY 2019. Emissions can be calculated using the formula below. CO2 emissions = Σ ((employee numbers) x (working days) x (emission factor)).

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
We have not calculated emissions using data from suppliers or value chain partners.

Upstream leased assets

Evaluation status
Relevant, calculated

Metric tonnes CO2e
5176.439

Emissions calculation methodology
The emission in FY 2019 has been calculated in multiplying the energy consumption of leased assets which are not included in Scope1 and 2 and the emission factor. If the company has rented a part of whole property, the energy consumption should be calculated using the ration of office area, etc. CO2 emission = Σ ((leased asset energy consumption) x (emission factor)). If we cannot know energy consumption of leased assets, only when leased asset is building, the emission in FY 2019 has been calculated in multiplying total floor space of leased assets and the emission factor. CO2 emissions = Σ ((floor space of leased building) x (emission factor)).

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
We have not calculated emissions using data from suppliers or value chain partners.

Downstream transportation and distribution

Evaluation status
Relevant, calculated

Metric tonnes CO2e
15312.168

Emissions calculation methodology
The emission in FY 2019 is calculated based on ton-kilometer method. We define that transport distance is uniformly 100 km by PCRs (“Product Category Rule" s) of the JEMAI EcoLeaf Environment Label. CO2 emissions = Σ ((100km) x (transport weight) x (emission factor)).

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
We have not calculated emissions using data from suppliers or value chain partners. For downstream transportation and logistics, the transportation distance is calculated as 100 km uniformly.

Processing of sold products

Evaluation status
Not relevant, calculated

Metric tonnes CO2e
0

Emissions calculation methodology
Emissions from the processing of sold products in FY 2019 are calculated from the following formula. CO2 emissions = (CO2 emissions from customers [Scope1+2]) x (Sales amount of intermediate products/sales amount of sales destination)

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
Not relevant, as we do not sell any intermediate product.

Use of sold products

Evaluation status
Relevant, calculated

Metric tonnes CO2e
988117.545

Emissions calculation methodology
Emissions in FY2019 are calculated based on LCA. LCA data will be used for determining emissions for goods and services purchased or acquired by the reporting company.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
We have not calculated emissions using data from suppliers or value chain partners.

End of life treatment of sold products

Evaluation status
Relevant, calculated

Metric tonnes CO2e
159255.395

Emissions calculation methodology
Emissions in FY2019 are calculated based on LCA. LCA data will be used for determining emissions for goods and services purchased or acquired by the reporting company.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
We have not calculated emissions using data from suppliers or value chain partners.

Downstream leased assets

Evaluation status
Relevant, calculated

Metric tonnes CO2e
1742.268

Emissions calculation methodology
The emission in FY 2019 has been calculated in multiplying the energy consumption of leased assets which are not included in Scope1and 2 and the emission factor. If the company has rented a part of whole property, the energy consumption should be calculated using the ration of office area, etc. CO2 emission = Σ ((leased asset energy consumption) x (emission factor)). If we cannot know energy consumption of leased assets, only when leased asset is building, the emission in FY 2019 has been calculated in multiplying total floor space of leased assets and the emission factor. CO2 emissions = Σ ((floor space of leased building) x (emission factor)).

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
We have not calculated emissions using data from suppliers or value chain partners.

Franchises

Evaluation status
Not relevant, calculated

Metric tonnes CO2e
0

Emissions calculation methodology
We collect Scope1 and 2 of the franchises and the calculation method in the Accounting and Reporting System in FY 2019. CO2 emissions = Σ ((energy consumption of franchises) x (emission factor)).

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
Not relevant, as we do not have any franchises.

Investments

Evaluation status
Not relevant, calculated

Metric tonnes CO2e
0

Emissions calculation methodology
Emissions in FY 2019 from investment can be obtained by the following two methods. 1. Method to obtain from the holding ratio to the total number of issued shares of the investee: CO2 emissions =Σ {(Emissions from each stock investee) x (Emission factor)} 2. Method to obtain from debt ratio to total capital of investee: CO2 emissions =Σ {(Emissions from each bond investment) x (Emission factor)}

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
Not relevant, as business investment is not our major business operations.

Other (upstream)

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Brother has no other relevant activity, so this term does not apply.

