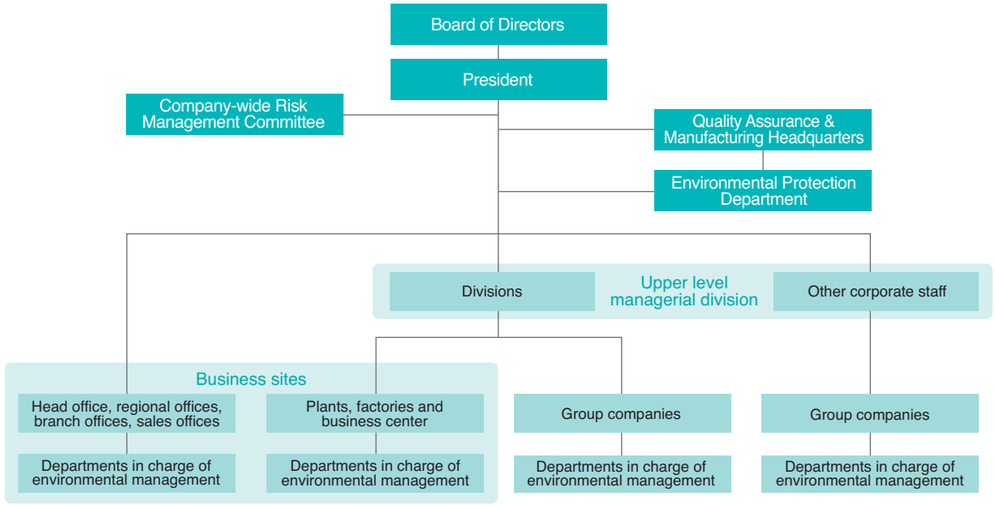
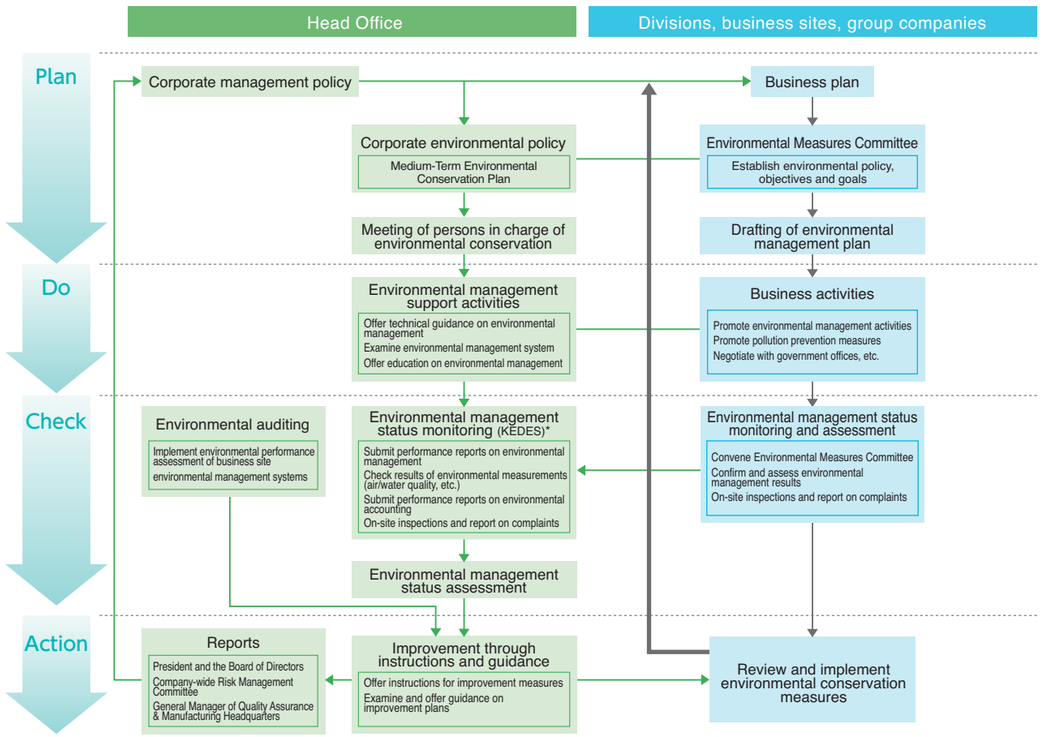
Environmental Management Promotion System

The KUBOTA Group is promoting its environmental management, which is based on the environmental management system, through an organizational structure in which the Board of Directors serves as the highest decision-making body.

Promotional structure



KUBOTA environmental management system



* KEDES: Kubota Ecology Data E-System

Environmental Education

The KUBOTA Group continued its efforts to implement various environmental education programs during FY2012. Along with the training organized by the Environmental Protection Department of KUBOTA, original environmental education is also provided independently in the business sites and affiliates. In addition, KUBOTA supports outside organizations in their environmental education activities.

Results of environment-related education in FY2012

(Only in-house education sponsored or performed by the Environmental Protection Department is included.)

Classification	Course title		Frequency	No. of participants	Course descriptions
Education by employee-level	General course <1> (New recruits, etc.)		2	133	Global environmental issues and the response required of corporations
	CSR training (Employees of "creative" personnel who have worked for nine years)		1	34	Global environmental issues and KUBOTA's environmental corporate management
	Training for employees promoted to managerial positions		2	126	Global environmental issues and KUBOTA's environmental corporate management
	Training for newly appointed foremen		1	18	KUBOTA's environmental corporate management and on-site environmental management
	Training for newly appointed supervisors		2	47	KUBOTA's environmental corporate management and on-site environmental management
Professional education	Basics of environmental management		1	8	Basic education on laws and regulations, environmental risks, environmental conservation, etc.
	Environmental management technology	Pollution prevention technology	1	14	Pollution control laws and theory of pollution control technology
		Energy saving technology	1	17	Energy saving laws, energy saving technology and practical cases
	Waste management		2	26	Waste Management and Public Cleansing Law, practical training in contracts and manifests, etc.
	ISO 14001 environmental auditor training		2	29	The ISO 14001 standard, environmental laws and case studies
	Environmental management education at the Sakai Plant		1	20	Training for ISO 14001 internal auditors
	Environmental management education at KUBOTA Construction Machinery Japan Corporation		2	47	Improvement of operation of the environmental risk management system
	Environmental management education at KUBOTA Construction Machinery Japan Corporation		1	8	Operation of an environmental information management system
Support to education in outside organizations	Hirono Iron Works Co., Ltd.		1	30	Education to train ISO 14001 environmental auditors
	Mega-City Environmental Policy & Environmental Management System Course at Global Environment Center Foundation		1	8	Efforts to take environmental measures at the Sakai Plant
	"Energy Conservation Training for Chinese Governmental Officials," held as part of the International Project for More Efficient Energy Use,commissioned by the Energy Conservation Center, Japan		1	37	Status of energy management activities and examples of energy saving efforts at the Hirakata Plant, and visits to relevant facilities

Environmental Risk Management

The KUBOTA Group is making efforts to identify the environmental risks associated with its business activities and minimize them. To mitigate the impact on the ambient environment to a minimum level, if the Group should have an environmental accident, it carries out regular training based on the procedures established to respond to specific risks in each site.

An example of drills for responding to abnormal and emergency situations (SIAM KUBOTA Metal Technology Co., Ltd.)

Drill for chemical leakage (conducted in June 2011) *Water was used instead of chemicals

ISO 14001 Certification Status (As of March 31, 2012)

All of the KUBOTA Group's production sites in Japan were awarded ISO 14001 certification by the end of FY2007.
Currently, efforts to obtain ISO 14001 certification are underway at its overseas production sites.

KUBOTA's business sites, divisions and business units in Japan

No	Name	Other included organizations and subsidiaries	Main business	Inspecting/ Certifying organ	Date of certification
1	Hanshin Plant	Marushima Factory	Ductile iron pipes, rolls, potassium titanate	LRQA	March 5, 1999
2	Keiyo Plant	Distribution Center	Ductile iron pipes, spiral welded steel pipes	LRQA	July 16, 1998
3	Hirakata Plant		Valves, cast steel, new ceramic materials, and construction machinery	LRQA	September 17, 1999
4	Sakai Plant/Sakai Rinkai Plant		Engines, tractors, small-size construction machinery, etc.	LRQA	March 10, 2000
5	Tsukuba Plant	Eastern Main Parts Center KUBOTA F.I.M. Service Ltd. KS Tsukuba Training Center Kanto Kubota Precision Machinery Co.,Ltd.	Engines, tractors, etc.	LRQA	November 28, 1997
6	Utsunomiya Plant	KUBOTA F.I.M. Service Ltd.KS Utsunomiya Training Center	Rice transplanters and combine harvesters	LRQA	December 8, 2000
7	Ryugasaki Plant	KUBOTA Vending Service Co., Ltd. Ryugasaki Plant KUBOTA Kanto Vender Center Inc. Ryugasaki Plant	Vending machines	DNV	November 13, 1998
8	Shiga Plant		FRP products	JUSE	May 18, 2000
9	Kyuhoji Business Center	KUBOTA Environmental Service Co., Ltd KUBOTA Membrane Corp. KUBOTA Keiso Corp.	Measuring instruments, measuring systems, CAD systems, rice-milling products, waste shredder systems, submerged membranes, and mold temperature controllers	DNV	March 19, 1999
10	Okajima Business Center		Industrial cast iron products, drainage pipes, and other cast iron products	JICQA	December 22, 1999
11	Water & Sewage Engineering Business Unit	Shin-yodogawa Environmental Plant Center	Sewage & sludge water purification, waste water treatment facilities	LRQA	July 14, 2000
12	Pumps Division	KUBOTA Kiko Ltd.	Sewage & water purification plants, pumps and pump stations	LRQA	July 14, 2000
13	Membrane System Business Unit		Filtration membrane unit	LRQA	July 14, 2000

