Environmental Management Basic Policy

In line with its brand statement, "For Earth, For Life," while protecting the beauty of the global environment, the Kubota Group is committed to the continued support of people's affluent lifestyles. Through its business, the Group contributes to building a sustainable society.

Environmental Charter / Action Guidelines

The Kubota Group Environmental Charter

- The Kubota Group aspires to create a society where sustainable development is possible on a global scale.
- The Kubota Group contributes to the conservation of global and local environments through its environmentally friendly operations, products, and technologies.

The Kubota Group Environmental Action Guidelines

1. Environmental Conservation Efforts in All Business Activities

(1) We promote environmental conservation measures in all stages of our corporate activities, including product development, production, sales, physical distribution, and service.
(2) We also request that our suppliers understand the importance of environmental conservation efforts and cooperate in this regard.

2. Global Environmental Conservation

(1) We promote global environmental conservation measures for stopping climate change, creating a recycling- based society, and controlling chemical substances.
(2) We promote global environmental conservation by providing technologies and products contributing to solving environmental problems.
(3) We strive to ensure our corporate activities are friendly to the natural environment and biodiversity.

3. Environmental Protection to Create a Symbiotic Relationship with Local Societies

(1) We make efforts in the reduction of environmental risks and promote our business activities with proper consideration for the protection of local environments, including pollution prevention.
(2) We actively participate in environmental beautification/education activities in local communities.

4. Our Voluntary and Organized Efforts in Environmental Conservation

(1) By introducing the environmental management system and establishing voluntary targets and action plans, we work on our daily business operations.
(2) We endeavor to enhance environmental awareness through active environmental education/enlightenment activities.
(3) We actively provide stakeholders with environment-related information.
(4) We collect stakeholders' opinions broadly through environmental communication, and reflect the findings in our environmental activities.

Message from the Environmental Conservation Control Officer

Kenshiro Ogawa
Director and Senior Managing Executive Officer
General Manager of Manufacturing Engineering Headquarters
(Environmental Conservation Control Officer)

The Kubota Group upholds the slogan "For Earth, For Life" as its mission, and contributes to the conservation of the global environment through "Made by Kubota" manufacturing activities. We promote environmental management led by members at the management level, and accelerate initiatives to reduce the environmental loads and environmental risks and enhance the lineup of environmentally-friendly products, with the aim of achieving the Long-Term Environmental Conservation Targets for 2030 and the Medium-Term Environmental Conservation Targets for 2020 formulated in the year before last.

For the realization of the Global Major Brand Kubota (GMB Kubota), the goal we announced last year, we are implementing measures to enhance our business structure, such as the shortening of lead times and reduction of stocks, with the aim of establishing a global manufacturing system based on the Kubota Production System (KPS). We adopt this concept of KPS in the environmental sphere, and will promote the complete elimination of waste and loss in the use of energy and resources and make continuous efforts for further improvement of our activities.

For environmentally-friendly products, while working to expand the sales ratio of Eco-Products, we will also enhance our products and services that contribute to the conservation of the environment and the solution of customers' problems, such as KSAS, a cloud service to help improve the efficiency of farm operations, and KSIS, an IoT solution system that will help optimize the operations of water infrastructure facilities and plant management.

The Kubota Group will continue to make united efforts to support the conservation of the global environment and promote environmental management appropriate to GMB Kubota.

