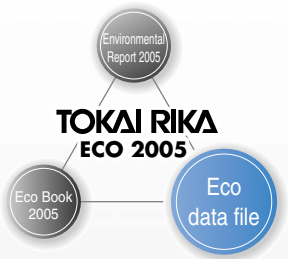


Environmental Report of Tokai Rika comprises three booklets.

Environmental Data File 2005

Harmony Between People, Cars and Earth

TOKAI RIKA

Environmental accounting

Environmental report P10 Eco-Book P10

Actual results of environmental accounting

(million yen)

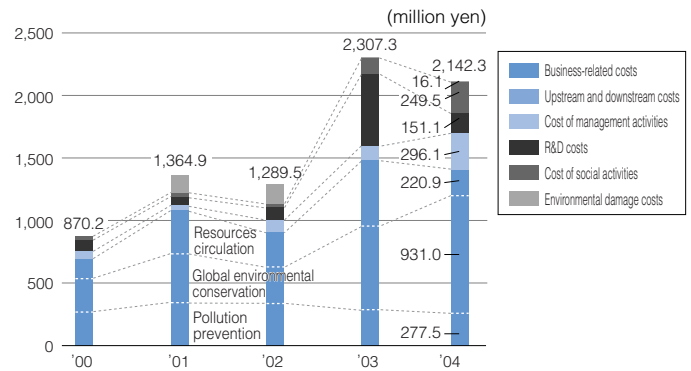
Items	Description of main approaches		Invested amount	Expenses
1)Business-related costs	Pollution prevention	Investment and expenses required for pollution prevention (air, water, noise, etc.)	60.2	217.3
	Global environmental conservation	Investment and expenses required for prevention of global warming	665.5	265.5
	Resources circulation	Investment and expenses required for treating, reducing, and recycling wastes.	31.0	189.9
2)Upstream and downstream costs	Cost differentials resulting from purchasing products, fuel, and raw materials that put a smaller burden on the environment		0	0
3)Cost of management activities	Investment and expenses required for building up and operating the environmental management system and monitoring and measuring environmental loads		6.3	289.8
4)R&D costs	Investment and expenses required for research and development of products that contribute to environmental conservation		57.3	93.8
5)Cost of social activities	Expenses required for environment improvement measures such as natural protection, treeplanting, landscaping, etc.		222.0	27.5
6)Environmental damage cost	Environmental contamination remedial costs and insurance premiums and other expenses related to environmental damage		0	16.1
		Sub-total	1042.3	1099.9
		Total	2,142.3	

Concept of environmental accounting

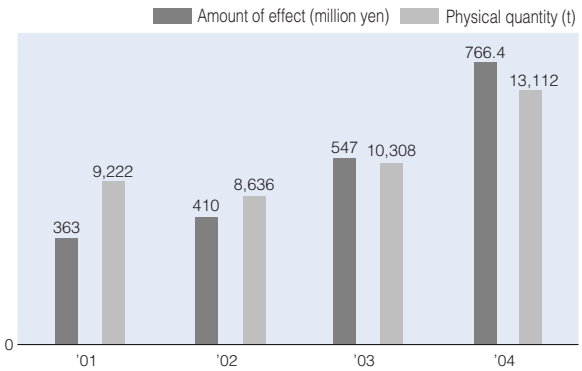
The environmental cost is grasped and aggregated on the payment base when the cost is generated. Consequently, capital investment is grasped as investment amount and no depreciation cost is posted. Costs of activities implemented together with purposes other than environment are proportionally divided and posted. Economic effects resulting from environmental conservation activities are posted by 3 items whose cost reduction amount can be definitely grasped in each year.

*For amount of energy-saving effects, improved amount based on consumption rate was posted in comparison with the previous year.
*Because each numerical value is rounded, the value obtained by adding individually may differ from the total amount.

