

## 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 FY2019

These are the expenses, investments, and effectiveness of environmental activities in FY2019(April 1, 2019–March 31, 2020) which is the first fiscal 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 299 million in Japan (a decrease of JPY 122 million) and JPY 58 million outside Japan (a decrease of JPY 37 million). The total amount was JPY 357 million (a decrease of JPY 159 million). Both inside and outside Japan, investments were made mainly to conserve the global environment, such as implementing energy conservation measures.

Expenditures and labor costs for various environmental conservation activities were JPY 920 million in Japan (an increase of JPY 7 million) and JPY 181 million outside Japan (a decrease of JPY 29 million).

In FY2019(April 1, 2019–March 31, 2020), approximately JPY 1.3 million 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 (-1)	23 (16)	22 (-1)	70 (-20)
	2) Global environmental conservation costs	Global warming prevention (energy-saving) measures	218 (-161)	35 (-53)	259 (33)	7 (2)
	3) Resource circulation costs	Recycling and reduction in waste generation	0 (0)	0 (0)	106 (2)	56 (-9)
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	35 (35)	0 (0)	84 (-4)	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	28 (-6)	0 (0)	296 (-21)	32 (-1)
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	18 (11)	0 (0)	131 (-7)	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)	20 (5)	10 (-1)
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)	2 (0)	0 (0)
Total			299 (-122)	58 (-37)	920 (7)	181 (-29)

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

### Environmental conservation effects

Energy input decreased 5.4% in Japan and 10.2% outside Japan.

Water consumption decreased 10.0% in Japan and 15.6% outside Japan, resulting in an overall decrease of 14.8%.

CO2 emissions decreased 4.6% in Japan and 14.9% outside Japan, resulting in an overall decrease of 12.2%.

In FY2019, 1,200 tons of carbon credits were purchased to supplement the reduction in CO2 emissions in Japan.

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)	9,849 (-557)	24,214 (-2,746)	
		Water input	m <sup>3</sup>	83,049 (-9,216)	504,594 (-93,124)	
	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	20,434 (-991)	50,777 (-8,872)
			NO <sub>x</sub> (kg/year)		2,165 (-151)	3,789 (-1,178)
			SO <sub>x</sub> (kg/year)		11 (0)	73 (-20)
	Generation of waste	Generation of waste		1,658 (-104)	7,936 (-747)	
Landfill waste (t)			0 (0)	110 (-25)		

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	2.8 (-2.0)	58.6 (-5.0)
Cost reduction	Reduction in energy cost by energy saving	11.4 (0.1)	90.1 (2.1)
	Reduction in waste treatment cost due to resource conservation and recycling	32.1 (-3.6)	87.5 (-18.7)
Other	Publicity effects, such as newspaper reporting, calculated in terms of advertising expenses	4.7 (2.1)	0.2 (-0.1)
Total		51.0 (-3.4)	236.4 (-21.7)

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: FY2014-FY2018)

### Environmental Conservation Effects

Content of Environmental Conservation Effects		Classification of Index to Measure Environmental Conservation Effects		In Japan					Outside Japan					
				FY2015	FY2016	FY2017	FY2018	FY2019	FY2015	FY2016	FY2017	FY2018	FY2019	
Effects resulting from business area cost	Effects related to resource input into business operations	Energy input	(kL: converted into crude oil quantity)	10,116	10,231	10,929	10,406	9,849	18,820	23,515	26,408	26,960	24,214	
		Water input	m <sup>3</sup>	93,989	87,772	88,322	92,265	83,049	698,704	703,515	720,417	597,718	504,594	
	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		15,117	22,298	23,111 <sup>*1</sup>	21,426	20,434	30,993	55,741	55,738 <sup>*1</sup>	59,649	50,777
			NOx (kg/year)		2,020	2,155	2,404	2,316	2,165	2,894	5,276	5,540	4,967	3,789
			SOx (kg/year)		8	8	11	11	11	72	123	125	93	73
	Generation of waste	Amount of waste generation (t)		1,998	1,702	1,772	1,762	1,658	5,766 <sup>*2</sup>	6,105	7,172	8,683	7,936	
Landfill waste (t)			0	0	0	0	0	1	121	121	136	110		

\*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.

\*2: For Brother Industries (Philippines), Inc., some wastes were found to have been omitted from the scope of aggregation in FY2015. Thus, the amount of waste generation for FY2015 has been updated.

### Economic Effects Derived from Environmental Conservation Measures

Content of Economic Effects		In Japan					Outside Japan				
		FY2015	FY2016	FY2017	FY2018	FY2019	FY2015	FY2016	FY2017	FY2018	FY2019
Income	Operating income from recycling of waste generated from main business operations	2.9	2.5	5.5	4.8	2.8	81.3	46.6	60.2	63.6	58.6
Cost reduction	Reduction in energy cost by energy-saving	8.2	18.0	17.5	11.3	11.4	12.8	20.6	80.2	88.0	90.1
	Reduction in waste treatment cost due to resource conservation and recycling	27.6	32.9	32.5	35.7	32.1	29.7	24.8	19.1	106.2	87.5
Other	Publicity effects, such as newspaper reporting, calculated in terms of advertising expenses	3.1	1.4	0.8	2.6	4.7	13.9	0.4	0.4	0.3	0.2
Total		41.8	54.8	56.3	54.4	51.0	137.7	92.4	159.9	258.1	236.4