KUBOTA Group: Companies in Japan

No	Name	Other included organizations	Main business	Inspecting/ Certifying organ	Date of certification
1	KUBOTA-C.I. Co., Ltd.	Tochigi Plant Sakai Plant Odawara Plant Kyushu KUBOTA Chemical Co., Ltd.	Plastic pipes and couplings	JUSE	February 22, 2011
2	Nippon Plastic Industry Co., Ltd.	Head office and plant, Mino Plant	Plastic pipes, plastic sheets, etc.	JSA	October 27, 2000
3	KUBOTA Construction Co., Ltd.		Design and construction of civil engineering structures and buildings	JQA	December 22, 2000
4	KUBOTA Environmental Service Co., Ltd.		Installation, maintenance and management of environmental systems for service water, sewage, landfill disposal, raw waste and waste plants, etc.	MSA	November 20, 2002
5	KUBOTA Air Conditioner Co., Ltd.	Tochigi Plant	Central air conditioning systems	JQA	August 27, 2004
6	KUBOTA Pipe Tech Co.		Design, construction, installation and management of pipelines	JCQA	January 24, 2005
7	KUBOTA Precision Machinery Co., Ltd.		Hydraulic valves, hydraulic cylinders, transmissions, hydraulic pumps, hydraulic motors, etc.	LRQA	March 17, 2007

KUBOTA Group: Overseas companies

No	Name	Main business	Inspecting/ Certifying organ	Date of certification
1	SIAM KUBOTA Corporation Co., Ltd. (Navanakorn, Thailand)	Small diesel engines and agricultural machinery	MASCI	February 28, 2003
2	P.T. Kubota Indonesia (Indonesia)	Diesel engines and agricultural machinery	LRQA	February 10, 2006
3	Kubota Metal Corporation (Canada)	Cast steel products	SGS	June 15, 2006
4	P.T. Metec Semarang (Indonesia)	Vending Machines	TUV	March 16, 2011

LRQA: Lloyd's Register Quality Assurance Limited
JUSE: Union of Japanese Scientists and Engineers
MSA: Management System Assessment Center
JQA: Japan Quality Assurance Organization
TUV: TÜV Rheinland Cert GmbH (Germany)
JCQA: Japan Chemical Quality Assurance Ltd.
JICQA: JIC Quality Assurance Ltd.
MASCI: Management System Certification Institute (Thailand)
SGS: SGS Systems & Services Certification Canada Inc. (Canada)
DNV: Det Norske Veritas AS
JSA: Japanese Standards Association

Trends in Major Environmental Indicators

Trends in the last five years

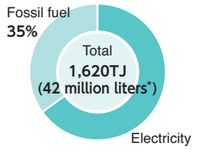
Trends in major environmental load indicators over the last 5 years are as below.
Unless otherwise indicated, the totals include KUBOTA and its consolidated subsidiaries in Japan and overseas.

Environmental indicators			Unit	Year				
				FY2008	FY2009	FY2010	FY2011	FY2012
INPUT		Total energy input (excluding transportation fuel)	TJ	9,620	9,840	8,490	8,500	8,890
		Water resources input	million m^3	5.37	5.09	4.66	4.23	4.45
		Amount of PRTR-designated substances handled *1	tons	8,751	6,621	5,507	5,277	5,321
		Amount of chemical substances handled *2	tons	—	—	—	2,667	4,488
OUTPUT	Atmospheric discharge	CO_2 emissions	kilotons CO_2e	536	575	478	445	468
		SOx emissions *3	tons	8.6	3.9	3.8	5.2	2.9
		NOx emissions *3	tons	80.6	60.3	49.5	66.1	61.7
		Soot and dust emissions *3	tons	3.7	5.6	3.8	5.5	6.4
		Amount of PRTR-designated substances released *1	tons	580	574	475	389	384
		Amount of chemical substances released *2	tons	—	—	—	81	119
	Water system discharge	Public water areas						
		Wastewater discharge *5	million m^3	4.56	4.48	3.86	3.78	3.82
		COD *4	tons	15.5	11.7	15.4	10.8	11.9
		Nitrogen discharge *4	tons	14.3	13.9	10.2	9.5	10.2
		Phosphorous discharge *4	tons	0.45	0.36	0.25	0.35	0.29
		Amount of PRTR-designated substances released *1	kg	166	40	33	35	40
		Sewage lines						
		Wastewater discharge *5	million m^3	0.73	0.90	0.99	0.94	1.01
		Amount of PRTR-designated substances released *1	kg	115	48	20	21	20
	Waste	Amount of waste, etc. discharge	kilotons	159	149	121	128	149
		Amount of waste discharge	kilotons	93	94	74	70	78
		Landfill waste	kilotons	7.0	10.2	3.6	4.3	4.1
		Ratio of Landfill waste *6	%	2.4	6.0	3.2	3.4	2.7

*1: Data for business sites in Japan. *2: Data for overseas business sites. (Not covered by the third-party assurance)
*3: Data for overseas business sites is included from FY2011 onwards. *4: Data for up to FY2009 is total discharge from business sites in Japan subject to total emission control. From FY2010 and FY2011 onwards, data for overseas business sites is included. (FY2011 only for phosphorous) Since FY2012, KUBOTA has targeted the business sites subject to total emission control in Japan and overseas, that discharge to public water areas. (As a result, the Company did not find data for overseas business sites subject to the calculation in FY2012.)
*5: From FY2009 onwards, data from overseas business sites is included. *6: From FY2010 onwards, data from overseas business sites is included.

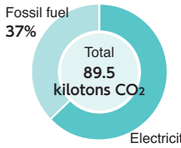
Environmental data on overseas business sites for FY2012 (excerpt)

Total amount of energy input

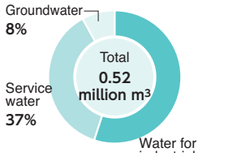


*Crude oil equivalent

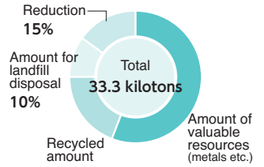
CO_2 emissions



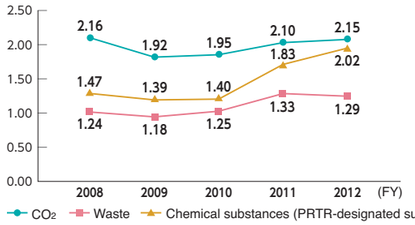
Water resources input



Amount of waste, etc. discharge



Eco-efficiency indicators



The eco-efficiency indicators for CO_2 emissions and the amount of PRTR-designated substances released and transferred improved from the previous fiscal year.

How to read the indicators

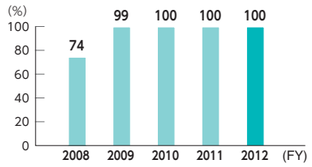
* The improvement of the indicators means that the sales per unit of environmental load such as CO_2 and others have increased, which is considered to indicate higher eco-efficiency.

- Eco-efficiency indicator for CO_2 = Consolidated net sales (million yen) / CO_2 emissions (tons CO_2e) (the KUBOTA Group)
- Eco-efficiency indicator for waste = Consolidated net sales (million yen) / Waste discharge (hundred kg) (the KUBOTA Group)
- Eco-efficiency indicator for chemical substances = Consolidated net sales (million yen) / PRTR-designated substance release and transfer (kg) (the KUBOTA Group in Japan)

Coverage of Corporate Environmental Management

All the consolidated subsidiaries in Japan and overseas have been subject to environmental management since FY2010.

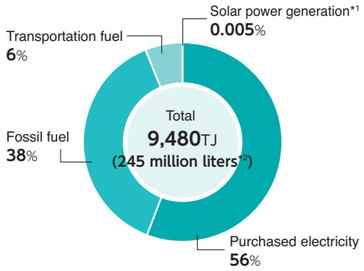
The ratio of corporate coverage



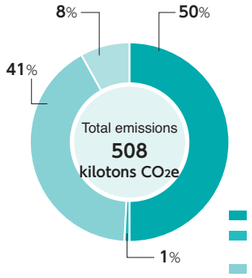
Data Concerning CO_2 Emissions (FY2012 results)

The data are supplementary information about “Stopping Climate Change” on P43 of KUBOTA REPORT 2012.

Total energy input



CO_2 emissions by scope*

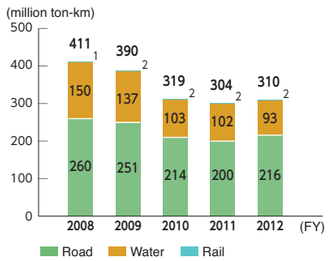


Scope 1: Direct emissions (CO_2 emissions from energy sources)
Scope 1: Direct emissions (CO_2 from non-energy sources, along with CH_4, N_2O, HFC and SF_6)
Scope 2: Indirect emissions (Purchased electricity)
Scope 3: Indirect emissions (CO_2 emissions during distribution)

*1 Heat conversion coefficient calculated with 9.97 MJ/kWh
(Enforcement Regulations for the Law Concerning the Rational use of Energy (Rev. March 31, 2009))
*2 Crude oil equivalent

* Scope of emission sources as defined in the Greenhouse Gas (GHG) Protocol

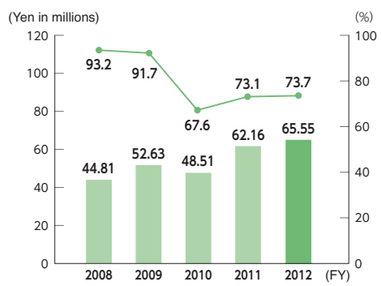
Trends in freight traffic



Green Purchasing

The KUBOTA Group is promoting the purchase of “green” office supplies (paper, stationery, etc.).
In FY2012, the ratio of the amount spent on green products was 73.7%, falling short of the target of 75%. The Group will enhance training and educational activities in its sites in efforts to reach the target.