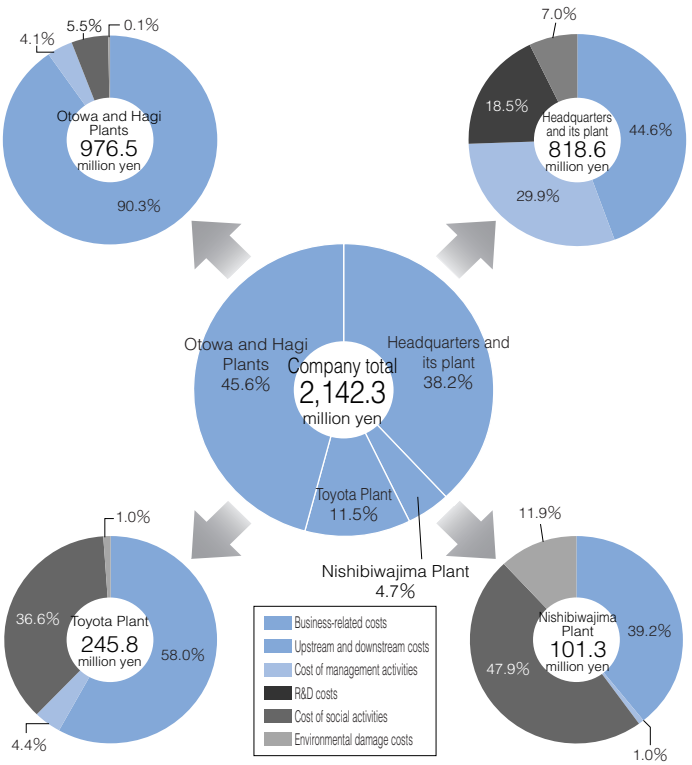
Changes of environmental cost



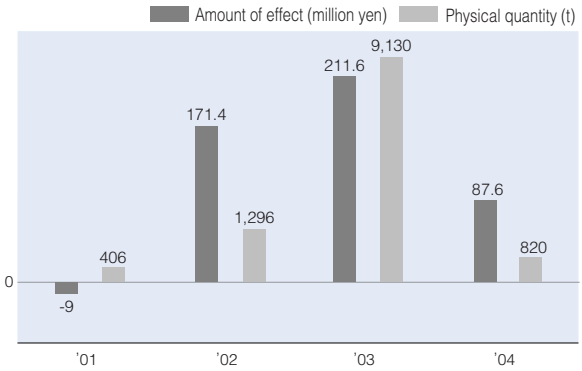
Amount of recycled materials sold



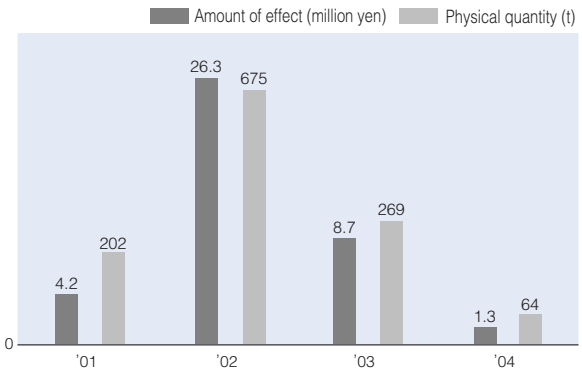
Breakdown of environmental costs by plants



Cost reduction by energy saving



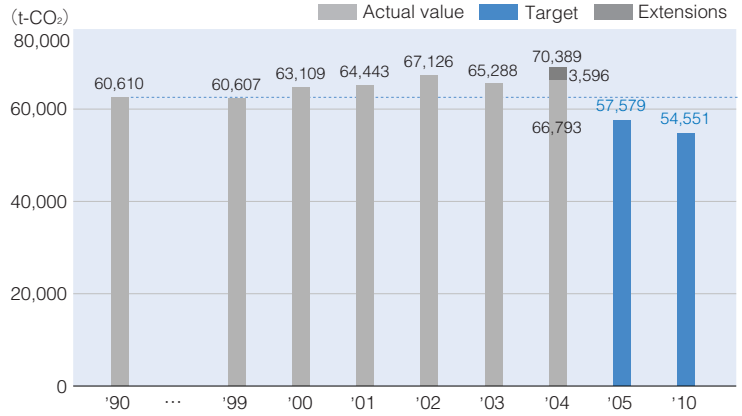
Reduction of waste disposal expenses, etc.



Energy savings

Environmental report P15 Eco-Book P3

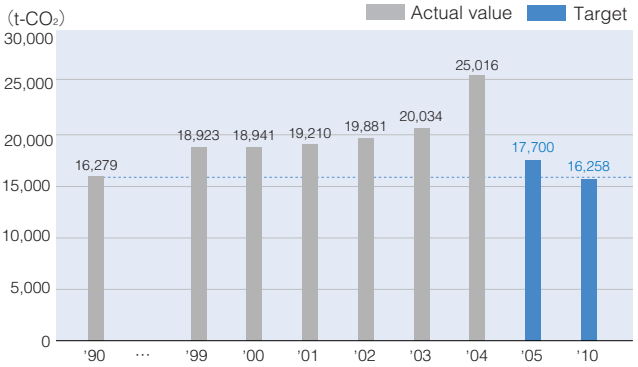
Total CO_2 emissions of company



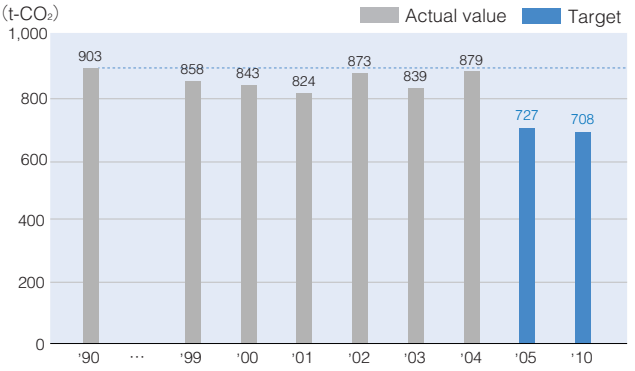
■Tokai Rika CO_2 conversion table

Type	CO_2 coefficient	unit
Electric power	0.661	kg-CO_2/kWh
City gas	2.275	kg-CO_2/m³
LPG	3.009	kg-CO_2/kg
Butane gas	3.009	kg-CO_2/kg
Heavy oil	2.936	kg-CO_2/ℓ
Kerosene	2.496	kg-CO_2/ℓ
Air	0.037	kg-CO_2/m³

