

## Environmental Accounting

### Concept of environmental accounting

The Brother Group performs environmental accounting as an effective means to continuously improve the efficiency of environmental management, targeting eight business sites in Japan ("in Japan") and manufacturing facilities outside Japan ("outside Japan"). The Brother Group quantitatively assesses their effects, and then uses the results to plan environmental activities to be carried out the next fiscal year.

### Calculation results for FY2020

These are the expenses, investments, and effectiveness of environmental activities in FY2020 (April 1, 2020–March 31, 2021) which is the second year in the Brother Group Environmental Action Plan 2021 (2019–2021) (the increases/decreases are based on comparisons with the previous fiscal year).

### Environmental conservation costs

The Brother Group spent JPY 349 million in Japan (an increase of JPY 50 million) and JPY 257 million outside Japan (an increase of JPY 199 million). The total amount was JPY 606 million (an increase of JPY 249 million). In Japan, investments were made mainly to conserve the global environment, such as implementing energy conservation measures. Outside Japan, investments were also made mainly to conserve the global environment, including measures to prevent pollution and conserve energy.

Expenditures and labor costs for various environmental conservation activities were JPY 932 million in Japan (an increase of JPY 12 million) and JPY 183 million outside Japan (an increase of JPY 2 million).

In FY2020 (April 1, 2020–March 31, 2021), JPY 10,000 was spent for the purchase of carbon credits.

Classification of environmental conservation costs		Details of main activities and their effects	Investment (unit: JPY million)		Expenses (unit: JPY million)	
			In Japan	Outside Japan	In Japan	Outside Japan
1. Business area cost	1) Pollution prevention costs	Pollution prevention measures (including air, water, vibration and noise)	0 (0)	148 (125)	21 (-1)	75 (5)
	2) Global environmental conservation costs	Global warming prevention (energy-saving) measures	257 (39)	109 (74)	259 (0)	23 (16)
	3) Resource circulation costs	Recycling and reduction in waste generation	1 (1)	0 (0)	105 (-1)	46 (-10)
2. Upstream/ downstream cost	Costs incurred to reduce environmental impact when procuring parts and materials and after selling products	Green procurement activities; collection and recycling of used products/consumables	1 (-34)	0 (0)	82 (-2)	0 (0)
3. Administration cost	Costs incurred by activities that contribute indirectly to reducing the environmental impact of business operations	Establishment, administration, and maintenance of the ISO 14001 system; environmental training for employees; disclosure of environmental information; greening and cleanup of manufacturing facilities and their surrounding areas	43 (15)	0 (0)	288 (-8)	35 (3)
4. R&D cost	R&D costs for reducing environmental impact	Development of eco-conscious products and technologies that help mitigate climate change such as energy saving and resource conservation designs; implementation and design improvement of product environmental assessments	42 (24)	0 (0)	151 (20)	0 (-6)
5. Social activity cost	Costs of environmental conservation that is not directly linked with corporate activities	Support for environmental conservation groups and organizations; support for environmental activities by local citizens; information services	0 (0)	0 (0)	22 (2)	4 (-6)
6. Cost to deal with environmental damage	Costs incurred to restore the natural environment (including soil remediation)	Soil contamination surveys; soil remediation	5 (5)	0 (0)	4 (2)	0 (0)
Total			349 (50)	257 (199)	932 (12)	183 (2)

Figures in parentheses show increases/decreases in the amount from the previous fiscal year.

## Environmental conservation effects

Energy input increased 3.3% in Japan and decreased 3.4% outside Japan.

Water consumption decreased 3.3% in Japan and 9.9% outside Japan, resulting in an overall decrease of 9.0%.

CO<sub>2</sub> emissions decreased 0.7% in Japan and 7.2% outside Japan, resulting in an overall decrease of 5.3%.

In FY2020, only 10 tons of carbon credits for forest absorption were purchased as the reduction in CO<sub>2</sub> emissions in Japan is making smooth progress.

Content of environmental conservation effects		Classification of index to measure environmental conservation effects		In Japan	Outside Japan	
Effects resulting from business area cost	Effects related to resource input into business operations	Energy input	(kL: converted into crude oil quantity)	10,169 (320)	23,392 (-822)	
		Water input	m <sup>3</sup>	80,331 (-2,718)	454,540 (-50,054)	
	Effects related to environmental impact and waste released from business operations	Release into the atmosphere from energy use	CO <sub>2</sub> (t-CO <sub>2</sub> /year) * from energy use Based on the emission factors of international standards		20,299 (-135)	47,112 (-3,665)
			NO <sub>x</sub> (kg/year)		2,208 (43)	3,438 (-351)
			SO <sub>x</sub> (kg/year)		11 (0)	142 (69)
		Generation of waste	Generation of waste		1,668 (9)	6,832 (-1,104)
	Landfill waste (t)		0 (0)	123 (12)		

Figures in parentheses show increases/decreases in the amount from the previous fiscal year.