Other (downstream)

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Brother has no other relevant activity, so this term does not apply.

C6.7

(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?
No

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure
2.188e-7

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)
124647.21

Metric denominator
unit total revenue

Metric denominator: Unit total
569722000000

Scope 2 figure used
Market-based

% change from previous year
0.07

Direction of change
Decreased

Reason for change
The main reason for this change is the decrease in Scope 1. The reduction in the amount of HFC contained in the solvent is the main reason for the decrease in Scope1.

Intensity figure
2.197e-7

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)
125195.19

Metric denominator
unit total revenue

Metric denominator: Unit total
569722000000

Scope 2 figure used
Location-based

% change from previous year
0.05

Direction of change
Decreased

Reason for change
The main reason for this change is the decrease in Scope 1. The reduction in the amount of HFC contained in the solvent is the main reason for the decrease in Scope1.

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?
Yes

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	15902.838	IPCC Fourth Assessment Report (AR4 - 100 year)
CH4	44.219	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	22.303	IPCC Fourth Assessment Report (AR4 - 100 year)
HFCs	1299.668	IPCC Fourth Assessment Report (AR4 - 100 year)
PFCs	93.498	IPCC Fourth Assessment Report (AR4 - 100 year)
SF6	0	IPCC Fourth Assessment Report (AR4 - 100 year)
NF3	0	IPCC Fourth Assessment Report (AR4 - 100 year)

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

Country/Region	Scope 1 emissions (metric tons CO2e)
Japan	8762.497
China	1534.509
United States of America	766.735
United Kingdom of Great Britain and Northern Ireland	588.162
Taiwan, Greater China	14.96
Philippines	163.762
Viet Nam	1869.083
Other, please specify (Rest of world)	3662.819

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By facility

C7.3b

(C7.3b) Break down your total gross global Scope 1 emissions by business facility.

Facility	Scope 1 emissions (metric tons CO2e)	Latitude	Longitude
BROTHER INDUSTRIES, LTD.	1510.368	35.118372	136.921982
NISSEI CORPORATION	3516.571	34.920154	137.049682
BROTHER TECHNOLOGY (SHENZHEN) LTD.	1059.807	22.6058	114.141051
BROTHER INDUSTRIES (VIETNAM) LTD.	1409.218	20.90872	106.393478
ZHUHAI BROTHER INDUSTRIES, CO., LTD.	9.586	22.232624	113.529373
TAIWAN BROTHER INDUSTRIES, LTD.	14.96	23.010871	120.666004
BROTHER MACHINERY XIAN CO., LTD.	380.426	34.341568	108.940175
BROTHER INDUSTRIES SAIGON, LTD.	2.487	10.957413	106.842687
BROTHER INDUSTRIES (PHILIPPINES), INC.	138.014	14.13857	121.112322
BROTHER MACHINERY VIETNAM CO, LTD.	457.378	20.947949	106.22868
Rest of world	8863.711		

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)
Japan	51842.365	45434.051	95683.84	385.37
China	16580.747	16564.458	26444.57	0
United States of America	4818.676	4818.676	9232.19	0
United Kingdom of Great Britain and Northern Ireland	611.887	509.398	2201.03	872.61
Taiwan, Greater China	1092.815	992.283	1861.69	0
Philippines	14961.579	21121.214	24648.4	0
Viet Nam	16101.561	16101.561	35860.94	0
Other, please specify (Rest of world)	1823.035	1743.042	6207.84	2020.2

C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By facility

C7.6b

(C7.6b) Break down your total gross global Scope 2 emissions by business facility.

Facility	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
BROTHER INDUSTRIES, LTD.	19366.956	16945.817
NISSEI CORPORATION	14569.701	12748.489
BROTHER TECHNOLOGY (SHENZHEN) LTD.	9983.607	9983.607
BROTHER INDUSTRIES (VIETNAM) LTD.	13014.098	13014.098
ZHUHAI BROTHER INDUSTRIES, CO., LTD.	1492.986	1492.986
TAIWAN BROTHER INDUSTRIES, LTD.	1067.988	969.74
BROTHER MACHINERY XIAN CO., LTD.	4389.404	4389.404
BROTHER INDUSTRIES SAIGON, LTD.	1707.685	1707.685
BROTHER INDUSTRIES (PHILIPPINES), INC.	14879.175	21004.885
BROTHER MACHINERY VIETNAM CO, LTD.	1361.736	1361.736
Rest of world	25999.327	23666.236