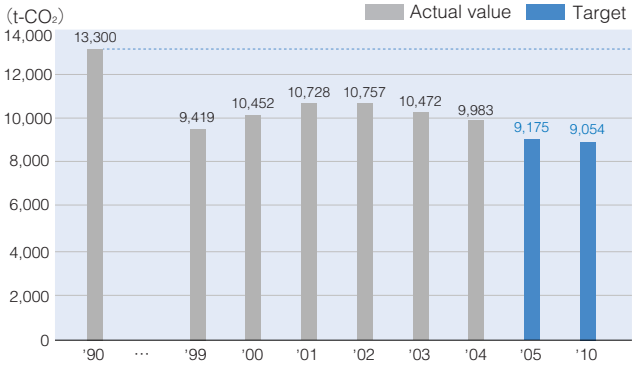
CO_2 emissions from headquarters



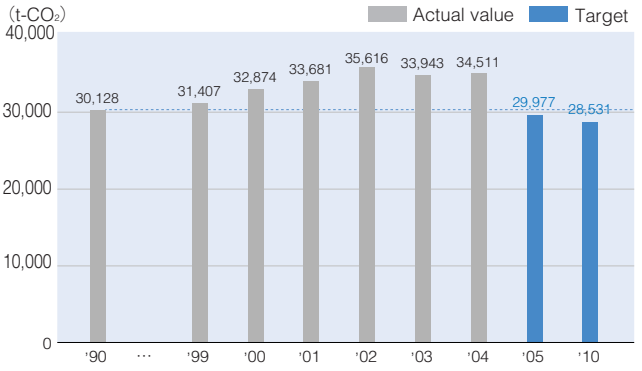
CO_2 emissions from Nishibiwajima Plant



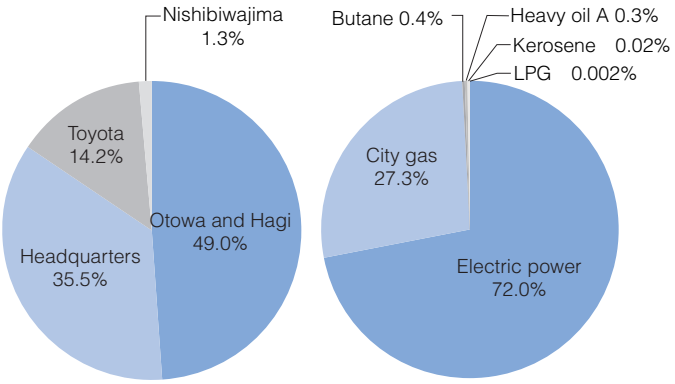
CO_2 emissions from Toyota Plant



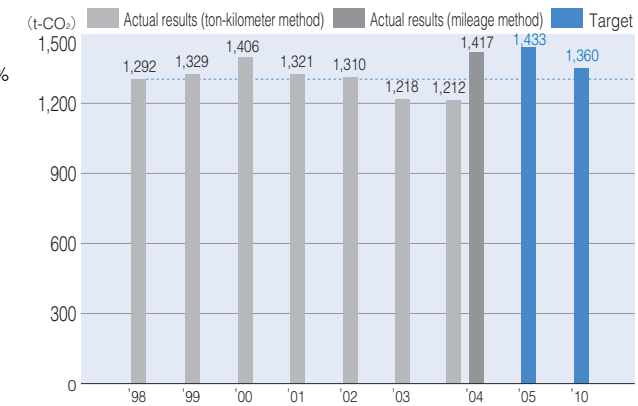
CO_2 emissions from Otowa and Hagi Plants