\*: Since FY2016 (April 1, 2016-March 31, 2017), the CO<sub>2</sub> emissions from energy use have been calculated based on the emission factors of the international standards. For electricity, emission factors of respective countries released by the International Energy Agency (IEA) are used. For fuel, emission factors of respective countries released by the GHG Protocol are used. The values calculated using the conventional emission factors are also indicated for reference. The values calculated based on the international standards have been increased by more than 40% compared to the conventional values.

## Economic effects derived from environmental conservation measures\*

The main economic effects were reduction in waste treatment costs due to resource saving and recycling in Japan, and reduction in energy cost due to energy conservation measures and operating income from the recycling of waste outside Japan.

Content of economic effects		In Japan (unit: JPY million)	Outside Japan (unit: JPY million)
Income	Operating income from recycling of waste generated from main business operations	3.2 (0.4)	51.6 (-7.0)
Cost reduction	Reduction in energy cost by energy saving	10.3 (-1.1)	121.9 (31.8)
	Reduction in waste treatment cost due to resource conservation and recycling	34.3 (2.2)	167.1 (79.6)
Other	Publicity effects, such as newspaper reporting, calculated in terms of advertising expenses	15.4 (10.7)	0.2 (0)
Total		63.2 (12.2)	340.8 (104.4)

Figures in parentheses show increases/decreases in the amount from the previous fiscal year.

\*: Economic effects derived from environmental conservation measures are those that can be calculated in monetary terms from among the effects derived from the environmental conservation activities. Effects that cannot be calculated based on solid grounds (i.e., assumed effects and accidental effects) are not calculated.

## Scope of aggregation

Eight business sites in Japan (head office of Brother Industries, Ltd., Mizuho Manufacturing Facility, Hoshizaki Manufacturing Facility, Minato Manufacturing Facility, Momozono Manufacturing Facility, Kariya Manufacturing Facility, Research & Development Center, Logistics Center\*<sup>1</sup>), Brother Industries (U.K.) Ltd., Brother Industries (Slovakia) s.r.o., Taiwan Brother Industries, Ltd., Zhuhai Brother Industries, Co., Ltd., Brother Machinery Xian Co., Ltd., Brother Technology (Shenzhen) Ltd., Brother Industries (Shenzhen), Ltd.\*<sup>2</sup> Brother Industries (Vietnam) Ltd., Brother Industries Saigon, Ltd., Brother Machinery Vietnam Co., Ltd., and Brother Industries (Philippines), Inc.

\*1: For Logistics Center, only "Environmental conservation effects" was aggregated.

\*2: Current Brother Technology (Shenzhen), Ltd.

**Environmental Accounting (Detailed Data: FY2016-FY2020)**

**Environmental Conservation Effects**

Content of Environmental Conservation Effects		Classification of Index to Measure Environmental Conservation Effects	In Japan					Outside Japan					
			FY2016	FY2017	FY2018	FY2019	FY2020	FY2016	FY2017	FY2018	FY2019	FY2020	
Effects resulting from business area cost	Effects related to resource input into business operations	Total energy input (kL: converted into crude oil quantity)	10,231	10,929	10,406	9,849	10,169	23,515	26,408	26,960	24,214	23,392	
		Water input (m <sup>3</sup> )	87,772	88,322	92,265	83,049	80,331	703,515	720,417	597,718	504,594	454,540	
	Effects related to environmental impact and waste released from business operations	Release into the atmosphere from energy use	CO <sub>2</sub> (t-CO <sub>2</sub> /year) from energy use	22,298	23,111 <sup>*1</sup>	21,426	20,434	20,299	55,741	55,738 <sup>*1</sup>	59,649	50,777	47,112
			NOx (kg/year)	2,155	2,404	2,316	2,165	2,208	5,276	5,540	4,967	3,789	3,438
			SOx (kg/year)	8	11	11	11	11	123	125	93	73	142
Generation of waste	Amount of waste generation (t)	Amount of waste generation (t)	1,702	1,772	1,762	1,658	1,668	6,105	7,172	8,683	7,936	6,832	
		Landfill waste (t)	0	0	0	0	0	121	121	136	110	123	

\*1: In FY2016, the CO<sub>2</sub> emission factors were changed from the values in accordance with the Act on Promotion of Global Warming Countermeasures to the values based on the international standards. The calculated values for FY2017 using the emission factors of the Act were 16,318 in Japan and 39,659 outside Japan.