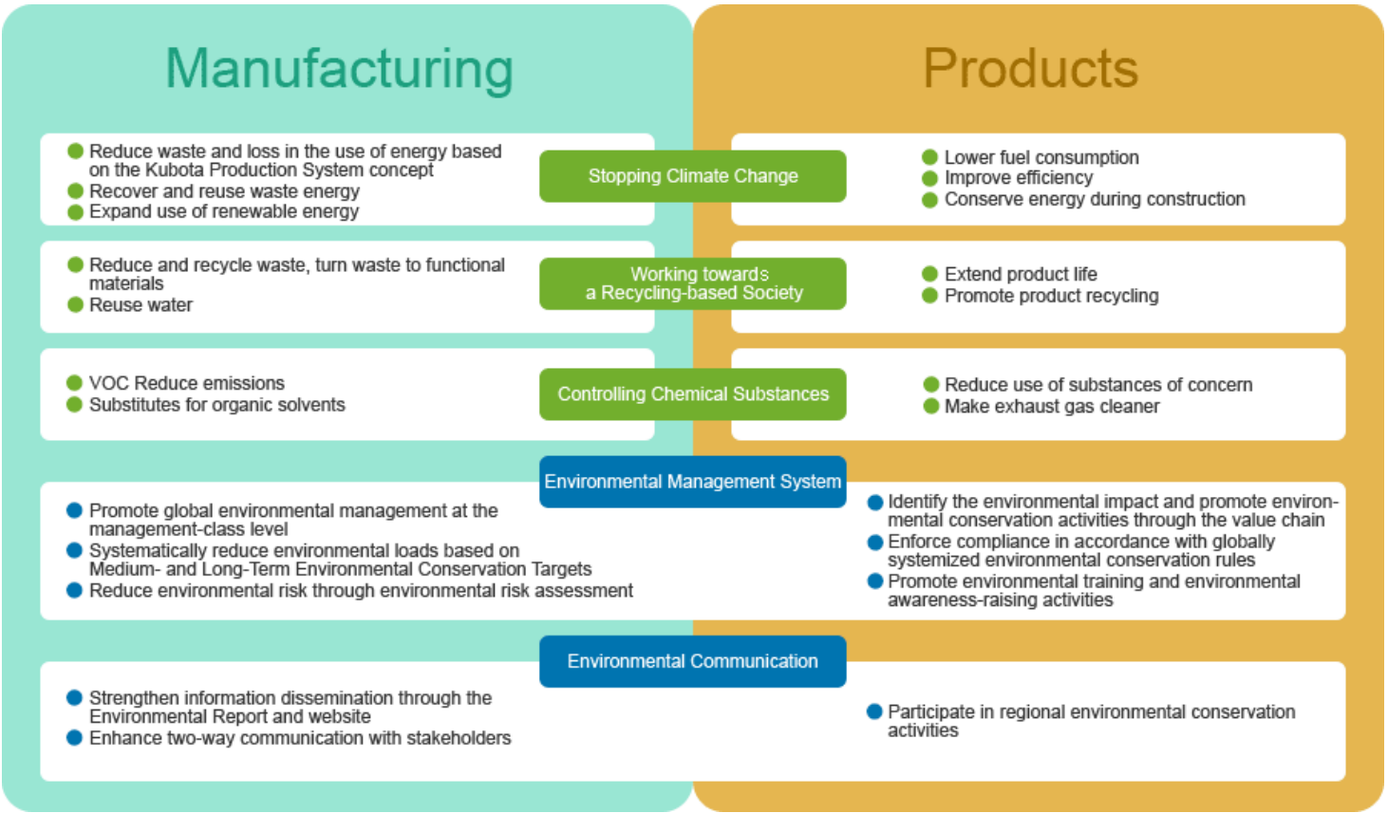
Basic Direction of Corporate Environmental Management / Key Measures

Basic Direction of Corporate Environmental Management

As stipulated in the Basic Direction of Corporate Environmental Management prepared for the Kubota Group, three initiatives have been established: “Stopping Climate Change,” “Working towards a Recycling-based Society” and “Controlling Chemical Substances.”