CO_2 emissions ratio by plants/composition expenses of energy used



CO_2 emissions in transportation process

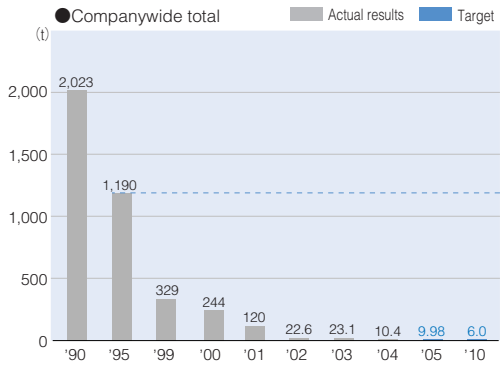


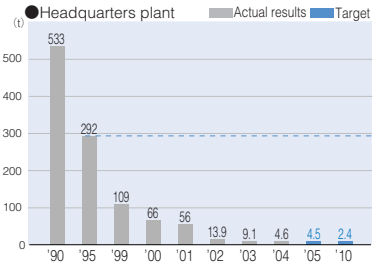
In 2004, the statistics method was changed from the "ton-kilometer method" to the "mileage method," in which CO_2 emissions are calculated from traveling distance and amount of fuel used. The target value is changed to the value after the method is changed over to the "mileage method."

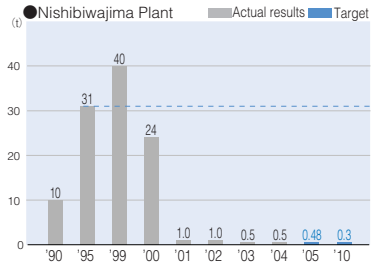
Waste

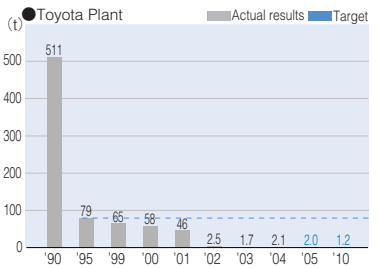
Environmental report P17 Eco-Book P5

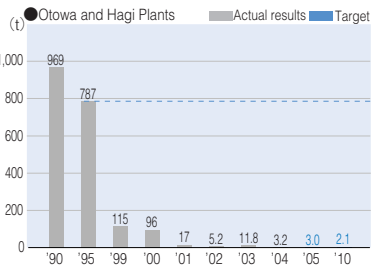
Amount of direct landfill waste



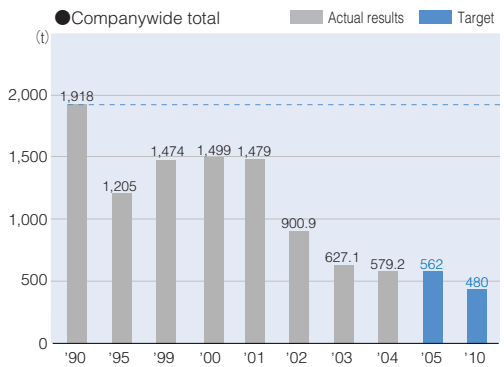


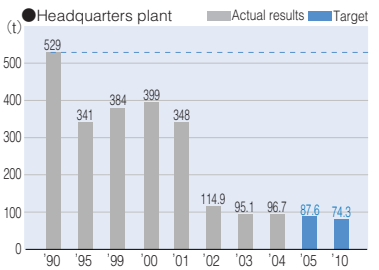


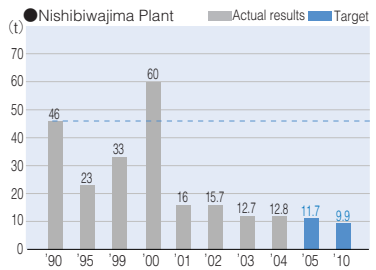


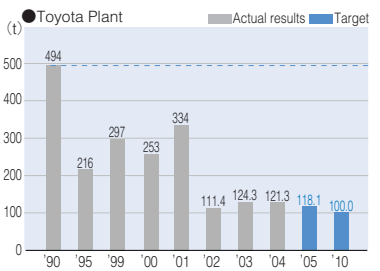


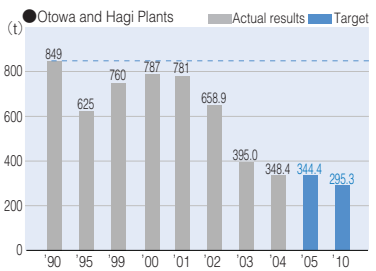
Amount of intermediately processed waste