**Economic Effects Derived from Environmental Conservation Measures**

Content of Economic Effects		In Japan					Outside Japan				
		FY2016	FY2017	FY2018	FY2019	FY2020	FY2016	FY2017	FY2018	FY2019	FY2020
Income	Operating income from recycling of waste generated from main business operations	2.5	5.5	4.8	2.8	3.2	46.6	60.2	63.6	58.6	51.6
Cost reduction	Reduction in energy cost by energy-saving	18.0	17.5	11.3	11.4	10.3	20.6	80.2	88.0	90.1	121.9
	Reduction in waste treatment cost due to resource-saving and recycling	32.9	32.5	35.7	32.1	34.3	24.8	19.1	106.2	87.5	167.1
Other	Publicity effects, such as newspaper reporting, calculated in terms of advertising expenses	1.4	0.8	2.6	4.7	15.4	0.4	0.4	0.3	0.2	0.2
Total		54.8	56.3	54.4	51.0	63.2	92.4	159.9	258.1	236.4	340.8

Unit: millions of Yen

**Environmental Conservation Costs**

Classification of Environmental Conservation Costs		Details of Main Implementation and the Effects	In Japan									
			Investment Amount					Expense Amount				
			FY2016	FY2017	FY2018	FY2019	FY2020	FY2016	FY2017	FY2018	FY2019	FY2020
1. Business area costs: Costs for reducing direct environmental impacts occurring within the facility area			332	189	380	218	258	342	288	353	387	385
Breakdown:	(1) Pollution prevention cost	Pollution prevention measures (including air, water, vibration and noise)	2	16	1	0	0	25	38	23	22	21
	(2) Global environmental conservation cost	Global warming prevention (energy-saving) measures	329	171	379	218	257	160	125	226	259	259
	(3) Resource circulation cost	Recycling and reduction in waste generation	1	2	0	0	1	157	125	104	106	105
2. Upstream/downstream cost: Costs incurred to reduce environmental impact when procuring parts and materials and after selling products		Green procurement activities; collection and recycling of used products/consumables	0	1	0	35	1	60	71	88	84	82
3. Administration cost: Costs incurred by activities that contribute indirectly to reducing the environmental impact of business operations		Establishment, administration and maintenance of the ISO 14001 system; environmental training for employees; disclosure of environmental information; greening and cleanup of manufacturing facilities and their surrounding areas	101	143	34	28	43	349	306	317	296	288
4. R&D cost: R&D costs for reducing environmental impact		Development of eco-conscious products and technologies that help mitigate climate change such as energy conservation and resource conservation designs; implementation of product environmental assessments; design improvement	12	10	7	18	42	149	135	138	131	151
5. Social activity cost: Costs of environmental conservation that is not directly linked with corporate activities		Support for environmental conservation groups and organizations; support for environmental activities by local citizens; information services	0	3	0	0	0	10	13	15	20	22
6. Cost to deal with environmental damage: Costs incurred to restore the natural environment (including soil remediation)		Soil contamination surveys; soil remediation	0	0	0	0	5	3	2	2	2	4
Total			445	346	421	299	349	913	815	913	920	932

Unit: millions of Yen

Classification		Details of Main Implementation and the Effects	Outside Japan									
			Investment Amount					Expense Amount				
			FY2016	FY2017	FY2018	FY2019	FY2020	FY2016	FY2017	FY2018	FY2019	FY2020
1. Business area costs: Costs for reducing direct environmental impacts occurring within the facility area			42	37	95	58	257	119	162	160	133	144
Breakdown:	(1) Pollution prevention cost	Pollution prevention measures (including air, water, vibration and noise)	6	8	7	23	148	66	96	90	70	75
	(2) Global environmental conservation cost	Global warming prevention (energy-saving) measures	36	28	88	35	109	15	14	5	7	23
	(3) Resource circulation cost	Recycling and reduction in waste generation	0	1	0	0	0	38	52	65	56	46
2. Upstream/downstream cost: Costs incurred to reduce environmental impact when procuring parts and materials and after selling products		Green procurement activities; collection and recycling of used products/consumables	0	31	0	0	0	0	0	0	0	0
3. Administration cost: Costs incurred by activities that contribute indirectly to reducing the environmental impact of business operations		Establishment, administration and maintenance of the ISO 14001 system; environmental training for employees; disclosure of environmental information; greening and cleanup of manufacturing facilities and their surrounding areas	0	0	0	0	0	31	32	33	32	35
4. R&D cost: R&D costs for reducing environmental impact		Development of eco-conscious products and technologies that help mitigate climate change such as energy conservation and resource conservation designs; implementation of product environmental assessments; design improvement	0	0	0	0	0	5	6	6	6	0
5. Social activity cost: Costs of environmental conservation that is not directly linked with corporate activities		Support for environmental conservation groups and organizations; support for environmental activities by local citizens; information services	0	0	0	0	0	3	10	11	10	4
6. Cost to deal with environmental damage: Costs incurred to restore the natural environment (including soil remediation)		Soil contamination surveys; soil remediation	0	0	0	0	0	0	0	0	0	0
Total			42	68	95	58	257	158	210	210	181	183