Amount spent on green products and the ratio to total purchasing amount (Data for business sites in Japan)

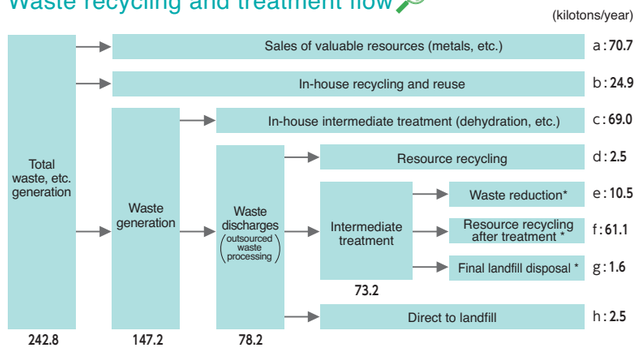


* From FY2010 onwards, the target items of green purchasing were changed.

Data Concerning Resource Recycling (FY2012 results)

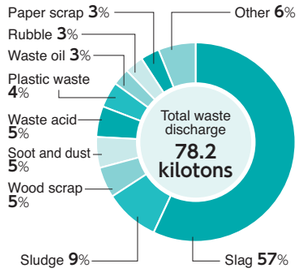
The data are supplementary information about “Working towards a Recycling-based Society” on P44 of KUBOTA REPORT 2012.

Waste recycling and treatment flow

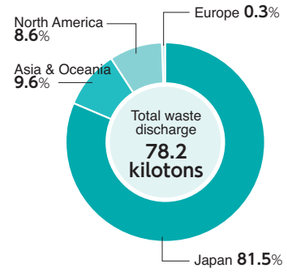


* The amounts of waste reduction, resource recycling after treatment and final landfill disposal were the results of surveys conducted by outside intermediate treatment companies.

Breakdown of waste discharge

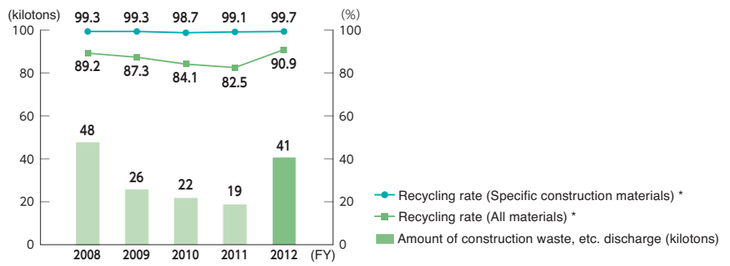


Waste discharge by region



Trends in the recycling of construction waste (Data for business sites in Japan)

In FY2012, generation of construction waste and other related waste increased because we received many large-scale construction orders. The recycling rate increased as a result of selecting waste treatment companies that can recycle waste.



* Recycling rate = [sales of valuable resources + amount recycled + amount reduced (heat recovery)] / amount of construction waste, etc. discharge (including sales of valuable resources) x 100 (%)

Results of PRTR Reporting/Groundwater Monitoring

This is supplementary information for P45 “Controlling Chemical Substances” in KUBOTA REPORT 2012.

Results of PRTR reporting for FY2012

Class I designated chemical substances for which the annual handling quantity equaled one ton or more (0.5 ton or more for Specific Class I designations) for each business site

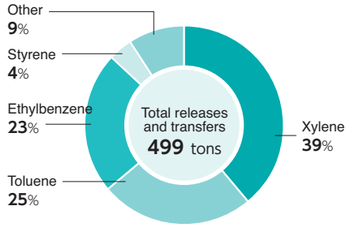
Unit: kg/year (Dioxins: mg-TEQ/year)

Number specified in Cabinet Order	Chemical substance	Releases				Transfers	
		Atmosphere	Public water areas	Soil	On-site landfills	Sewerage	Transfers to off-site
1	Water-soluble zinc compounds	0.0	40	0.0	0.0	20	1,303
53	Ethylbenzene	92,035	0.0	0.0	0.0	0.0	24,546
71	Ferric chloride	0.0	0.0	0.0	0.0	0.0	0.0
80	Xylene	153,907	0.0	0.0	0.0	0.0	39,141
87	Chromium and chromium (III) compounds	0.0	0.0	0.0	0.0	0.0	10,796
132	Cobalt and its compounds	0.0	0.0	0.0	0.0	0.0	3.0
188	N,N-Dicyclohexylamine	0.0	0.0	0.0	0.0	0.0	1,829
239	Organic tin compounds	0.0	0.0	0.0	0.0	0.0	21
240	Styrene	21,191	0.0	0.0	0.0	0.0	0.0
243	Dioxins	0.0006	0.0	0.0	0.0	0.0	0.011
277	Triethylamine	0.0	0.0	0.0	0.0	0.0	0.0
296	1, 2, 4-trimethylbenzene	7,848	0.0	0.0	0.0	0.0	2,600
297	1, 3, 5-trimethylbenzene	2,149	0.0	0.0	0.0	0.0	0.0
300	Toluene	104,591	0.0	0.0	0.0	0.0	19,247
302	Naphthalene	1,930	0.0	0.0	0.0	0.0	0.0
305	Lead compounds	5.2	0.0	0.0	0.0	0.0	965
308	Nickel	1.5	0.0	0.0	0.0	0.0	395
349	Phenol	0.0	0.0	0.0	0.0	0.0	0.0
354	Di-n-butyl phthalate	0.0	0.0	0.0	0.0	0.0	48
392	n-Hexane	0.0	0.0	0.0	0.0	0.0	0.0
400	Benzene	2.2	0.0	0.0	0.0	0.0	0.0
405	Boron compounds	0.0	0.0	0.0	0.0	0.0	1.7
411	Formaldehyde	292	0.0	0.0	0.0	0.0	0.0
412	Manganese and its compounds	0.0	0.0	0.0	0.0	0.0	14,050
438	Methylnaphthalene	11	0.0	0.0	0.0	0.0	0.0
448	Methylenebis (4, 1-phenylene) diisocyanate	0.0	0.0	0.0	0.0	0.0	0.0
453	Molybdenum and its compounds	0.0	0.0	0.0	0.0	0.0	0.0
Total		383,962	40	0.0	0.0	20	114,946

* The data shows the total amount of the substances handled by: production sites of KUBOTA and its subsidiaries in Japan.

Volatile Organic Compound (VOC)

Proportion of release and transfer amounts in FY2012 by substance (Data for production sites in Japan)



Groundwater monitoring

Results of groundwater measurements conducted on the premises of the business sites that used organic chlorine-based compounds in the past are as shown below.

Business site	Substance	Measured groundwater value	Environmental standard value
Tsukuba Plant	Trichloroethylene	Non detected (Less than 0.0001mg/L)	Less than 0.03 mg/L
Utsunomiya Plant	Trichloroethylene	Non detected (Less than 0.001mg/L)	Less than 0.03 mg/L

Environmental Accounting (Data for Business Sites in Japan)

Environmental accounting is employed in order to reflect back into the KUBOTA Group’s business activities as much as possible the quantitative comprehension and analysis of the costs of environmental conservation and the effects that are obtained from those activities, and disclosing information to internal and external stakeholders to promote a wider understanding of its participation in environmental conservation activities.

Environmental conservation costs

Investment in environmental conservation amounted to 1.41 billion yen, up by 0.67 billion yen from the previous fiscal year. Environmental expenses increased by 0.2 billion yen from the previous fiscal year to 8.2 billion yen. Research and development expenses totaled 5.25 billion yen, which accounts for about 64% of all the expenditures for the fiscal year.

(Yen in millions)

Classifications	Main activities	FY2011		FY2012	
		Investment	Expenses	Investment	Expenses
Within the business area cost		450	1,409	654	1,423
Local environmental conservation cost	Prevention of air and water pollution, soil contamination, noise, vibration, etc.	374	492	273	524
Global environmental conservation cost	Prevention of climate change	64	189	287	171
Resource recycling cost	Minimizing waste production, reducing quantity of waste, and recycling	12	728	94	728
Upstream and downstream costs	Collection of used products and commercialization of recycled products	0	19	0	21
Management activities cost	Environmental management personnel, ISO maintenance and implementation, environmental information dissemination	26	1,238	12	1,304
R&D cost	R&D for reducing of product environmental load and developing environment conservation equipment	264	5,127	743	5,246
Social activities cost	Local cleanup activities and membership fees and contributions to environmental groups, etc.	0	1	0	1
Environmental remediation cost	Contributions and impositions, etc.	0	204	0	203
Total		740	7,998	1,409	8,198

Total capital investment (including land) for the corresponding period (consolidated data)	31,100
Total R&D costs for the corresponding period	27,900

Environmental conservation effects

As for effects relating to resources input, water use increased from the previous fiscal year due to failure of related equipment in some business sites. As for effects relating to environmental load and waste discharge, SOx emissions fell in line with the decline in production in some sites and other reasons, and waste discharge increased for such reasons as the increase of the Group’s production volume in Japan and the concrete debris generated as a result of the Great East Japan Earthquake.