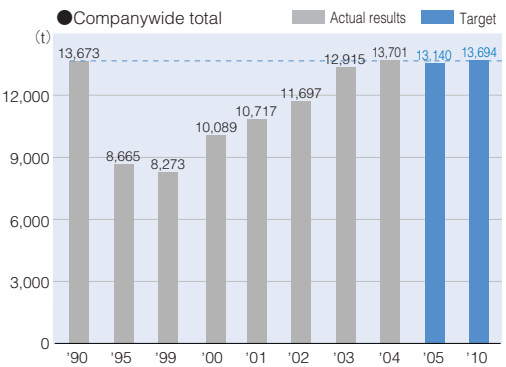


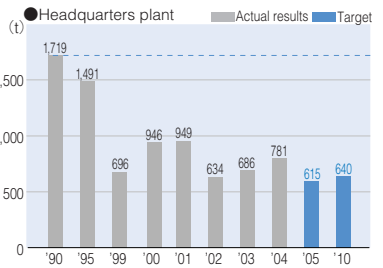


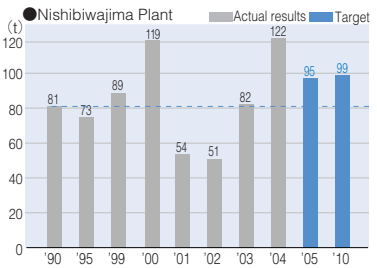


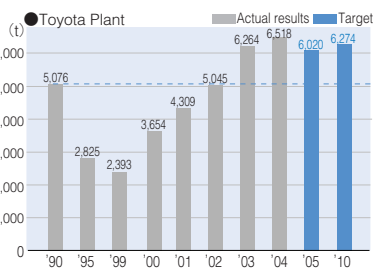


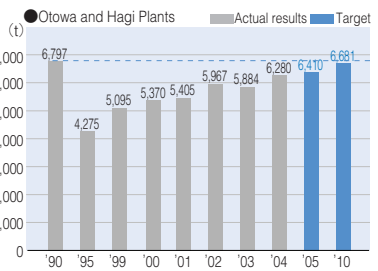
Total production of unused articles







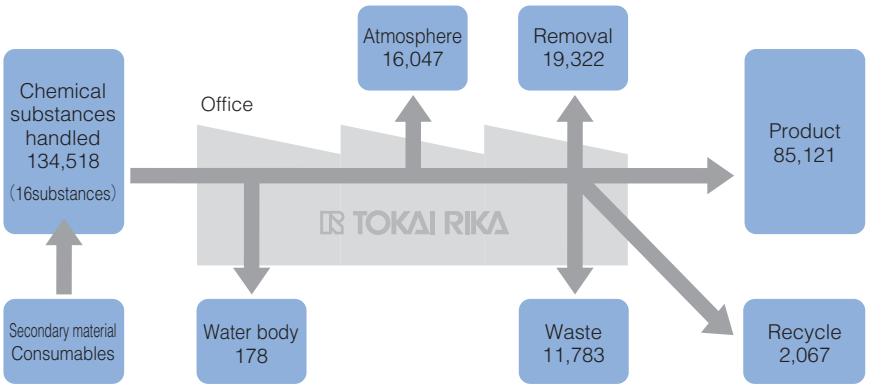




Chemical Substances

Environmental report P19 Eco-Book P7

Amount of substances subject to PRTR that are released and transferred *unit: kg/year



Definition of substances reported under PRTR Law

- Companies must disclose substances that must be reported, if the amount handled reaches or exceeds 1,000 kg/year. However, since hexavalent chromium compounds and nickel compounds are specific category 1 substances, amounts handled exceeding 500 kg/year must be disclosed.
- The disposal amount is the amount of substances disposed of by our company and includes the sewage-region and inverse onerous recycle.
- The amount of recycled substances covers the onerous recycled amount only.
- The amount of substances removed covers those which are varied in processes.
- The amount of substances adhering to products covers those contained in products and consumed in processes or those adhering to products shipped outside the company.

■Headquarters plant

(unit: kg)

Substance name	①	②	③	④	⑤	⑥	⑦
Xylenes	8,115	6,408	0	1,707	0	0	0
Dichloropentafluoropropane (HCFC-225)	1,829	1,462	0	367	0	0	0
Toluene	5,406	3,969	0	1,437	0	0	0
Lead and its compounds	10,522	0	0	0	2,067	0	8,455
Sub-total	25,872	11,839	0	3,511	2,067	0	8,455

■Nishibiwajima Plant

None of the subject substances is consumed in amounts exceeding 1,000 kg per year.

■Toyota Plant

(unit: kg)

Substance name	①	②	③	④	⑤	⑥	⑦
Water-soluble zinc compounds	20,440	0	86	1,906	0	0	18,448
Xylenes	1,163	1,090	0	73	0	0	0
Chromium and trivalent chromium compounds	1,560	0	30	1,530	0	0	0
Hexavalent chromium compounds	2,294	0	0	0	0	1,486	808
Water-soluble copper salts	14,046	0	20	364	0	0	13,662
Nickel	17,800	0	0	0	0	17,800	0
Nickel compounds	20,067	0	42	3,633	0	0	16,392
Sub-total	77,370	1,090	178	7,506	0	19,286	49,310

■Otowa Plant

(unit: kg)

Substance name	①	②	③	④	⑤	⑥	⑦
Ethylene glycol	20,467	0	0	175	0	0	20,292
Xylenes	1,600	1,521	0	73	0	0	6
Toluene	2,119	1,597	0	506	0	0	16
Sub-total	24,186	3,118	0	754	0	0	20,314