**Scope of aggregation**

Fiscal Year	Target Period	Name of Site	
		In Japan	Outside Japan
FY2016	April 1, 2016–March 31, 2017	Head office, Mizuho Manufacturing Facility, Hoshizaki Manufacturing Facility, Minato Manufacturing Facility, Momozono Manufacturing Facility, Kariya Manufacturing Facility, Research & Development Center, Logistics Center <sup>*1</sup>	Brother Industries (U.K.) Ltd., Brother Industries (Slovakia) s.r.o., Taiwan Brother Industries, Ltd., Zhuhai Brother Industries, Co., Ltd., Brother Machinery Xian Co., Ltd., Brother Industries (Shenzhen), Ltd. <sup>*2</sup> , Brother Technology (Shenzhen) Ltd. <sup>*2</sup> , Brother Industries Technology (M) Sdn. Bhd. <sup>*3</sup> , Brother Industries (Vietnam) Ltd., Brother Industries Saigon, Ltd., Brother Machinery Vietnam Co., Ltd., Brother Industries (Philippines), Inc.
FY2017	April 1, 2017–March 31, 2018	Head office, Mizuho Manufacturing Facility, Hoshizaki Manufacturing Facility, Minato Manufacturing Facility, Momozono Manufacturing Facility, Kariya Manufacturing Facility, Research & Development Center, Logistics Center <sup>*1</sup>	Brother Industries (U.K.) Ltd., Brother Industries (Slovakia) s.r.o., Taiwan Brother Industries, Ltd., Zhuhai Brother Industries, Co., Ltd., Brother Machinery Xian Co., Ltd., Brother Technology (Shenzhen) Ltd. <sup>*2</sup> , Brother Industries (Vietnam) Ltd., Brother Industries Saigon, Ltd., Brother Machinery Vietnam Co., Ltd. <sup>*4</sup> , Brother Industries (Philippines), Inc.
FY2018	April 1, 2018–March 31, 2019	Head office, Mizuho Manufacturing Facility, Hoshizaki Manufacturing Facility, Minato Manufacturing Facility, Momozono Manufacturing Facility, Kariya Manufacturing Facility, Research & Development Center, Logistics Center <sup>*1</sup>	Brother Industries (U.K.) Ltd., Brother Industries (Slovakia) s.r.o., Taiwan Brother Industries, Ltd., Zhuhai Brother Industries, Co., Ltd., Brother Machinery Xian Co., Ltd., Brother Technology (Shenzhen) Ltd. <sup>*2</sup> , Brother Industries (Vietnam) Ltd., Brother Industries Saigon, Ltd., Brother Machinery Vietnam Co., Ltd. <sup>*4</sup> , Brother Industries (Philippines), Inc.
FY2019	April 1, 2019–March 31, 2020	Head office, Mizuho Manufacturing Facility, Hoshizaki Manufacturing Facility, Minato Manufacturing Facility, Momozono Manufacturing Facility, Kariya Manufacturing Facility, Research & Development Center, Logistics Center <sup>*1</sup>	Brother Industries (U.K.) Ltd., Brother Industries (Slovakia) s.r.o., Taiwan Brother Industries, Ltd., Zhuhai Brother Industries, Co., Ltd., Brother Machinery Xian Co., Ltd., Brother Technology (Shenzhen) Ltd. <sup>*2</sup> , Brother Industries (Vietnam) Ltd., Brother Industries Saigon, Ltd., Brother Machinery Vietnam Co., Ltd. <sup>*4</sup> , Brother Industries (Philippines), Inc.
FY2020	April 1, 2020–March 31, 2021	Head office, Mizuho Manufacturing Facility, Hoshizaki Manufacturing Facility, Minato Manufacturing Facility, Momozono Manufacturing Facility, Kariya Manufacturing Facility, Research & Development Center, Logistics Center <sup>*1</sup>	Brother Industries (U.K.) Ltd., Brother Industries (Slovakia) s.r.o., Taiwan Brother Industries, Ltd., Zhuhai Brother Industries, Co., Ltd., Brother Machinery Xian Co., Ltd., Brother Technology (Shenzhen) Ltd. <sup>*2</sup> , Brother Industries (Vietnam) Ltd., Brother Industries Saigon, Ltd., Brother Industries (Philippines), Inc.

\*1: For Logistics Center and Brother Industries Technology (M) Sdn. Bhd. in FY2016, only "Environmental Conservation Effects" was aggregated.

\*2: Brother Industries (Shenzhen), Ltd. was subject to an absorption-type merger in October 2016, with Brother Technology (Shenzhen) Ltd. as the surviving company.

\*3: Brother Industries Technology (M) Sdn. Bhd. terminated its business operations on March 31, 2017.

\*4: Brother Machinery Vietnam Co., Ltd. ceased production on December 23, 2020.