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Decreased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	0	No change	0	
Other emissions reduction activities	2183.32	Decreased	11.21	The Brother Group's CO2 emissions are primarily due to the use of electricity and fuel at the plant. The Brother Group continuously implements energy saving measures. In addition to this activity, continuing from last year, in fiscal 2019, we succeeded in drastically reducing the HFCs and PFCs used in our plants by process improvement. These improvements are estimated 2,183.32t-CO2e. The rate is calculated 11.21% for Scope1 and 2 reductions. The formula is 2,183.32/ (144,125-124,647) =11.21%. 144,125 and 124,647 are subtotals of Scope 1 and 2 of FY2018 and FY2019 respectively.
Divestment	0	No change	0	
Acquisitions	0	No change	0	
Mergers	0	No change	0	
Change in output	3060.96	Decreased	15.72	GHG emissions related to production decreased due to a decrease in production of machine tools. Change in emission at the two major plants is estimated 3,060.96 t-CO2. The rate is calculated 15.72%. The formula is 3,060.96 / (144,125-124,647) =15.72%. 144,125 and 124,647 are subtotals of Scope 1 and 2 of FY2018 and FY2019 respectively.
Change in methodology	0	No change	0	
Change in boundary	0	No change	0	
Change in physical operating conditions	0	No change	0	
Unidentified	0	No change	0	
Other	0	No change	0	

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Location-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?
More than 0% but less than or equal to 5%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	Yes
Consumption of purchased or acquired steam	No
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	No

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)	0	70849	70849
Consumption of purchased or acquired electricity	<Not Applicable>	3637.6	198502.9	202140.5
Consumption of purchased or acquired heat	<Not Applicable>	0	410.81	410.81
Consumption of purchased or acquired steam	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Total energy consumption	<Not Applicable>	3637.6	269762.72	273400.33

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	No
Consumption of fuel for the generation of heat	Yes
Consumption of fuel for the generation of steam	No
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	No

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Fuels (excluding feedstocks)
Motor Gasoline

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
16747.59

MWh fuel consumed for self-generation of electricity
<Not Applicable>

MWh fuel consumed for self-generation of heat
<Not Applicable>

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Emission factor
2.28585

Unit
kg CO2e per liter

Emissions factor source
GHG Protocol - Calculation tools / Emission Factors from Cross-Sector Tools / Stationary combustion

Comment
All gasoline is used as fuel for cars and forklifts.

Fuels (excluding feedstocks)
Kerosene

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
222.25

MWh fuel consumed for self-generation of electricity
<Not Applicable>

MWh fuel consumed for self-generation of heat
<Not Applicable>

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Emission factor
2.5344

Unit
kg CO2e per liter

Emissions factor source
GHG Protocol - Calculation tools / Emission Factors from Cross-Sector Tools / Stationary combustion

Comment
All kerosene is used as fuel for heating the facility.

Fuels (excluding feedstocks)
Diesel

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
10356.25

MWh fuel consumed for self-generation of electricity
<Not Applicable>

MWh fuel consumed for self-generation of heat
<Not Applicable>

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Emission factor
2.69198

Unit
kg CO2e per liter

Emissions factor source
GHG Protocol - Calculation tools / Emission Factors from Cross-Sector Tools / Stationary combustion

Comment
Almost all diesel oil is used as fuel for vehicles and forklifts, and a very small amount is used for test operation of emergency generators.

Fuels (excluding feedstocks)
Fuel Oil Number 2

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
73.92

MWh fuel consumed for self-generation of electricity
<Not Applicable>

MWh fuel consumed for self-generation of heat
<Not Applicable>

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Emission factor
2.95563

Unit
kg CO2e per liter

Emissions factor source
GHG Protocol - Calculation tools / Emission Factors from Cross-Sector Tools / Stationary combustion

Comment
All the fuel oil No.2 is used as fuel for heating the facility.