Effects	Items	FY2011	FY2012	Increase/ Decrease	Ratio to the previous FY (%)
Environmental effect related to resources input into business activities	Energy consumption (Except for transportation fuel) [units of heat; in terajoules (TJ)]	7,200	7,270	70	101
	Water consumption (million m^3)	3.79	3.94	0.15	104
Environmental effect related to waste or environmental impact originating from business activities	CO_2 emissions (Energy related) (kilotons CO_2)	369	373	4	101
	SOx emissions (tons)	5.1	2.5	−2.6	49
	NOx emissions (tons)	61.7	56.1	−5.6	91
	Soot and dust emissions (tons)	4.4	3.8	−0.6	86
	Releases and transfers of PRTR-designated substances (tons)	509	499	−10	98
	Waste discharge (kilotons)	60	64	4	107
	Waste to landfills (kilotons)	0.9	0.9	0	100

Economic effects

Economic effect of environmental conservation activities was 1.64 billion yen.

(Yen in millions)

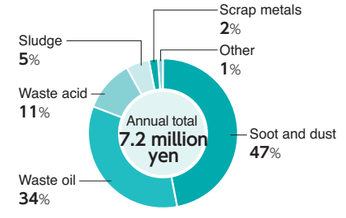
Classifications	Details	Annual effects
Energy conservation measures	Improvement of combustion efficiency of cupola furnaces, and identify and eliminate waste of energy	623
	Review logistics bases and start joint use of containers through “joint round transport”	21
Zero-emissions measures	Reducing waste discharge by means of in-house waste reduction, resource reusing and recycling	7.2
	Sales of valuable resources	985
Total		1,636

〈Environmental accounting principles〉

1) The period covered spans from April 1, 2011 to March 31, 2012. 2) The data of business sites in Japan are considered in the calculation.
3) Data was calculated referring to the Environmental Accounting Guidelines 2005, published by Japan’s Ministry of the Environment.
4) “Expenses” includes depreciation costs. Depreciation cost was calculated based on the standards applied to KUBOTA’s financial accounting, and assets acquired in and after 1998 were considered in the calculation. “Management activities” and “R&D costs” include personnel expenses.
“Resource recycling costs” does not include costs incurred during disposal of construction waste at construction sites.
“R&D costs” represents that which was spent on environmental purposes, calculated on a pro-rata basis.
5) “Economic effects” is obtained only by adding up tangible results and does not include estimated effects.

Effects of cost reduction through zero-emission (Data for business sites in Japan)

Reduction of waste discharge through reuse and recycling of waste provide cost saving effects. In FY2012, the KUBOTA Group curtailed waste-related costs by 7.2 million yen from the previous fiscal year through, for example, a decrease in soot and dust generation as a result of production decrease at some business sites and reduction of waste oil by introducing a more efficient maintenance method.



Conversion Coefficients concerning CO_2

Calculation of CO_2 emissions

Heat conversion coefficients

- FY1991
  - Fuel: Coefficients in the Table of heat generation by energy sources (revised on March 30, 2001) prepared by the Agency for Natural Resources and Energy are used.
  - Electricity: The coefficient of 9.83 MJ/kWh in the Enforcement Regulation for the Law Concerning the Rational Use of Energy (revised on December 27, 2002) of the Ministry of Economy, Trade and Industry is used.
- From FY2008 to FY2009: Coefficients in the Enforcement Regulation for the Law Concerning the Rational Use of Energy (revised on March 29, 2006) of the Ministry of Economy, Trade and Industry are used.
- From FY2010 to FY2012: Coefficients in the Enforcement Regulation for the Law Concerning the Rational Use of Energy (revised on March 31, 2009) of the Ministry of Economy, Trade and Industry are used.

CO_2 emission coefficients

- FY1991
  - Fuel: With coefficients in the Report on Survey of Carbon Dioxide Emissions (1992) of the Environment Agency, the formula below is used: Carbon dioxide (tons CO_2) = carbon equivalent (tons C) x 3.664
- FY2008
  - Fuel: Coefficients in the Ministerial Ordinance Concerning Calculation of Volume of Greenhouse Gas Emission through Pursuit of Special Emitter's Business Activities (Ministerial Ordinance No. 3 of the Ministry of Economy, Trade and Industry and the Ministry of the Environment, March 2006) are used.
  - Electricity: Coefficients in the Ministerial Ordinance above and emission coefficients by electricity supplier are used for domestic values.
    For calculating overseas emissions, coefficients from the Report on the CO_2 Emissions Intensity of the Power Sector of Various Countries Ver. 3 (June 2006) compiled by the Japan Electrical Manufacturers' Association are used.
- FY2009
  - Fuel: The coefficients stipulated in the Manual for Calculation and Report of Greenhouse Gas Emissions Ver. 2.4 (March 2009) of the Ministry of the Environment and the Ministry of Economy, Trade and Industry are used.
  - Electricity: The above coefficients and emission coefficients published by electricity suppliers are used for calculating domestic emissions.
    For calculating overseas emissions, coefficients from the Report on the CO_2 Emissions Intensity of the Power Sector of Various Countries Ver. 3 (June 2006) compiled by the Japan Electrical Manufacturers' Association are used.
- From FY2010 to FY2012
  - Fuel: Coefficients in the List of Calculation Methods and Emission Coefficients for the Calculation, Reporting and Public Announcement System" (revised in March 2010) of the Ministry of the Environment and the Ministry of Economy, Trade and Industry are used.
  - Electricity: The above effective emission coefficients (before reflecting carbon credits) and those published by electricity suppliers are used for calculating domestic emissions.
    For calculating overseas emissions, emission coefficients of the respective countries published in the Greenhouse Gas Protocol Initiative are used.

Scope of CO_2 emissions calculation

- Only the production sites of KUBOTA are covered in the calculation for FY1991. The scope includes non-production sites and affiliates from FY2005, and the number of the covered business sites has increased since then. From FY2010, KUBOTA and all of its consolidated subsidiaries are covered in the calculation.
- From the CSR Report 2009, CO_2 emissions from the Building and Housing Materials Division, which was spun off from the KUBOTA Group into a separate company in December 2003, are excluded from the KUBOTA Group's total CO_2 emissions. Accordingly, the amount of CO_2 emissions of FY1991 shown in this report is smaller than the amount disclosed in the previous reports.
- Greenhouse gases other than energy-originated carbon dioxide in Japan were added to the calculation from FY2007. Production sites outside Japan are also included in the calculation from FY2012.

* From 2007, annual HFC, PFC and SF_6 emissions presented are data covering from January to December of each year.

Calculation of energy input and CO_2 emissions during distribution

Fuel consumption and CO_2 emissions in truck transportation

- FY2008: Calculation is based on the values from "energy consumption to transport one ton of cargo over one kilometer (FY2005)" in the Survey on Transport Energy 2007 of the Ministry of Land, Infrastructure and Transport.
- From FY2009 to FY2012: Fuel consumption and CO_2 emissions are calculated using the ton-kilometer method stipulated in the Manual for Calculation and Report of Greenhouse Gas Emissions Ver. 2.4 (March 2009) of the Ministry of the Environment and the Ministry of Economy, Trade and Industry.
  Fuel consumption during transportation = ton-kilometer transported x fuel consumption per ton-kilometer x per-unit heat value
  CO_2 emissions = fuel consumption during transportation x CO_2 emission coefficient x 44 / 12

Fuel consumption and CO_2 emissions except for truck transportation

- Fuel consumption and CO_2 emissions are calculated using the ton-kilometer method stipulated in the Manual for Calculation and Report of Greenhouse Gas Emissions Ver. 3.2 (April 2011) of the Ministry of the Environment and the Ministry of Economy, Trade and Industry.
  Fuel consumption during transportation = ton-kilometer transported x fuel consumption per ton-kilometer x per-unit heat value
  CO_2 emissions = ton-kilometer transported x CO_2 emissions per ton-kilometer transported by means of transport

* The calculation of CO_2 emissions during distribution covers KUBOTA and its consolidated production subsidiaries in Japan.

Calculation Standards of Environmental Performance Indicators in KUBOTA REPORT 2012

Period covered: April 1, 2011 to March 31, 2012 (January 1, 2011 to December 31, 2011 for data in countries other than Japan)
Organizations covered: KUBOTA Corporation and its 65 consolidated subsidiaries in Japan and 85 consolidated subsidiaries in other countries
* The data of Kverneland ASA and other overseas companies that became consolidated subsidiaries of KUBOTA during the period from January to March 2012 are not included in the FY2012 data because the period is not covered in this calculation.
Calculation method: The Environmental Reporting Guidelines 2007 released by the Ministry of the Environment of Japan was used as a reference. For specific calculation methods, please refer to the table below.

