

Environmental Data

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Scope of the Environmental Data

This section of the report covers the environmental initiatives of the companies subject to the Ajinomoto Group Environmental Management as defined in the company's Environmental Regulations (fully subject to the regulations as of March 2018). These companies include Ajinomoto Co., Inc. and other group companies. Performance statistics are for the 128 major business sites (17 added following site reorganization as well as factory dissolution and new construction), which substantially represent the environmental performance of the entire Ajinomoto Group^[1] under the consolidated financial accounting system.

[1] The Ajinomoto Group refers to Ajinomoto Co., Inc. and its consolidated subsidiaries and group companies subject to financial reporting under the equity method.

Eat Well, Live Well.



Environmental Data

■ Reduction of greenhouse gas emissions

I Total greenhouse gas emissions and greenhouse gas emission intensity of production

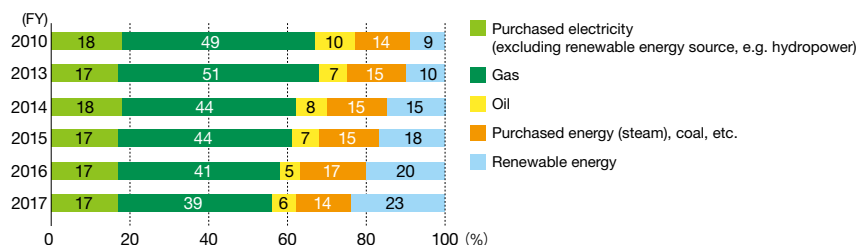
	Base year		Result						
	FY2005	Ratio	FY2013	FY2014	FY2015	FY2016	FY2017	Ratio	Difference
Total greenhouse gas emissions (million tonnes)	2.36	100%	2.20	2.21	2.23	2.33	2.30	100%	-0.06
Japan	0.58	25%	0.39	0.40	0.45	0.47	0.46	20%	-0.12
Asia/Africa	0.87	37%	0.93	0.97	1.04	1.06	1.07	47%	0.20
Europe	0.33	14%	0.23	0.22	0.17	0.18	0.16	7%	-0.17
North America	0.23	10%	0.35	0.36	0.35	0.43	0.45	20%	0.23
South America	0.20	9%	0.19	0.18	0.14	0.11	0.08	4%	-0.12
China	0.14	6%	0.10	0.09	0.08	0.08	0.07	3%	-0.07
Greenhouse gas emission volume vs. emission intensity (per tonne of product)	1.31	-	0.97	0.94	0.88	0.88	0.86	-	-
Reduction rate	-	-	26%	28%	33%	33%	35%	-	-
Reference value: Total amount of production (million tonnes)	1.80	-	2.26	2.35	2.53	2.66	2.68	-	-

I Energy input

	FY2013	FY2014	FY2015	FY2016	FY2017
Energy input (TJ) ^[2]	35,342	36,356	37,362	39,105	39,589
Energy input intensity of production (per tonne of product)	15.6	15.5	14.8	14.7	14.8

[2] TJ: terajoule, T (tera) = 10¹²

I Energy use at the Ajinomoto Group (thermal equivalent)