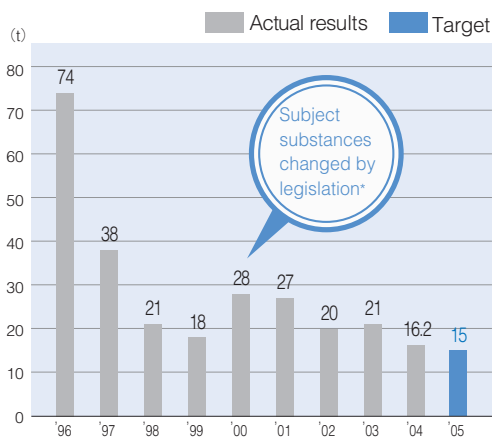
■Hagi Plant

(unit: kg)

Substance name	①	②	③	④	⑤	⑥	⑦
Bisphenol A epoxy resin (liquid)	5,950	0	0	0	0	0	5,950
Di-n-butyl phthalate	1,140	0	0	12	0	0	1,128
Sub-total	7,090	0	0	12	0	0	7,078

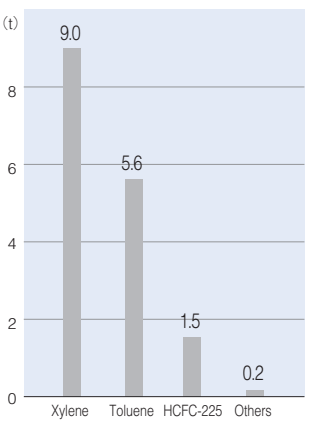
①Amount handled ②Atmosphere ③Water body ④Amount transferred ⑤Recycle ⑥Amount removed ⑦Amount consumed and adhering to products

Changes in emissions of substances subject to PRTR



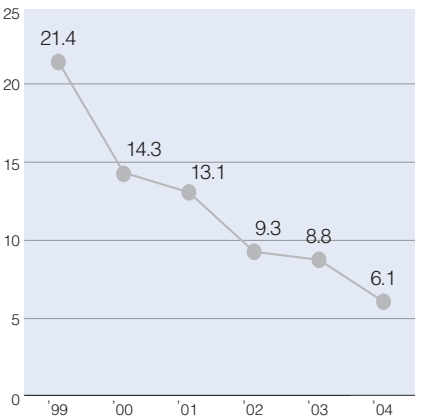
*Because data from 1996 to 1999 are industry-based data before legislation, the number of subject substances and regulated values differ in and after 2000.

Emissions by substance



Almost all are atmospheric emissions of volatile substances.

Emissions per unit consumption ※unit: kg/sales



Emissions per sales are decreasing year by year.

Environmental Data by Sites

Environmental report P29›32 Eco-Book P14

Headquarters Plant

■Atmosphere

Name of substance	Apparatus	Regulated value	Actual results
Soot and dust (g/m³N)	Cold-and warm-water generator	0.10	< 0.004
	Boiler	0.10	< 0.002
	Cogeneration	0.05	< 0.002
NOx (ppm)	Cold-and warm-water generator	150	74
	Boiler	150	47
	Cogeneration	200	160
SOx (m³N/h)	Cold-and warm-water generator	1.10	< 0.005
	Boiler	1.38	< 0.001
	Cogeneration	4.13	< 0.002

■Water quality

Name of substance		Regulated value	Controlled value	Max.	Min.	Mean
pH	Hydrogen ion concentration	5.8~8.6	5.8~8.6	7.8	7.1	7.5
BOD (mg/l)	Biochemical oxygen demand	20	15	13	0.5	3.6
COD (mg/l)	Chemical oxygen demand	20	15	4.3	1.0	2.6
SS (mg/l)	Suspended solid concentration in water	20	15	18	<1.0	5.7
n-Hex (mg/l)	n-hexane extracted substance	2	1.5	<1.0	<1.0	<1.0
T-N (mg/l)	Total nitrogen	60	15	13	3.5	6.6
T-P (mg/l)	Total phosphorus	8	2	0.64	0.02	0.11
Cu (mg/l)	Copper	1	0.5	0.03	N.D.	0.01
Zn (mg/l)	Zinc	5	3	0.12	0.02	0.05
Pb (mg/l)	Lead	0.1	0.05	N.D.	N.D.	N.D.
T-Cr (mg/l)	Total chromium	2	1	N.D.	N.D.	N.D.
Cr6+ (mg/l)	Hexavalent chromium	0.5	0.3	N.D.	N.D.	N.D.
F (mg/l)	Fluorine	8	8	0.4	N.D.	0.2

Toyota Plant

■Atmosphere

Name of substance	Apparatus	Regulated value	Actual results
Soot and dust (g/m³N)	Cold-and warm-water generator	0.10	<0.006
	Cogeneration	0.05	<0.005
NOx (ppm)	Cold-and warm-water generator	150	60
	Cogeneration	200	148
SOx (m³N/h)	Cold-and warm-water generator	1.70	<0.002
	Cogeneration	3.64	<0.016