	Environmental performance indicators	Unit	Calculation method
INPUT	Total energy input	TJ	(Amount of purchased electricity + amount of solar power generation) x per-unit heat value*1 + Σ [amount of each fuel consumed x per-unit heat value of each fuel*1] (including transportation fuel)
INPUT	Water resources input	million m³	Total amount of service water, industrial water and ground water consumed (water resources input = water consumption)
INPUT	Amount of PRTR-designated substances handled	tons	Total amount of chemical substances handled, which are designated as Class I under the PRTR Law and whose annual total amount handled by each business site is one ton or more (or 0.5 ton or more in case of Specific Class I Designated Chemical Substances). The data of the Group's production sites in Japan are considered in the calculation.
INPUT	Amount of chemical substances handled (overseas business sites)	tons	Total amount of chemical substances handled by the sites covered by the Toxics Release Inventory (TRI) Program, the US EPA, the European Pollutant Emission Register (EPER), the European Pollutant Release and Transfer Register (E-PRTR), Reporting to the National Pollutant Release Inventory (Canada) and other laws and regulations, and total handling amount of toluene, ethylbenzene and xylene whose amount handled is one ton or more per year in other sites. The data of the Group's overseas production sites are considered in the calculation.
OUTPUT	SOx emissions	tons	Amount of fuel consumed (kg) x sulfur content in the fuel (Wt %) / 100 x 64 / 32 x [(1 - desulphurization efficiency) / 100] x 10^{-3}, or amount of SOx emitted per hour (m^3N/h) x annual operation hours of the relevant facility (h) x 64 / 22.4 x 10^{-3} Until FY2010, the organizations included in this calculation are the smoke and soot generating facilities of the Group's sites in Japan as defined by the Air Pollution Control Law. From FY2011, the facilities which are included in the calculation are subject to the law and installed in the Group's business sites in Japan and overseas.
OUTPUT	NOx emissions	tons	NOx concentration (ppm) x 10^{-6} x amount of gas emitted per hour (m^3N/h) x annual operation hours of the relevant facility (h) x 46 / 22.4 x 10^{-3} Until FY2010, the organizations included in this calculation are the smoke and soot generating facilities of the Group's sites in Japan as defined by the Air Pollution Control Law. From FY2011, the facilities which are included in the calculation are subject to the law and installed in the Group's business sites in Japan and overseas.
OUTPUT	Soot and dust emissions	tons	Soot and dust concentration (g/m^3N) x amount of gas emitted per hour (m^3N/h) x annual operation hours of the relevant facility (h) x 10^{-6} Until FY2010, the organizations included in this calculation are the smoke and soot generating facilities of the Group's sites in Japan as defined by the Air Pollution Control Law. From FY2011, the facilities which are included in the calculation are subject to the law and installed in the Group's business sites in Japan and overseas.
OUTPUT	Chemical substance released (overseas business sites)	tons	Total amount of chemical substances released from the sites covered by the Toxics Release Inventory (TRI) Program, the US EPA, the European Pollutant Emission Register (EPER), the European Pollutant Release and Transfer Register (E-PRTR), Reporting to the National Pollutant Release Inventory (Canada) and other laws and regulations, and total handling amount of toluene, ethylbenzene and xylene whose amount handled is one ton or more per year in other sites. The data of the Group's overseas production sites are considered in the calculation.
OUTPUT	VOC (overseas business sites)	tons	Total handling amount of toluene, ethylbenzene and xylene whose amount handled is one ton or more per year in the Group's overseas sites.
OUTPUT	Amount of discharge water (to public water areas and through sewage)	million m³	Amount of water discharged to public water areas or through sewage, including rain water and spring water. The data of the Group's business sites in Japan alone are considered in the calculation until FY2008, and the data of the Group's overseas business sites are also included in the calculation from FY2009.
OUTPUT	Amount of COD, nitrogen and phosphorus discharge	tons	COD, nitrogen or phosphorus concentration (mg/L) x amount of effluent discharged to public water area (m^3) x 10^{-6} Data for up to FY2009 is total discharge from business sites in Japan subject to total emission control. From FY2010 and FY2011 onwards, data for overseas business sites is included. (FY2011 only for phosphorous) Since FY2012, KUBOTA has targeted business sites subject to total emission control in Japan and overseas, that discharge to public water areas.
Stopping Climate Change	CO_2 emissions	kilotons CO_2e	Amount of purchased electricity x CO_2 emission coefficient*1 + Σ (amount of each fuel consumed x per-unit heat value of each fuel*1 x CO_2 emission coefficient*1 of each fuel) + CO_2 emissions from non-energy sources*2 + non-CO_2 greenhouse gas emissions*2
Stopping Climate Change	CO_2 emissions per unit of sales (KUBOTA Group)	%	CO_2 emissions per unit of sales = total CO_2 emissions of the KUBOTA Group / consolidated net sales CO_2 emissions per unit of sales of each fiscal year / CO_2 emissions per unit of sales in FY2009 x 100 (%) (as shown in the graph on page 43 of KUBOTA REPORT 2012)
Stopping Climate Change	CO_2 emissions per unit of sales (production sites of KUBOTA)	%	CO_2 emissions per unit of sales = total CO_2 emissions of KUBOTA production sites / unconsolidated net sales CO_2 emissions per unit of sales of each fiscal year / CO_2 emissions per unit of sales in FY1991 x 100 (%) (as shown in the graph on page 43 of KUBOTA REPORT 2012)
Stopping Climate Change	Freight traffic	ton-km	Σ (Freight volume per shipment [ton] x distance traveled [km])
Stopping Climate Change	CO_2 emissions during distribution	kilotons CO_2	As shown in "Conversion coefficients concerning CO_2" The data of KUBOTA Corporation and consolidated production subsidiaries in Japan are considered in the calculation.
Stopping Climate Change	CO_2 emissions during distribution per unit of sales	%	CO_2 emissions during distribution / consolidated net sales CO_2 emissions per unit of sales of each fiscal year / CO_2 emissions per unit of sales in FY2009 x 100 (%) (as shown in the graph on page 43 of KUBOTA REPORT 2012)
Working towards a Recycling-based Society	Amount of waste, etc. discharge	tons	Sales of valuable resources + amount of waste discharge
Working towards a Recycling-based Society	Amount of waste discharge	tons	Amount of industrial waste discharge + amount of general waste discharged from business activities
Working towards a Recycling-based Society	Waste discharge per unit of sales	%	Waste discharge per unit of sales = amount of waste discharge / consolidated net sales Waste discharge per unit of sales of each fiscal year / waste discharge per unit of sales in FY2009 x 100 (%) (as shown in the graph on page 44 of KUBOTA REPORT 2012)
Working towards a Recycling-based Society	Amount of landfill disposal	tons	Direct landfill disposal + Final landfill disposal following intermediate treatment
Working towards a Recycling-based Society	Landfill ratio	%	Amount of landfill disposal / amount of waste, etc. discharge x 100 (%) The data of KUBOTA Group's business sites in Japan alone are considered in the calculation until FY2009, and the data of the Group's overseas sites are also included in the calculation from FY2010.
Working towards a Recycling-based Society	Ratio of business sites that have achieved zero emissions	%	Number of the business sites certified by the Environmental Protection Department of KUBOTA as having achieved the zero emissions (landfill ratio of 0.5% or less) / number of the production sites in Japan and overseas x 100 (%)
Working towards a Recycling-based Society	Amount of recycled waste	tons	Amount of waste directly recycled by outside contractors + amount of waste recycled by outside contractors after intermediate treatment The amount of recycled waste does not include the amount of volume reduction by outside contractors through intermediate treatment (amount of water removed and amount of waste incinerated with or without heat recovery).
Working towards a Recycling-based Society	Ratio of recycled waste (excluding volume reduction)	%	(Sales of valuable resources + recycled waste) / (waste, etc. discharge - volume reduction in intermediate treatment by outside contractors) x 100 (%)
Working towards a Recycling-based Society	Amount of construction waste, etc. discharge	tons	Amount of construction waste discharge (including waste generated from construction other than specific construction materials) + sales of valuable resources (generated from construction)
Working towards a Recycling-based Society	Recycling rate of construction waste (specific construction materials) Recycling rate of construction waste (all materials)	%	Recycling rate of construction waste (specific construction materials): Recycling rate of the specific waste construction materials stipulated in the Construction Material Recycling Law Recycling rate of construction waste (all materials): Recycling rate of waste construction materials including waste generated from construction other than specific construction materials Recycling rate = (sales of valuable resources + amount recycled + amount reduced (with heat recovery)) / amount of construction waste, etc. discharge (including sales of valuable resources) x 100 (%)
Working towards a Recycling-based Society	Water consumption per unit of sales	%	Water consumption per unit of sales = water consumption / consolidated net sales Water consumption per unit of sales of each fiscal year / water consumption per unit of sales in FY2009 x 100 (%) (as shown in the graph on page 44 of KUBOTA REPORT 2012)
Controling Chemical Substances	Amount of PRTR-designated substances released and transferred	tons	Total release and transfer amount of the chemical substances designated as Class I under the Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof (the PRTR Law) whose amount handled by each business site is one ton or more (or 0.5 ton or more for Specific Class I Designated Chemical Substances) per year Amount released = amount discharged to the atmosphere + amount discharged to public water areas + amount discharged to soil + amount disposed of by landfill in the premises of the business site Amount transferred = amount discharged to sewerage + amount transferred out of the business site as waste The amount of each substance released and transferred is calculated in accordance with Manual for PRTR Release Estimation Methods Ver. 4.1 (March 2011) of the Ministry of the Environment and the Ministry of Economy, Trade and Industry, and Manual for PRTR Release Estimation Methods in the Steel Industry Ver. 10 (March 2011) of the Japan Iron and Steel Federation. The data of the Group's production sites in Japan are considered in the calculation.
Controling Chemical Substances	Amount of PRTR-designated substances released and transferred per unit of sales	%	PRTR-designated substances released and transferred per unit of sales = amount of PRTR-designated substances released and transferred / consolidated net sales PRTR-designated substances released and transferred per unit of sales of each fiscal year / PRTR-designated substances released and transferred per unit of sales in FY2009 x 100 (%) (as shown in the graph on page 45 of KUBOTA REPORT 2012)
Other	Eco-efficiency indicator (CO_2)	million yen/ tons CO_2e	Consolidated net sales / amount of CO_2 emitted by the KUBOTA Group
Other	Eco-efficiency indicator (waste)	million yen/ hundred kg	Consolidated net sales / amount of waste discharged by the KUBOTA Group
Other	Eco-efficiency indicator (chemical substances)	million yen/kg	Consolidated net sales / amount of PRTR-designated substances released and transferred by the Group's production sites in Japan
Other	Green purchasing ratio	%	Amount spent to purchase eco-friendly office supplies (paper, stationery, etc.) / total amount spent to purchase items subject to green purchasing x 100 (%) The data of the Group's business sites in Japan are considered in the calculation. The eco-friendly goods are purchased through the office supply procurement site operated by the KUBOTA Group.
Other	Amount of recycled water	million m³	Amount of the water purified in on-site effluent treatment facilities and recycled (excluding the recycled cooling water used)

*1 Presented in "Conversion Coefficients concerning CO_2" (p. 48-⑨)
*2 The calculation uses the method stipulated in the Guidelines for Calculating Greenhouse Gas Emissions from Businesses, of the Ministry of the Environment.