Fuels (excluding feedstocks)
Liquefied Petroleum Gas (LPG)

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
4236.62

MWh fuel consumed for self-generation of electricity
<Not Applicable>

MWh fuel consumed for self-generation of heat
<Not Applicable>

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Emission factor
2.99195

Unit
metric tons CO2e per liter

Emissions factor source
GHG Protocol - Calculation tools / Emission Factors from Cross-Sector Tools / Stationary combustion

Comment
LPG is primarily used for facility heating and hot water generation, drying and metal quenching processes in production plants.

Fuels (excluding feedstocks)
Town Gas

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
39212.38

MWh fuel consumed for self-generation of electricity
<Not Applicable>

MWh fuel consumed for self-generation of heat
<Not Applicable>

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Emission factor
1.89016

Unit

kg CO2e per m3

Emissions factor source
GHG Protocol - Calculation tools / Emission Factors from Cross-Sector Tools / Stationary combustion

Comment
City gas is mainly used for heating facilities and drying processes in production plants.

C8.2e

(C8.2e) Provide details on the electricity, heat, steam, and/or cooling amounts that were accounted for at a zero emission factor in the market-based Scope 2 figure reported in C6.3.

Sourcing method
Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Low-carbon energy mix

Country/region of consumption of low-carbon electricity, heat, steam or cooling
Europe

MWh consumed accounted for at a zero emission factor
689.94

Comment
BROTHER CENTRAL AND EASTERN EUROPE GmbH's Austrian headquarter and BROTHER INTERNATIONAL GmbH's Austrian branch office purchase 100% hydroelectric power and have received the certificate. BROTHER INDUSTRIES (SLOVAKIA) s.r.o. purchases 100% renewable sources (water, wind, solar, geothermal, biomass, biogas, etc.) and has received the certificate.

Sourcing method
Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Hydropower

Country/region of consumption of low-carbon electricity, heat, steam or cooling
Canada

MWh consumed accounted for at a zero emission factor
1330.26

Comment
BROTHER INTERNATIONAL CORPORATION (CANADA) purchases 100% hydroelectric power and has received the certificate.

Sourcing method
Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Low-carbon energy mix

Country/region of consumption of low-carbon electricity, heat, steam or cooling
United Kingdom of Great Britain and Northern Ireland

MWh consumed accounted for at a zero emission factor
872.61

Comment
BROTHER INTERNATIONAL EUROPE LTD. and BROTHER U.K. LTD. purchase 100% renewable sources (solar, wind, biomass, wave, etc.) and has received the certificate.

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
AssuranceStatement_Brother2019_1_EN_FINAL.pdf

Page/ section reference
page 3

Relevant standard
ISO14064-3

Proportion of reported emissions verified (%)
100

C10.1b

(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.

Scope 2 approach
Scope 2 location-based

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
AssuranceStatement_Brother2019_1_EN_FINAL.pdf

Page/ section reference
page 3

Relevant standard
ISO14064-3

Proportion of reported emissions verified (%)
100

Scope 2 approach
Scope 2 market-based

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
AssuranceStatement_Brother2019_1_EN_FINAL.pdf

Page/ section reference
page 3

Relevant standard
ISO14064-3

Proportion of reported emissions verified (%)
100

C10.1c

(C10.1c) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Scope 3 category
Scope 3 (upstream & downstream)

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
AssuranceStatement_Brother2019_1_EN_FINAL.pdf

Page/section reference
page 3

Relevant standard
ISO14064-3

Proportion of reported emissions verified (%)
100

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?
In progress

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

Yes

C11.1a

(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.

Shenzhen pilot ETS

C11.1b

(C11.1b) Complete the following table for each of the emissions trading schemes you are regulated by.

Shenzhen pilot ETS

% of Scope 1 emissions covered by the ETS

100

% of Scope 2 emissions covered by the ETS

100

Period start date

April 1 2019

Period end date

March 31 2020

Allowances allocated

13522

Allowances purchased

3312

Verified Scope 1 emissions in metric tons CO2e

1059.81

Verified Scope 2 emissions in metric tons CO2e

9983.61

Details of ownership

Facilities we own and operate

Comment

Due to a shortage of 3,312 tons-CO2 in FY2019, Brother Shenzhen factory will purchase emission credits in FY2020.

C11.1d

(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?