■Water quality

Name of substance		Regulated value	Controlled value	Max.	Min.	Mean
pH	Hydrogen ion concentration	5.8~8.6	5.8~8.6	7.4	6.7	7.1
BOD (mg/l)	Biochemical oxygen demand	15	15	14	2.7	6.2
COD (mg/l)	Chemical oxygen demand	20	15	7.5	4.8	5.9
SS (mg/l)	Suspended solid concentration in water	15	15	7.0	1.0	3.6
n-Hex (mg/l)	n-hexane extracted substance	2	1.5	<1.0	<1.0	<1.0
T-N (mg/l)	Total nitrogen	60	15	14	8.2	11
T-P (mg/l)	Total phosphorus	8	2	1.2	0.6	1.0
Cu (mg/l)	Copper	0.6	0.5	0.14	0.03	0.07
Zn (mg/l)	Zinc	3	3	1.1	0.1	0.3
Pb (mg/l)	Lead	0.05	0.05	0.01	N.D.	0.001
T-Cr (mg/l)	Total chromium	1	1	0.24	0.05	0.10
Cr6+ (mg/l)	Hexavalent chromium	0.3	0.3	N.D.	N.D.	N.D.
F (mg/l)	Fluorine	8	8	0.3	0.1	0.2

Nishibiwajima Plant

■Atmosphere

Name of substance	Apparatus	Regulated value	Actual results
Soot and dust (g/m³N)	Boiler	0.10	＜0.002
NOx (ppm)	Boiler	150	62
SOx (m³N/h)	Boiler	2.76	＜0.002

Otowa Plant

■Atmosphere

Name of substance	Apparatus	Regulated value	Actual results
Soot and dust (g/m³N)	Cold-and warm-water generator	0.10	＜0.003
	Boiler	0.10	0.0045
NOx (ppm)	Cold -and warm-water generator	150	80
	Boiler	150	110
SOx (m³N/h)	Cold-and warm-water generator	3.0	＜0.005
	Boiler	1.70	0.011

■Water quality

Name of substance		Regulated value	Controlled value	Max.	Min.	Mean
pH	Hydrogen ion concentration	5.8~8.6	5.8~8.6	7.6	6.9	7.2
BOD (mg/l)	Biochemical oxygen demand	20	15	4.2	＜0.5	1.9
COD (mg/l)	Chemical oxygen demand	20	15	8.5	2.6	5.2
SS (mg/l)	Suspended solid concentration in water	20	15	15	1	8
n-Hex (mg/l)	n-hexane extracted substance	2	1.5	＜1	＜1	＜1
T-N (mg/l)	Total nitrogen	60	15	2.4	1.2	1.8
T-P (mg/l)	Total phosphorus	8	2	0.08	0.01	0.03
Cu (mg/l)	Copper	1	0.5	0.03	＜0.01	0.02
Zn (mg/l)	Zinc	5	3	0.22	0.08	0.15
Pb (mg/l)	Lead	0.1	0.05	＜0.01	＜0.01	＜0.01
T-Cr (mg/l)	Total chromium	2	1	＜0.04	＜0.04	＜0.04
Cr6+ (mg/l)	Hexavalent chromium	0.5	0.3	＜0.04	＜0.04	＜0.04
F (mg/l)	Fluorine	8	8	0.1	＜0.1	＜0.1

Hagi Plant

■Water quality

Name of substance		Regulated value	Controlled value	Max.	Min.	Mean
pH	Hydrogen ion concentration	5.8~8.6	5.8~8.6	7.3	6.8	7.1
BOD (mg/l)	Biochemical oxygen demand	20	12.5	2.8	＜0.5	1.0
COD (mg/l)	Chemical oxygen demand	20	12.5	6.3	1.9	4.9
SS (mg/l)	Suspended solid concentration in water	20	15	4	＜1	2
n-Hex (mg/l)	n-hexane extracted substance	2	1	＜0.5	＜0.5	＜0.5
T-N (mg/l)	Total nitrogen	60	15	12	1.2	6.0
T-P (mg/l)	Total phosphorus	8	2	0.1	0.03	0.05
Cu (mg/l)	Copper	1	0.5	0.02	＜0.01	0.01
Zn (mg/l)	Zinc	5	2.5	0.15	0.01	0.04
Pb (mg/l)	Lead	0.1	0.05	＜0.01	＜0.01	＜0.01
T-Cr (mg/l)	Total chromium	2	1	＜0.04	＜0.04	＜0.04
Cr6+ (mg/l)	Hexavalent chromium	0.5	0.3	＜0.04	＜0.04	＜0.04
F (mg/l)	Fluorine	8	8	0.3	＜0.1	0.1