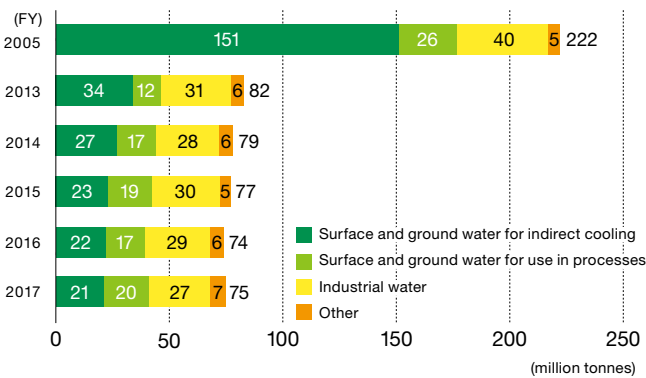


Conservation of water resources

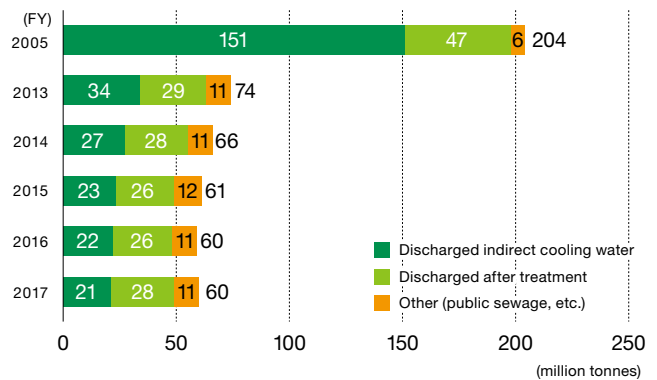
Water use

	Base year		Result						
	FY2005	Ratio	FY2013	FY2014	FY2015	FY2016	FY2017	Ratio	Difference
Water use (million tonnes)	222	100%	82	79	77	74	75	100%	-147
Japan	83	38%	34	30	32	27	25	34%	-58
Asia/Africa	82	37%	22	23	21	23	23	31%	-58
Europe	29	13%	13	11	11	12	12	15%	-18
North America	3	2%	5	5	5	6	8	10%	4
South America	18	8%	7	7	6	6	6	8%	-12
China	6	3%	1	1	1	1	1	1%	-5
Water usage vs. production volume unit (per tonne of product)	123	-	36	34	30	28	28	-	-
Reduction rate	-	-	71%	73%	75%	77%	77%	-	-
Reference value: Production volume (million tonnes)	1.80	-	2.26	2.35	2.53	2.66	2.68	-	-

Water use

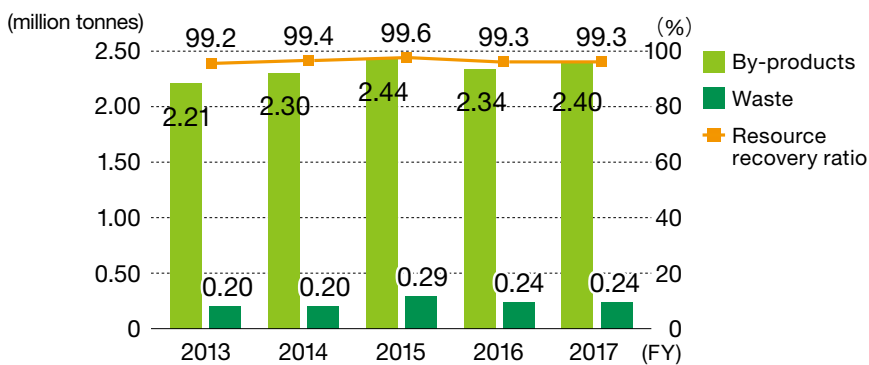


Discharged water

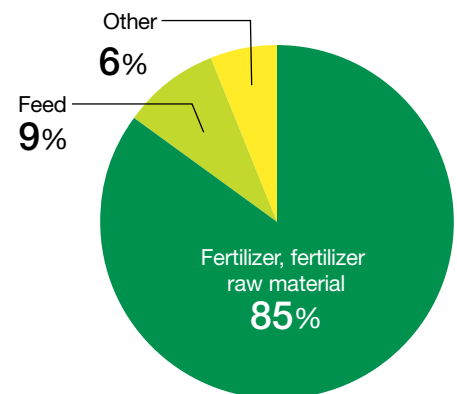


3Rs of waste

Volume of waste and by-products and resource recovery ratio

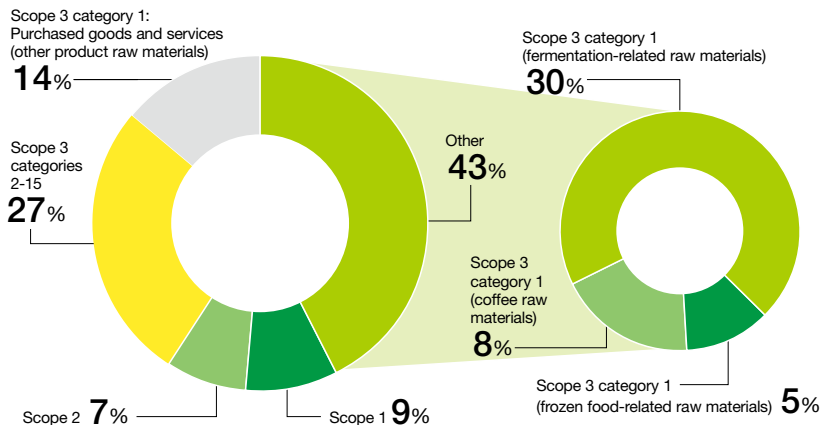


Applications of recovered by-products (FY2017)

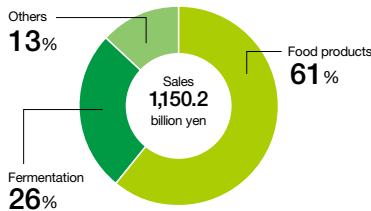


Fiscal 2017 input and output balance

I Ajinomoto Group CO₂ Emissions (Scope 1, 2, 3)



I Consolidated sales (reference)



*The Ajinomoto Group's business segments are categorized according to the characteristics of the environmental impact incurred by the various manufacturing methods, excluding cooperative ventures, such as edible oils. These categories are different from the business segments based on consolidated financial accounting. Their scope of reporting is different from the scope applied to the input and output balance.