Production sites data (FY2012 results)

Data on KUBOTA production sites in Japan

Item	Unit	Hanshin Plant (Mukogawa)	Hanshin Plant (Amagasaki)	Keiyo Plant (Funabashi)	Keiyo Plant (Ichikawa)	Hirakata Plant	Okajima Business Center	Sakai Plant	Sakai Rinkai Plant	Utsunomiya Plant	Tsukuba Plant	Kyuhoji Business Center	Ryugasaki Plant	Shiga Plant
INPUT														
Energy	Fossil fuel	Crude oil equivalent kL	15,761	610,907	5,490	212,781	21,440	830,997	60	2,311	5,304	205,593	5,822	225,674	3,951	153,134	2,819	109,270	1,540	59,698	5,101	197,700	224	8,698	228	8,838	663	25,699
	Purchased power	MWh	38,460	376,799	32,311	322,145	44,628	433,928	4,295	42,816	44,299	433,549	42,403	411,996	34,131	332,969	16,678	162,726	6,399	63,121	43,163	420,980	2,333	22,902	3,042	30,333	2,552	25,445
	Total	Crude oil equivalent kL	25,483	987,706	13,801	534,927	32,635	1,264,926	1,164	45,128	16,490	639,142	16,452	637,669	12,541	486,103	7,018	271,997	3,169	122,819	15,962	618,680	815	31,600	1,011	39,171	1,320	51,144
Water usage		thousand m³	728		215		1,173		10		187		97		130		50		260		202		13		11		98	
OUTPUT																												
CO_2 emission	CO_2 emissions from energy sources	tons CO_2e	63,285		20,676		89,108		1,757		24,449		34,857		19,462		12,084		5,774		27,522		1,207		1,589		2,075	
Waste	Discharge amount	tons	10,940		4,464		18,633		279		3,728		16,250		1,172		709		338		2,431		88		110		334	
	Recycling ratio	%	99.0		99.9		99.8		99.9		99.4		100.0		99.8		100.0		98.7		99.8		98.1		99.5		98.0	

Exhaust gas	Main smoke and soot generating facilities		Melting furnaces			Heating furnaces			—			Heating furnaces			Melting furnaces			Drying furnaces			—			Boilers			Boilers			—			Boilers			Boilers		
		Unit	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement
	SOx	Total emission control and K-value control: m³N/h	K-value control	0.22	0.002	*Use of town gas with zero sulfur content			No smoke and soot generating facilities			*Use of town gas with zero sulfur content			Total emission control	2.859	0.175	Total emission control	1.477	0.129	No smoke and soot generating facilities			*Use of town gas with zero sulfur content			K-value control	17.5	0	No smoke and soot generating facilities			*Use of town gas with zero sulfur content			*Use of town gas with zero sulfur content		
	NOx	Total emission control: m³N/h, Concentration control: ppm	Total emission control	24.32	4.13	Total emission control	2.24	0.406				Total emission control	9.168	0.629	Total emission control	2.4	0.519	Total emission control	1.535	0.484				Concentration control	150	25	Concentration control	230	100				Concentration control	230	52	Concentration control	180	31
	Soot and dust	g/m³N	Concentration control	0.1	0.0014	Concentration control	0.1	0.0011				Concentration control	0.1	0.008	Concentration control	0.05	0.02	Concentration control	0.1	0.025				Concentration control	0.1	0.001	Concentration control	0.25	0				Concentration control	0.2	Less than 0.01	—	—	—

*Total emission control: Control value or agreed value by plant and the measurement value *K-value control and concentration control: Control and measurement values of major facilities (Maximum value)

Drainage			Unit	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement
	Public water areas	pH	Minimum value, Maximum value	5.8~8.6	6.8,7.7	–	–	5.0~9.0	6.4,7.2	5.0~9.0	7.4,7.5	5.8~8.6	6.4,7.5	–	–	–	–	5.8~8.6	6.0,7.1	5.8~8.6	7.1,7.8	5.8~8.6	7.4,7.7	–	–	–	–	6.0~8.5	7.4,7.9								
		BOD	mg/L	30	5	–	–	–	–	60	–	25	3.1	–	–	–	–	30	7.3	25	10.7	20	4.6	–	–	–	–	30	1.5								
		COD	mg/L	20	8	–	–	20	2.1	60	15.2	25	3.4	–	–	–	–	30	16.2	–	–	20	9	–	–	–	–	30	2.8								
		Nitrogen	mg/L	120	0.2	–	–	20	2.73	70	22.7	120	6.0	–	–	–	–	120	27.4	–	–	60	14	–	–	–	–	12	0.9								
		Phosphorus	mg/L	16	6.2	–	–	2	0.04	7	2.4	16	0.36	–	–	–	–	16	5.06	–	–	8	1.6	–	–	–	–	1.2	ND								
		Hexavalent chromium	mg/L	0.35	ND	–	–	0.05	ND	–	–	0.05	ND	–	–	–	–	0.5	ND	0.1	–	0.5	ND	–	–	–	–	0.05	ND								
		Lead	mg/L	0.1	ND	–	–	0.1	ND	0.1	ND	0.01	0.013	–	–	–	–	0.1	ND	0.1	–	0.1	ND	–	–	–	–	0.1	ND								
		COD, total emission control	kg/day	97.44	14.4	–	–	110.5	14.90	4	0.22	38.0	2.35	–	–	–	–	2.13	0.84	–	–	–	–	–	–	–	–	–	–								
		Nitrogen, total emission control	kg/day	40.51	15.7	–	–	114.7	9.2	2.865	0.19	38.3	2.24	–	–	–	–	8.53	0.8	–	–	–	–	–	–	–	–	–	–								
		Phosphorus, total emission control	kg/day	1.424	0.5	–	–	11.65	0.08	0.391	0.019	4.4	0.19	–	–	–	–	1.14	0.04	–	–	–	–	–	–	–	–	–	–								
	Sewerage lines	pH	Minimum value, Maximum value	5.7~8.7	6.5,8.2	5.7~8.7	6.3,7.7	–	–	–	–	–	–	5.7~8.7	6.9,7.3	5.7~8.7	7.0,7.1	–	–	–	–	–	–	5.7~8.7	6.8,7.6	5~9	6.6,6.7	–	–								
		BOD	mg/L	300	10	300	54	–	–	–	–	–	–	600	50	300	100	–	–	–	–	–	–	300	11	600	120	–	–								
		COD	mg/L	–	–	–	–	–	–	–	–	–	–	–	–	–	270	–	–	–	–	–	–	–	–	600	–	–	–								
		SS	mg/L	300	4	300	80	–	–	–	–	–	–	600	8	300	20	–	–	–	–	–	–	300	10	600	ND	–	–								

*Total emission control: Control value by plant and the measurement value *Concentration control: Control value or agreed value by plant and the measurement value (Maximum value)

Results of PRTR Reporting (Unit: kg/year)

Site name	Substance name	Cabinet Order No.	Released amount				Transferred amount	
			Atmosphere	Public water areas	Soil	On-site landfills	Sewerage	Transfers to off-site
Hanshin Plant (Mukogawa)	Ethylbenzene	53	5,355	0.0	0.0	0.0	0.0	0.0
	Xylene	80	7,363	0.0	0.0	0.0	0.0	0.0
	Triethylamine	277	0.0	0.0	0.0	0.0	0.0	0.0
	1, 2, 4-trimethylbenzene	296	2,367	0.0	0.0	0.0	0.0	0.0
	Toluene	300	15,257	0.0	0.0	0.0	0.0	0.0
	Nickel	308	0.0	0.0	0.0	0.0	0.0	194
	Phenol	349	0.0	0.0	0.0	0.0	0.0	0.0
	Methylenebis(4,1-phenylene) diisocyanate	448	0.0	0.0	0.0	0.0	0.0	0.0
Hanshin Plant (Marushima)	Ethylbenzene	53	10,838	0.0	0.0	0.0	0.0	8.0
	Xylene	80	27,740	0.0	0.0	0.0	0.0	11
	Toluene	300	26,098	0.0	0.0	0.0	0.0	199
	Nickel	308	0.0	0.0	0.0	0.0	0.0	157
Hanshin Plant (Amagasaki)	Chromium and Chromium (III) compounds	87	0.0	0.0	0.0	0.0	0.0	386
	Toluene	300	1,882	0.0	0.0	0.0	0.0	0.0
	Nickel	308	1.5	0.0	0.0	0.0	0.0	0.4
	Manganese and its compounds	412	0.0	0.0	0.0	0.0	0.0	6,893
	Molybdenum and its compounds	453	0.0	0.0	0.0	0.0	0.0	0.0