●Atmospheric data

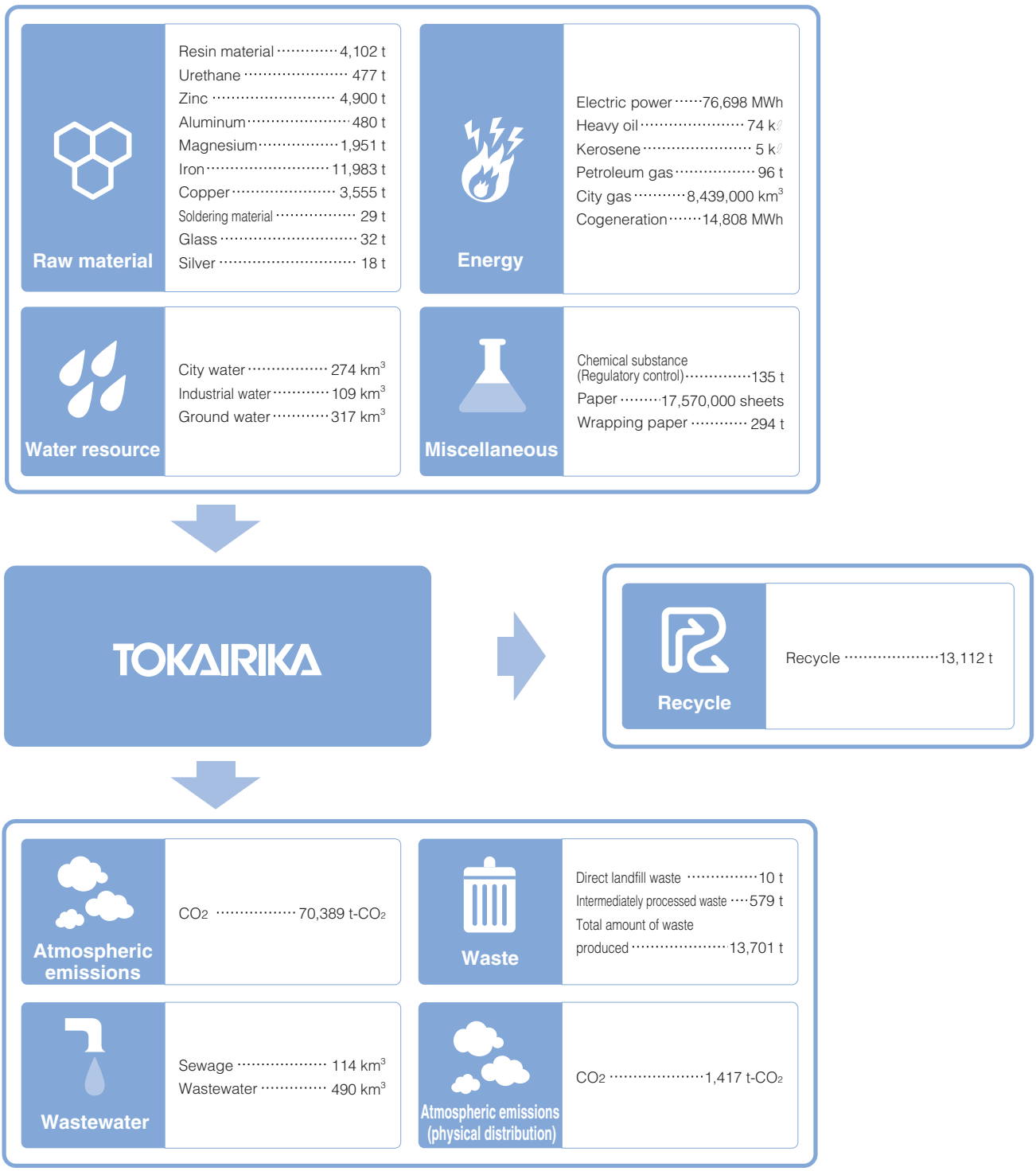
- Regulated values are based on numerical values derived from the Air Pollution Control Law, prefectural bylaws, or the pollution control agreement, whichever is the most severe.
- Measured values are the maximum values measured for each apparatus.
- If there are a large number of the same apparatus, the apparatus to which the severest regulated value is applied is shown.
- The "<"symbol indicates "less than."

●Water quality data

- Regulated values are based on numerical values derived from the Air Pollution Control Law, prefectural bylaws, or the pollution control agreement, whichever is the most severe.
- For the controlled value, the control level voluntarily specified in-house is presented in order to observe the waste water standard.
- The "<" symbol indicates "less than."
- "N. D." indicates less than the detection limit.

Input & Output

Material Flow in Environmental Perspective



●Numerical values presented in data file

1.In publishing the data file, past data were re-verified.
As a result, some numerical values differ from the data presented in environmental reports published in the past.

2.Presented numerical values may differ from any totals when they are added individually for convenience of calculation processing.

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