Scope 1

Direct greenhouse gas emissions from sources that are owned or controlled by the organization (burning fuel, industrial processes, vehicle use, etc.).

Scope 2

Indirect emissions from the generation of purchased electricity, heat, or steam consumed by the company.

Scope 3

Other indirect emissions (product use, disposal and transport, employee commuting and business travel, investment, etc.)

Data calculation

• Scope of reporting :

126 major business sites that have a significant overall environmental impact within the Ajinomoto Group as defined in the consolidated financial accounting system

• Reporting period :

April 1, 2017, to March 31, 2018



Raw materials

CO₂ emissions from resource extraction through manufacture of all products purchased by the Ajinomoto Group.



Production

CO₂ emissions from use of fuels and electricity in Ajinomoto Group production processes.



Transport

CO₂ emissions relating to the distribution of all products purchased and manufactured.



Use

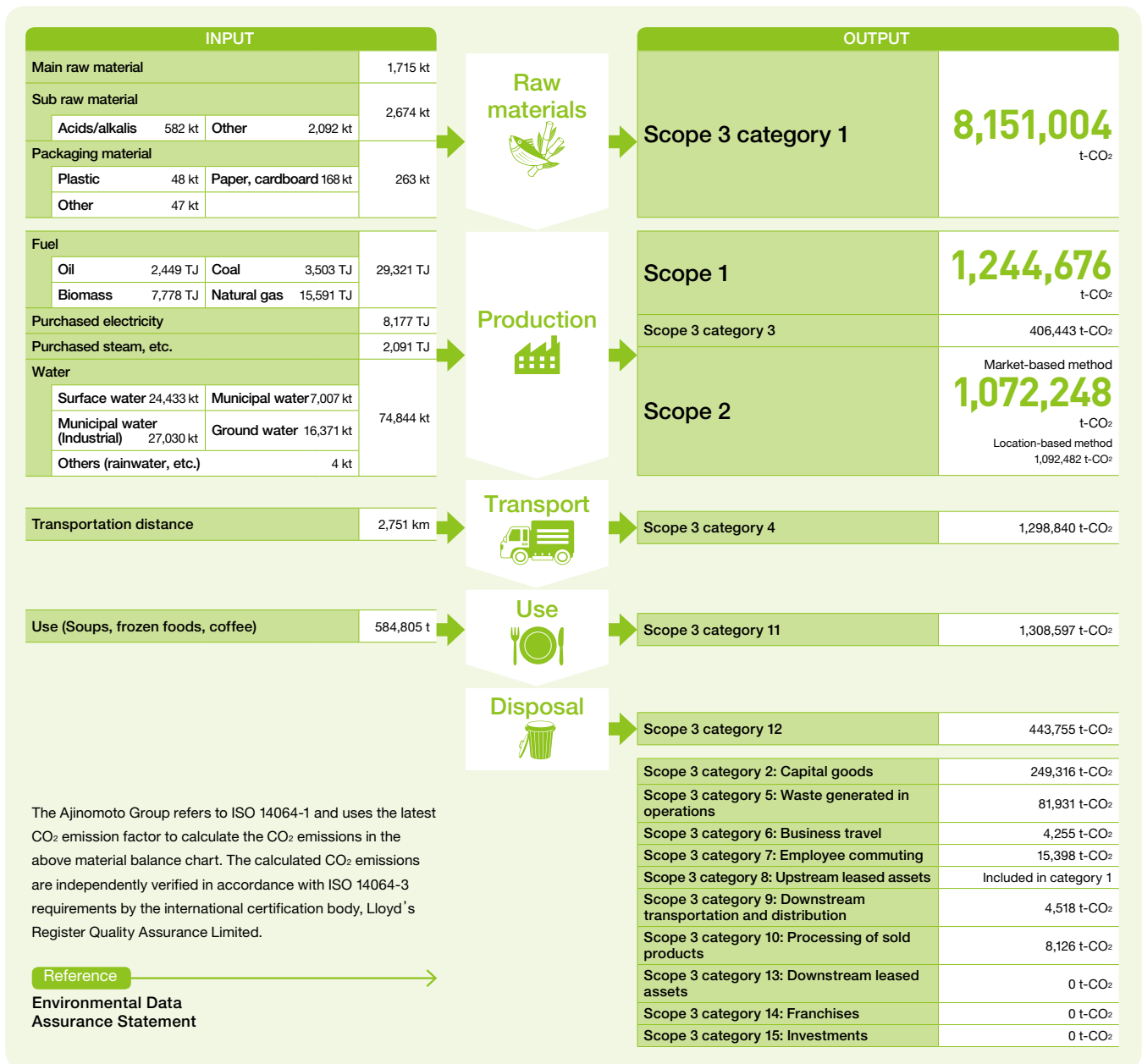
CO₂ emissions required to prepare cup soup, instant coffee, and frozen foods.