Site name	Substance name	Cabinet Order No.	Released amount				Transferred amount	
			Atmosphere	Public water areas	Soil	On-site landfills	Sewerage	Transfers to off-site
Keiyo Plant (Funabashi)	Ethylbenzene	53	17,564	0.0	0.0	0.0	0.0	347
	Xylene	80	28,148	0.0	0.0	0.0	0.0	532
	Triethylamine	277	0.0	0.0	0.0	0.0	0.0	0.0
	1, 2, 4-trimethylbenzene	296	2,255	0.0	0.0	0.0	0.0	10
	Toluene	300	45,307	0.0	0.0	0.0	0.0	631
	Nickel	308	0.0	0.0	0.0	0.0	0.0	29
	Phenol	349	0.0	0.0	0.0	0.0	0.0	0.0
	Manganese and its compounds	412	0.0	0.0	0.0	0.0	0.0	32
	Methylenebis(4,1-phenylene) diisocyanate	448	0.0	0.0	0.0	0.0	0.0	0.0
Keiyo Plant (Distribution Center)	Ethylbenzene	53	6,478	0.0	0.0	0.0	0.0	132
	Xylene	80	23,052	0.0	0.0	0.0	0.0	470
	Toluene	300	7,703	0.0	0.0	0.0	0.0	157
Keiyo Plant (Ichikawa)	Manganese and its compounds	412	0.0	0.0	0.0	0.0	0.0	0.0
Hirakata Plant	Ethylbenzene	53	955	0.0	0.0	0.0	0.0	19,435
	Xylene	80	1,773	0.0	0.0	0.0	0.0	29,230
	Chromium and Chromium (III) compounds	87	0.0	0.0	0.0	0.0	0.0	9,392
	Cobalt and its compounds	132	0.0	0.0	0.0	0.0	0.0	3.0
	1, 2, 4-trimethylbenzene	296	113	0.0	0.0	0.0	0.0	2,585
	Toluene	300	1,434	0.0	0.0	0.0	0.0	16,977
	Nickel	308	0.0	0.0	0.0	0.0	0.0	14
	Boron compounds	405	0.0	0.0	0.0	0.0	0.0	1.7
	Manganese and its compounds	412	0.0	0.0	0.0	0.0	0.0	5,455
	Molybdenum and its compounds	453	0.0	0.0	0.0	0.0	0.0	0.0

Site name	Substance name	Cabinet Order No.	Released amount				Transferred amount	
			Atmosphere	Public water areas	Soil	On-site landfills	Sewerage	Transfers to off-site
Okajima Business Center	Ethylbenzene	53	29	0.0	0.0	0.0	0.0	73
	Xylene	80	237	0.0	0.0	0.0	0.0	591
	Chromium and Chromium (III) compounds	87	0.0	0.0	0.0	0.0	0.0	1,018
	Triethylamine	277	0.0	0.0	0.0	0.0	0.0	0.0
	1, 2, 4-trimethylbenzene	296	2,864	0.0	0.0	0.0	0.0	0.0
	1, 3, 5-trimethylbenzene	297	859	0.0	0.0	0.0	0.0	0.0
	Nickel	308	0.0	0.0	0.0	0.0	0.0	0.0
	Phenol	349	0.0	0.0	0.0	0.0	0.0	0.0
	Formaldehyde	411	292	0.0	0.0	0.0	0.0	0.0
	Manganese and its compounds	412	0.0	0.0	0.0	0.0	0.0	1,670
	Methylenebis(4,1-phenylene) diisocyanate	448	0.0	0.0	0.0	0.0	0.0	0.0
Sakai Plant	Water-soluble zinc compounds	1	0.0	0.0	0.0	0.0	20	0.0
	Ethylbenzene	53	2,222	0.0	0.0	0.0	0.0	106
	Xylene	80	3,343	0.0	0.0	0.0	0.0	282
	1, 2, 4-trimethylbenzene	296	249	0.0	0.0	0.0	0.0	6.2
	Toluene	300	1,007	0.0	0.0	0.0	0.0	93
Sakai Rinkai Plant	Ethylbenzene	53	82	0.0	0.0	0.0	0.0	38
	Xylene	80	276	0.0	0.0	0.0	0.0	110
	Toluene	300	436	0.0	0.0	0.0	0.0	182
	Benzene	400	2.2	0.0	0.0	0.0	0.0	0.0

Site name	Substance name	Cabinet Order No.	Released amount				Transferred amount	
			Atmosphere	Public water areas	Soil	On-site landfills	Sewerage	Transfers to off-site
Utsunomiya Plant	Water-soluble zinc compounds	1	0.0	9.9	0.0	0.0	0.0	516
	Ethylbenzene	53	9,311	0.0	0.0	0.0	0.0	3,498
	Xylene	80	12,554	0.0	0.0	0.0	0.0	4,685
	1, 2, 4-trimethylbenzene	296	0.0	0.0	0.0	0.0	0.0	0.0
	Toluene	300	400	0.0	0.0	0.0	0.0	164
	Naphthalene	302	1,930	0.0	0.0	0.0	0.0	0.0
	N-hexane	392	0.0	0.0	0.0	0.0	0.0	0.0
Tsukuba Plant	Water-soluble zinc compounds	1	0.0	30	0.0	0.0	0.0	787
	Ethylbenzene	53	38,106	0.0	0.0	0.0	0.0	811
	Xylene	80	40,557	0.0	0.0	0.0	0.0	3,035
	1, 3, 5-trimethylbenzene	297	1,290	0.0	0.0	0.0	0.0	0.0
	Toluene	300	3,184	0.0	0.0	0.0	0.0	0.0
	Methylenebis(4,1-phenylene) diisocyanate	448	0.0	0.0	0.0	0.0	0.0	0.0
Ryugasaki Plant	Ethylbenzene	53	1,095	0.0	0.0	0.0	0.0	99
	Xylene	80	1,324	0.0	0.0	0.0	0.0	111
	Toluene	300	813	0.0	0.0	0.0	0.0	516
Shiga Plant	Styrene	240	21,191	0.0	0.0	0.0	0.0	0.0
	Di-n-butyl phthalate	354	0.0	0.0	0.0	0.0	0.0	48
	Methylenebis(4,1-phenylene) diisocyanate	448	0.0	0.0	0.0	0.0	0.0	0.0

KUBOTA Group Production Sites Data (results of FY2012)

Data on KUBOTA group production sites in Japan

Item		Unit	KUBOTA-C.I. (Sakai)		KUBOTA-C.I. (Odawara)		KUBOTA-C.I. (Tochigi)		KUBOTA Air Conditioner (Tochigi)		KUBOTA Precision Machinery		Nippon Plastic Industry (Head Office and Plant)		Kyushu KUBOTA Chemical	
INPUT																
Energy			Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ
	Fossil fuel	Crude oil equivalent kL	64	2,499	121	4,684	200	7,751	257	9,949	733	28,411	45	1,752	2	70
	Purchased power	MWh	10,852	105,916	28,900	280,030	17,822	172,807	2,244	22,369	12,547	121,896	11,199	107,814	7,293	70,188
	Total	Crude oil equivalent kL	2,797	108,416	7,346	284,714	4,658	180,558	834	32,318	3,878	150,307	2,827	109,565	1,813	70,258
Water usage		thousand m³	14		61		214		63		19		142		6	
OUTPUT																
CO_2 emission	CO_2 emissions from energy sources	tons CO_2e	4,608		11,088		7,216		1,341		5,335		5,396		2,812	
Waste	Discharge amount	tons	41		58		258		168		433		21		19	
	Recycling ratio	%	98.2		100.0		100.0		99.8		100.0		99.2		100	
Exhaust gas	Main smoke and soot generating facilities		–				Boilers		Boilers				–		–	
		Unit	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement
	SOx	Total emission control and K-value control: m³N/h	No smoke and soot generating facilities			No smoke and soot generating facilities			K-value control	14.5	0.5	K-value control	8	Less than 0.009	No smoke and soot generating facilities			No smoke and soot generating facilities			No smoke and soot generating facilities		
	NOx	Total emission control: m³N/h, Concentration control: ppm							Concentration control	—	58	Concentration control	230	Less than 20									
	Soot and dust	g/m³N							Concentration control	—	Less than 0.005	Concentration control	0.2	Less than 0.005									

*Total emission control: Control value or agreed value by plant and the measurement value *K-value control and concentration control: Control and measurement values of major facilities (Maximum value)

				Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement
Drainage	Public water areas	pH	Minimum value, Maximum value	5.8~8.6	6.4,7.8	5.8~8.6	7.4,7.9	5.8~8.6	7.9,8.3	5.8~8.6	7.3,7.6	–	–	5.8~8.6	6.9,7.4	–	–
		BOD	mg/L	25	2.0	60	3.5	20	8.3	20	4.4	–	–	160	7	–	–
		COD	mg/L	25	5.0	60	6.9	–	–	20	14	–	–	160	ND	–	–
		Nitrogen	mg/L	60	42	120	2.5	60	0.7	–	–	–	–	–	–	–	–
		Phosphorus	mg/L	8	5.6	16	0.09	1	ND	–	–	–	–	–	–	–	–
		Hexavalent chromium	mg/L	0.5	ND	0.5	ND	0.1	ND	0.1	ND	–	–	–	–	–	–
		Lead	mg/L	0.1	0.01	0.1	0.03	0.1	0.03	0.1	ND	–	–	0.1	ND	–	–
		COD, total emission control	kg/day	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		Nitrogen, total emission control	kg/day	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		Phosphorus, total emission control	kg/day	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Sewerage lines	pH	Minimum value, Maximum value	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		BOD	mg/L	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		COD	mg/L	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		SS	mg/L	–	–	–	–	–	–	–	–	–	–	–	–	–	–