Brother's Shenzhen plant utilizes Shenzhen emissions trading rights trading. The Shenzhen plant receives the carbon strength target of the year from the Shenzhen government. If the factory's CO2 emissions for this year exceed the target (upper limit), we purchase emissions credits from the Shenzhen carbon emissions trading market exceeding the factory, and if the current year's CO2 emissions are the target (upper limit) If less, we will sell the surplus.

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

Yes

C11.2a

(C11.2a) Provide details of the project-based carbon credits originated or purchased by your organization in the reporting period.

Credit origination or credit purchase
Credit purchase

Project type
Forests

Project identification
A J-VER project to promote thinning of a subdivision of forest by the Gifu Pref Forest Owners Association, called “Gifu Seiryu No Kuni-zukuri Project (Gifu making land of clear stream project)”

Verified to which standard
VCS (Verified Carbon Standard)

Number of credits (metric tonnes CO2e)
6

Number of credits (metric tonnes CO2e): Risk adjusted volume
6

Credits cancelled
Yes

Purpose, e.g. compliance
Voluntary Offsetting

Credit origination or credit purchase
Credit purchase

Project type
Fossil fuel switch

Project identification
Energy business by renewing industrial furnaces at metal heat treatment plants.

Verified to which standard
VCS (Verified Carbon Standard)

Number of credits (metric tonnes CO2e)
1194

Number of credits (metric tonnes CO2e): Risk adjusted volume
1194

Credits cancelled
Yes

Purpose, e.g. compliance
Voluntary Offsetting

Credit origination or credit purchase
Credit purchase

Project type
Other, please specify (Mixed regeneration powers such as solar, wind and biomass, etc.)

Project identification
Toitū carbonreduce and Toitū carbonzero certification programmes; verification was conducted in accordance with the Programme Verification Guidelines including ISO 14064-3: 2006 and the Verification and Sampling Plan.

Verified to which standard
VCS (Verified Carbon Standard)

Number of credits (metric tonnes CO2e)
782.53

Number of credits (metric tonnes CO2e): Risk adjusted volume
782.53

Credits cancelled
Yes

Purpose, e.g. compliance
Voluntary Offsetting

C11.3

(C11.3) Does your organization use an internal price on carbon?
Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Objective for implementing an internal carbon price
Drive energy efficiency
Drive low-carbon investment

GHG Scope
Scope 1
Scope 2

Application
It is an index for the GHG reduction policy for a single year or multiple years at Brother's headquarters in Japan. It can be a criterion for GHG reduction through process improvement, building accessories such as air conditioners and introduction of new energy.

Actual price(s) used (Currency /metric ton)
1000000

Variance of price(s) used
When utilizing carbon offsets, 1,000 yen per 1 ton-CO2e or more, when investing in purchasing equipment for energy conservation, 1,000,000 yen per 1 ton-CO2e is a standard by assuming that it is depreciated in one year (if it is depreciated in 4 years, it will be 250,000 yen).

Type of internal carbon price
Internal fee

Impact & implication
To achieve GHG reduction targets for a single year and multiple years, investment to reduce energy used as self-help effort is indispensable. However, if the return on investment is not too rational, it is expected that the investment will be postponed and switched to another investment. Or, we need to achieve our goal by utilizing carbon credits. For that reason, it will be the common judgment standard within the company.

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?
Yes, our suppliers
Yes, our customers
Yes, other partners in the value chain

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement
Engagement & incentivization (changing supplier behavior)

Details of engagement
Climate change performance is featured in supplier awards scheme

% of suppliers by number

% total procurement spend (direct and indirect)