Disposal

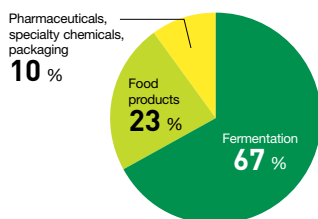
CO₂ emissions from the disposal of Ajinomoto Group product packaging.

FY2017 material balance across the business lifecycle



Water withdrawal

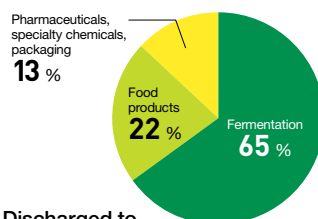
74,844 kt



Surface water	24,433 kt
Municipal water (Industrial)	27,030 kt
Ground water	16,371 kt
Municipal water	7,007 kt
Others (rainwater, etc.)	4 kt

Discharged water

60,464 kt

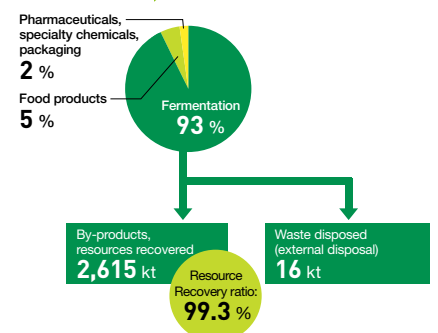


Discharged to

Public waterways (indirect cooling water, etc.)	20,824 kt
Public waterways (discharged after treatment, etc.)	28,341 kt
Public sewerage	9,827 kt
Water for irrigation use	1,472 kt
BOD	189 t
Nitrogen	340 t

Waste, by-products emissions

2,631 kt



NO _x	3,850 t
SO _x	2,541 t
Soot and dust	2,914 t
CFCs, HCFCs, HFCs	10 t

Ajinomoto Group products carbon footprint

Product	Production plant	CFP values ^[3] (per kg of product ^[4])	CFP values per serving ^[5]
(1) HON-DASHI	Kawasaki Plant, Ajinomoto Co., Inc.	14.08kg-CO ₂ e	-
(2) Ajinomoto ^{KK} Consommé (Granules)	Kawasaki Plant, Knorr Foods Co., Ltd.	6.87kg-CO ₂ e	-
(3) Knorr [®] Cup Soup Tsubu Tappuri Corn Cream	Kawasaki Plant, Knorr Foods Co., Ltd.	7.08kg-CO ₂ e	-
(4) Ajinomoto ^{KK} Sihrogayu 250 g	Kawasaki Plant, Knorr Foods Co., Ltd.	0.81kg-CO ₂ e	-
(5) Cook Do [®] Hoikoro	Kawasaki Plant, Ajinomoto Co., Inc.	2.95kg-CO ₂ e	1.21 kg-CO ₂ e per serving (approx. 700 g)
(6) Cook Do [®] Kyo-no Oozara Butabara Daikon	Tokai Plant, Knorr Foods Co., Ltd.	2.31kg-CO ₂ e	2.90 kg-CO ₂ e per serving (approx. 1 kg)
(7) Nabe Cube Toridashi Umashio	Kunneppu Plant, Hokkaido Knorr Foods Co., Ltd.	8.54kg-CO ₂ e	-
(8) Blendy [®] Stick Café au Lait (coffee mixes)	AGF Suzuka, Inc.	4.85kg-CO ₂ e	-
(9) Lemon and Basil Fried Chicken (frozen foods)	Kyushu Plant, Ajinomoto Frozen Foods Co., Inc.	5.84kg-CO ₂ e	-
(10) Yamaki Mentsuyu (400ml and 500ml)	Daini Plant and Minakami Plant, YAMAKI Co., Ltd.	2.02kg-CO ₂ e	-
(11) Masako [®] Ayam (11g)	Mojokerto Factory, PT Ajinomoto Indonesia	2.49kg-CO ₂ e	-
(12) Aji-ngon [®] Pork flavor seasoning (400g)	Long Thanh Factory, Ajinomoto Vietnam Co., Ltd.	2.68kg-CO ₂ e	-
(13) Ros Dee [®] Pork (75g)	Nong Khae Factory, Ajinomoto Thailand Co., Ltd.	3.15kg-CO ₂ e	-

[3] Carbon footprint (CFP) values in the report are calculated in accordance with PCR No. PA-CG-02 from the Japan Environmental Management Association for Industry. This calculation system and the results for (1) to (9) are backed by a third-party assurance statement from the international certification organization Lloyd's Register Quality Assurance Limited, based on the ISO/TS 14067 standard.

[4] The standard defined functional unit is per 1kg of each product.

[5] CFP values of ingredients including vegetables and meat are included in this CFP value.