Unit: millions of Yen

### Environmental Conservation Costs

Classification of Environmental Conservation Costs		Details of Main Implementation and the Effects		In Japan					Outside Japan							
				Investment Amount					Expense Amount							
				FY2015	FY2016	FY2017	FY2018	FY2019	FY2015	FY2016	FY2017	FY2018	FY2019			
1. Business area costs: Costs for reducing direct environmental impacts occurring within the facility area							141	332	189	380	218	208	342	288	353	387
Breakdown:	(1) Pollution prevention costs	Pollution prevention measures (including air, water, vibration and noise)					24	2	16	1	0	21	25	38	23	22
	(2) Global environmental conservation costs	Global warming prevention (energy-saving) measures					117	329	171	379	218	83	160	125	226	259
	(3) Resource circulation costs	Recycling and reduction in waste generation					0	1	2	0	0	104	157	125	104	106
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	0	1	0	35	89	60	71	88	84
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					33	101	143	34	28	329	349	306	317	296
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					10	12	10	7	18	152	149	135	138	131
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	3	0	0	12	10	13	15	20
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	4	3	2	2	2
Total							184	445	346	421	299	794	913	815	913	920

Unit: millions of Yen

Classification		Details of Main Implementation and the Effects		Outside Japan					Expense Amount							
				Investment Amount					Expense Amount							
				FY2015	FY2016	FY2017	FY2018	FY2019	FY2015	FY2016	FY2017	FY2018	FY2019			
1. Business area costs: Costs for reducing direct environmental impacts occurring within the facility area							115	42	37	95	58	237	119	162	160	133
Breakdown:	(1) Pollution prevention costs	Pollution prevention measures (including air, water, vibration and noise)					49	6	8	7	23	86	66	96	90	70
	(2) Global environmental conservation costs	Global warming prevention (energy-saving) measures					66	36	28	88	35	92	15	14	5	7
	(3) Resource circulation costs	Recycling and reduction in waste generation					0	0	1	0	0	59	38	52	65	56
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	0	31	0	0	15	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	35	31	32	33	32
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					0	0	0	0	0	4	5	6	6	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	0	4	3	10	11	10
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							115	42	68	95	58	295	158	210	210	181

Unit: millions of Yen

### Scope of aggregation

Fiscal Year	Target Period	Name of Site	
		In Japan	Outside Japan
FY2015	April 1, 2015–March 31, 2016	Head office, Mizuho Manufacturing Facility, Hoshizaki Manufacturing Facility, Minato Manufacturing Facility, <sup>1</sup> Momozono Manufacturing Facility, Kariya Manufacturing Facility, Research & Development Center, Logistics Center <sup>2</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., Brother Technology (Shenzhen) Ltd., Brother Industries Technology (M) Sdn. Bhd., <sup>2,4</sup> Brother Industries (Vietnam) Ltd., Brother Industries Saigon, Ltd., Brother Machinery Vietnam Co., Ltd., Brother Industries (Philippines), Inc.
FY2016	April 1, 2016–March 31, 2017	Head office, Mizuho Manufacturing Facility, Hoshizaki Manufacturing Facility, Minato Manufacturing Facility, <sup>1</sup> Momozono Manufacturing Facility, Kariya Manufacturing Facility, Research & Development Center, Logistics Center <sup>2</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>3</sup> Brother Technology (Shenzhen) Ltd., <sup>3</sup> Brother Industries Technology (M) Sdn. Bhd., <sup>2,4</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, <sup>1</sup> Momozono Manufacturing Facility, Kariya Manufacturing Facility, Research & Development Center, Logistics Center <sup>2</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>3</sup> Brother Industries (Vietnam) Ltd., Brother Industries Saigon, Ltd., Brother Machinery Vietnam Co., Ltd., Brother Industries (Philippines), Inc.
FY2018	April 1, 2018–March 31, 2019	Head office, Mizuho Manufacturing Facility, Hoshizaki Manufacturing Facility, Minato Manufacturing Facility, <sup>1</sup> Momozono Manufacturing Facility, Kariya Manufacturing Facility, Research & Development Center, Logistics Center <sup>2</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>3</sup> Brother Industries (Vietnam) Ltd., Brother Industries Saigon, Ltd., Brother Machinery Vietnam Co., Ltd., Brother Industries (Philippines), Inc.
FY2019	April 1, 2019–March 31, 2020	Head office, Mizuho Manufacturing Facility, Hoshizaki Manufacturing Facility, Minato Manufacturing Facility, <sup>1</sup> Momozono Manufacturing Facility, Kariya Manufacturing Facility, Research & Development Center, Logistics Center <sup>2</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>3</sup> Brother Industries (Vietnam) Ltd., Brother Industries Saigon, Ltd., Brother Machinery Vietnam Co., Ltd., Brother Industries (Philippines), Inc.

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

\*2: For Logistics Center and Brother Industries Technology (M) Sdn. Bhd. in FY2016, only "Environmental Conservation Effects" was aggregated.

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

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