*Total emission control: Control value by plant and the measurement value *Concentration control: Control value or agreed value by plant and the measurement value (Maximum value)

Results of PRTR reporting (Unit: kg/year)

Site name	Substance name	Cabinet Order No.	Released amount				Transferred amount	
			Atmosphere	Public water areas	Soil	On-site landfills	Sewerage	Transfers to off-site
KUBOTA-C.I. (Sakai)	Lead compounds	305	0.8	0.0	0.0	0.0	0.0	15
KUBOTA-C.I. (Odawara)	Organic tin compounds	239	0.0	0.0	0.0	0.0	0.0	13
	Lead compounds	305	0.0	0.0	0.0	0.0	0.0	142
KUBOTA-C.I. (Tochigi)	Organic tin compounds	239	0.0	0.0	0.0	0.0	0.0	5.4
	Lead compounds	305	0.0	0.0	0.0	0.0	0.0	770
	Methylnaphthalene	438	11	0.0	0.0	0.0	0.0	0.0
KUBOTA Air Conditioner (Tochigi)	Ferric chloride	71	0.0	0.0	0.0	0.0	0.0	0.0
	Methylenebis (4, 1-phenylene) diisocyanate	448	0.0	0.0	0.0	0.0	0.0	0.0
KUBOTA Precision Machinery	N,N-Dicyclohexylamine	188	0.0	0.0	0.0	0.0	0.0	1,829
Nippon Plastic Industry	Lead compounds	305	3.2	0.0	0.0	0.0	0.0	5.4
Kyushu KUBOTA Chemical	Organic tin compounds	239	0.0	0.0	0.0	0.0	0.0	2.6
	Lead compounds	305	1.2	0.0	0.0	0.0	0.0	32

Results of chemical substances reporting

Unit: kg/year〈Reporting to the National Pollutant Release Inventory (Canada)〉

Site name	Substance name	Number	Released amount		Transferred Amount
			Atmosphere	Other	Off-site transfers for recycling
Kubota Metal Corporation	Chromium (and its compounds)	NA-04	87	0.0	80,801
	Manganese (and its compounds)	NA-09	4.0	0.0	3,794
	Nickel (and its compounds)	NA-11	77	0.0	72,759
	Isopropyl Alcohol	67-63-0	188	0.0	12,345
	PM10-Particulate Matter≦10μm	NA-M09	720	0.0	0.0
	PM2.5-Particulate Matter≦2.5μm	NA-M10	336	0.0	0.0

Unit: kg/year〈Toxics Release Inventory (TRI) Program (U.S. EPA)〉

Site name	Substance name	CAS Number	Released amount		Transferred Amount
			Atmosphere	Other	Off-site transfers for recycling
Kubota Industrial Equipment Corporation	Chromium	7440-47-3	0.15	0.0	0.0
	Manganese	7439-96-5	98	0.0	0.03
	Nickel	7440-02-0	0.06	0.0	0.0

Data on KUBOTA Group Overseas Production Sites

Item		Unit	Kubota Baumaschinen GmbH		Kubota Manufacturing of America Corporation		Kubota Industrial Equipment Corporation		The Siam Kubota Corporation (Headquarter)		The Siam Kubota Corporation (Amata Nakorn Plant)		The Siam Kubota Metal Technology		Kubota Precision Machinery (Thailand)	
INPUT																
Energy			Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ
	Fossil fuel	Crude oil equivalent kL	580	22,478	1,395	54,056	1,930	74,812	245	9,508	960	37,216	93	3,606	4	156
	Purchased power	MWh	1,846	18,406	22,209	221,419	14,977	149,320	8,919	88,918	7,960	79,362	10,618	105,860	72	714
	Total	Crude oil equivalent kL	1,055	40,884	7,107	275,475	5,783	224,132	2,539	98,426	3,008	116,578	2,824	109,466	22	871
Water usage		thousand m³	7		60		13		71		82		34		0.4	
OUTPUT																
CO_2 emission	CO_2 emissions from energy sources	tons CO_2e	2,070		18,862		14,021		5,249		6,398		5,831		48	
Waste	Discharge amount	tons	227		1,310		773		336		3,105		2,957		10	
	Recycling ratio	%	98.3		94.1		92.1		97.2		91.1		75.0		81.8	
Exhaust gas	Main smoke and soot generating facilities		–		Boilers		–		–		Boilers		Electric Furnaces		–	
		Unit	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement
	SOx	Total emission control and Concentration control: m³N/h	No smoke and soot generating facilities			*Use of town gas with zero sulfur content			No smoke and soot generating facilities			No smoke and soot generating facilities			*Use of town gas with zero sulfur content			(ppm)	60	2.3	No smoke and soot generating facilities		
	NOx	Total emission control: m³N/h, Concentration control: ppm				Concentration control	—	10							Concentration control	200	65	(ppm)	180	0.89			
	Soot and dust	g/m³N				Concentration control	—	—							Concentration control	0.32	0.0032	Concentration control	0.001	0.0002			

*Facilities included: those subject to the laws concerning emissions into the atmosphere

				Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement
Drainage	Public water areas	pH	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		BOD	mg/L	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		COD	mg/L	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		Nitrogen	mg/L	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		Phosphorus	mg/L	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		Hexavalent chromium	mg/L	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		Lead	mg/L	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		COD, total emission control	kg/day	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		Nitrogen, total emission control	kg/day	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		Phosphorus, total emission control	kg/day	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Sewerage lines	pH	–	6.5~9.0	8.22	6.0~9.5	7.6	6.0~8.0	6.9	6.0~9.0	7.3	–	–	–	–	–	–	–	–
		BOD	mg/L	–	–	900	110.2	250	17.2	450	2.0	–	–	–	–	–	–	–	–
		COD	mg/L	1,000	651	–	–	–	–	600	65.0	–	–	–	–	–	–	–	–
		SS	mg/L	–	–	900	68.7	250	12.5	500	78.0	–	–	–	–	–	–	–	–

Item		Unit	P.T.Kubota Indonesia		Kubota Agricultural Machinery (Suzhou) Co., Ltd.		P.T.Metec Semarang		Kubota Metal Corporation		Kubota Saudi Arabia Company	
INPUT												
Energy			Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ
	Fossil fuel	Crude oil equivalent kL	265	10,280	970	37,589	326	12,624	2,681	103,899	2,330	90,324
	Purchased power	MWh	1,608	16,032	6,962	69,414	3,440	34,294	16,059	160,113	0	0
	Total	Crude oil equivalent kL	679	26,312	2,761	107,003	1,210	46,918	6,812	264,012	2,330	90,324
Water usage		thousand m³	29		78		30		39		11	
OUTPUT												
CO_2 emission	CO_2 emissions from energy sources	tons CO_2e	1,868		7,274		3,250		8,207		6,063	
Waste	Discharge amount	tons	5		444		228		2,981		328	
	Recycling ratio	%	97.6		72.9		94.1		78.4		0.0	
Exhaust gas	Main smoke and soot generating facilities		–		Boilers		Drying furnaces		Heating furnaces		–	
		Unit	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement
	SOx	Total emission control and Concentration control: m³N/h	No smoke and soot generating facilities			(mg/m³)	550	—	(mg/m³)	800	5.312	Concentration control	—	—	No smoke and soot generating facilities		
	NOx	Total emission control: m³N/h, Concentration control: ppm				(mg/m³)	240	1.6	(mg/m³)	1000	0.941	Concentration control	—	—			
	Soot and dust	g/m³N				Concentration control	120	—	Concentration control	0.35	0.0555	Concentration control	—	—			

*Facilities included: those subject to the laws concerning emissions into the atmosphere

				Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement
Drainage	Public water areas	pH	–	6.0~9.0	7.0	–	–	6.0~9.0	8.43	–	–	–	–	–	–
		BOD	mg/L	100	10.0	–	–	100	350	–	–	–	–	–	–
		COD	mg/L	250	21.2	–	–	250	784	–	–	–	–	–	–
		Nitrogen	mg/L	–	–	–	–	–	–	–	–	–	–	–	–
		Phosphorus	mg/L	–	–	–	–	–	–	–	–	–	–	–	–
		Hexavalent chromium	mg/L	0.1	0.0001	–	–	0.5	0.002	–	–	–	–	–	–
		Lead	mg/L	0.1	0.0050	–	–	0.1	ND	–	–	–	–	–	–
		COD, total emission control	kg/day	–	–	–	–	–	–	–	–	–	–	–	–
		Nitrogen, total emission control	kg/day	–	–	–	–	–	–	–	–	–	–	–	–
		Phosphorus, total emission control	kg/day	–	–	–	–	–	–	–	–	–	–	–	–
	Sewerage lines	pH	–	–	–	(Sewage discharge)	–	–	–	(Sewage discharge)	–	(Sewage discharge)	–	–	–	–	–
		BOD	mg/L	–	–	–	–	–	–	–	–	–	–	–	–
		COD	mg/L	–	–	–	–	–	–	–	–	–	–	–	–
		SS	mg/L	–	–	–	–	–	–	–	–	–	–	–	–

*Total emission control of drainage: Control value by plant and the measurement value
*Concentration control of drainage: Control value or agreed value by plant and the measurement value (Maximum value)