% of supplier-related Scope 3 emissions as reported in C6.5

Rationale for the coverage of your engagement
In 2015, Brother's three factories producing industrial sewing machines and other products for the Machinery business, including domestic Kariya Factory, BROTHER MACHINERY XIAN CO., LTD., and BROTHER MACHINERY VIETNAM CO., LTD., launched an awards program to recognize excellent CSR activities with the aim of further promoting CSR activities among their suppliers. This awards program involves investigation over two years. In the first year, it conducts a questionnaire survey and an on-site inspection of suppliers on seven categories, such as compliance, environment-friendliness, and safety. In the second year, it invites these suppliers to present their CSR activities, and then recognizes excellent suppliers among them. This time, the program received entries from more than 30 companies. Among these entries, the most excellent CSR company and three excellent CSR companies were chosen after the evaluation by the representatives of the three Brother factories, from various perspectives, such as environment-friendliness, safety, and continuity. The awards ceremonies were held in March 2017, at Aiden Vietnam Ltd., the company that won the best CSR award, and at the social event for suppliers held in China for the companies which received CSR excellence awards. Brother also presented testimonials to all suppliers who joined this program. This CSR awards program helped Brother know its suppliers' stances toward CSR and their activities, receiving many reports on CSR activities addressed by respective suppliers, including the improvement of working environment, the reduction of waste, and the acquisition of the ISO 14001 certificate and efforts made based on it. The factories intend to continue this program, which reportedly contributed to increasing motivation among the employees of some suppliers by giving them recognition. The three Brother factories will promote expanding and enhancing its suppliers' CSR awareness and their activities through this awards program. The Brother Group will strive to foster relations of mutual trust with its business partners and grow together in order to speedily deliver superior value to customers.

Impact of engagement, including measures of success
The Brother Group puts its "Procurement Policy" and "CSR Procurement Standards" on the website to share its CSR procurement concept with parts and materials suppliers. In addition to green procurement practices which give priority to purchasing environmentally friendly parts and materials, these policy and standards also cover a wide range of fields, from human rights and labour, employees' safety and health, fair trade and ethics, product quality and safety, information security, to social contribution. The Brother Group remains committed to promoting CSR activities together with its suppliers. "Procurement policy" describes the commitment of "promoting green procurement considering the global environment and reducing the environmental impact through product life cycle" and "CSR procurement standards" includes transactions I'm asking you to work positively on "considering the global environment" first.

Comment
The ratio to the number of suppliers, the ratio of total procurement costs, and the ratio to Scope3 emissions have not been known.

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement
Education/information sharing

Details of engagement
Share information about your products and relevant certification schemes (i.e. Energy STAR)

% of customers by number

% of customer - related Scope 3 emissions as reported in C6.5

Portfolio coverage (total or outstanding)
<Not Applicable>

Please explain the rationale for selecting this group of customers and scope of engagement
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. The Brother Group Environmental Action Plan 2018 (2016-2018) set ever-higher targets for each of these stages to accelerate efforts. Specific activities included 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. We conduct various product lifecycle activities such as product design to improve environmental performance, disclosure of environmental label acquisition products, packaging downsizing, collection and recycling of used products and expendable items, along with video on our website It is open to the public. But the ratio to the number of customers and the ratio to Scope3 emissions have not been known.

Impact of engagement, including measures of success
EPEAT is an environmental rating for electronic products that is managed and administered by the Green Electronics Council (a non-profit organization). The environmental criteria underlying the EPEAT system are based on the full product lifecycle, from design and production to energy use and recycling. 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 August 2016, the MFC-8950DW was registered as a Bronze product. In December 2017, 9 models including MFC-L2750DWXL were registered as "silver" for the first time as laser products. As of January 2020, 64 models have been registered in EPEAT.

C12.1d

(C12.1d) Give details of your climate-related engagement strategy with other partners in the value chain.

The Brother Group has been reviewing delivery routes and adjusting the delivery service frequency, etc. as necessary to increase the efficiency of logistics in Japan. The logistics network was rearranged to unload products shipped from manufacturing facilities outside Japan (including those in China and ASEAN countries) at the Port of Tokyo and the Port of Osaka, which are closely located to large market areas, instead of the Port of Nagoya, which had been used before. In addition, some products are unloaded at the Port of Yokohama, which is close to customers and the group also delivers products from warehouses in Yokohama. Truck transportation was reduced, and delivery distances were significantly reduced by increasing warehousing facilities. As a result of these measures, CO2 emissions were cut by about 38% per shipped weight. The Brother Group has successfully kept CO2 emissions low ever since. Since 2013, a modal shift has been introduced for some product shipments to large customers by switching from trucks to railroad. As a result, CO2 emissions in FY2016 were reduced by 22 tons. Meanwhile, six external warehouses that had been used to store service parts were integrated into one factory, and the logistics and reverse logistics facilities for some products were consolidated to eliminate the need for transport between warehouses. In total logistics, this measure reduced the volume of transport by about 10%. 3PL (third party logistics) is also used in the sales logistics of Brother products. It is noteworthy that sales logistics are undertaken by companies that are committed to reducing CO2 emissions (e.g., use of small hybrid delivery trucks).

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?
Trade associations

C12.3b

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?
Yes

C12.3c

(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.

Trade association
JBMIA (Japan Business Machine and Information System Industries Association)

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
We are engaged in activities such as collecting information on climate change policies and regulations, suggesting opinions, following up on industry activities such as "Low Carbon Society Implementation Plan", reviewing industry long-term efforts, and are participating as a member of the specialized technical committee.

How have you influenced, or are you attempting to influence their position?
We are participating as a committee member since the establishment of the 2002 Energy Conservation Council Liaison Committee, the predecessor of the current climate change response expert committee, and we strive to share information on social trends, release our own GHG reduction activities, etc.

Trade association
EuroVAPrint

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
EuroVAPrint is a non-profit association grouping all major manufactures of imaging equipment that operate in Europe. The association promotes ErP Lot4 that is an industry voluntary agreement among EU Ecodesign Directive to improve the environmental performance by setting eco-design requirements of imaging equipment. For example, promoting eco-designs related to ENERGY STAR® such as duplex printing and energy consumption requirements, educating users on best practices for environmental printing such as using recycled paper and to secure better energy efficiency. These activities lead to develop and promote more eco-friendly products.

How have you influenced, or are you attempting to influence their position?
The Manager in Brother International Europe is a board member and plays a governance role actively. (http://www.eurovaprint.eu/pages/our-mission/) As a board member, he attends the Steering Committee and gave an overview presentation of how the VA has been delivering tangible energy savings. (http://www.eurovaprint.eu/fileadmin/eurovaprint_files/pdfs/Infographic_2015.pdf) He also participated to set further targets for Tier 3 of the VA and will start discussions on the future of the VA and its environmental improvements from 2019 onwards.

Trade association
DIGITAL EUROPE

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
DIGITAL EUROPE is committed to reducing our industry's GHG emissions because it is good for the planet and it makes good business sense. As the voice of the digital industry in Europe, we work closely with EU policymakers to advocate for these views. DIGITALEUROPE is a recognised stakeholder in the Eco Design regulatory process. We also regularly meet with EU stakeholders to provide industry insight on the latest ICT products and services.

How have you influenced, or are you attempting to influence their position?
Brother International Europe is the member of this association and we actively participate in activities for chemical and environmental design of products.

C12.3f

(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

When the JBMIA (Japan Business Machine and Information System Industries Association) submits recommendations to the Nippon Keidanren, the policy committee of this industry requires the process of determining the institution as a process. The Board of Directors of the Company participates in this policy committee as a committee member. For important decisions, reports are made to the directors from within the company's subordinate committee members in advance, and the opinions as individual companies are unified. The Group's CO2 reduction activities are reported by the Environment Committee and its risk management committee, and decisions are made at each meeting body.

C12.4

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication
In mainstream reports, incorporating the TCFD recommendations

Status
Complete

Attach the document
securities report_2019.pdf

Page/Section reference
p.19; Initiatives for ESG (including expressed support for TCFD recommendations) p.24; Environmental risk content, possibility, timing, degree of impact, countermeasures p.p.62-65; Corporate governance

Content elements
Governance
Strategy
Risks & opportunities

Comment
We do not issue an English version of the securities report, so we will attach the Japanese version.

Publication
In voluntary sustainability report

Status
Underway – previous year attached

Attach the document
eco-2019-all.pdf

Page/Section reference
pp.3-4; Message from the Management (Environment) pp.5-13; Environmental Policy and Management Structure pp.14-23; Environmental Action Plan pp.27-29; "Environmental Vision 2050" Reduction of CO2 Emissions

Content elements
Governance
Strategy
Emissions figures
Emission targets

Comment
This year's report has not been published, so we attached the last year's version.

C15. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

Nothing in particular

C15.1

(C15.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	The COO is a Managing Executive Officer overseeing the environmental programs at Brother. He is the chief executive of the “Law, Environment & General Affairs Department”.	Chief Operating Officer (COO)