Key Measures

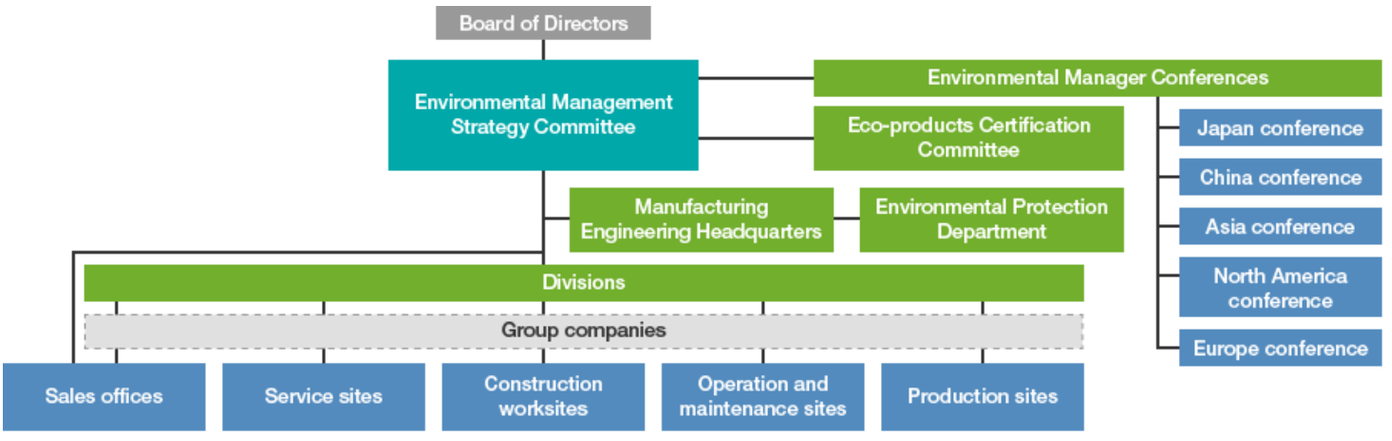
Aiming to achieve the Basic Direction of Corporate Environmental Management, the Kubota Group engages in environmental management with key measures focused on the two perspectives of manufacturing and products, and in accordance with the basic concept of reducing environmental load at the same time as improving management efficiency.



Environmental Management Promotion System

Organization Structure

In RY2014, the Environmental Management Strategy Committee was newly established to take a more strategic and innovative approach to environmental management by management-led promotion. In addition, Environmental Manager Conferences are held for each region—Japan, China, Asia, North America and Europe—to globally advance environmental management across the Kubota Group.



Environmental Management Strategy Committee

The Environmental Management Strategy Committee is chaired by Kubota's executive vice president and is comprised of executive officers. The Committee discusses the medium- and long-term direction of the Kubota Group's environmental management, such as medium and long-term targets and key measures. It determines priority items and plans that should be carried out in order to reduce environmental impact and risk, and to enhance the lineup of environmentally-friendly products.

It also promotes management based on the plan-do-check-action (PDCA) cycle by assessing and analyzing the progress of the entire Group's environmental conservation activities and reflecting the results when formulating new plans and policies. We will continue to promote swift environmental management led by members at the management level.

Environmental Management Strategy Committee

Environmental Manager Conferences

The Kubota Group holds Environmental Manager Conferences aimed at strengthening the environmental management system and reducing environmental load and environmental risk on a global basis.

In RY2016, the conferences were held in Japan and China. For the Japan Conference, environmental managers and staff members of 22 sites, including Group companies, gathered. At the China Conference, in addition to the environmental managers and staff members of seven companies with production sites in China, environmental managers from Japan’s mother plants also participated.

At these conferences, the policies of the Kubota Group and the results of discussions at the Environmental Management Strategy Committee were communicated. Participants presented their achievement of energy-saving measures and observed the improvement initiatives at plants. They also discussed the problems of each operation field faced by each site, as well as Group-wide problems, and examined the countermeasures to be taken. After the conference, participants gave positive feedback, such as that it was a precious opportunity to learn the initiatives of other sites and that they could deepen their understanding through exchanging opinions.

In Japan, some subcommittees were newly established under this conference, in order to have more focused discussions on issues of specific operation fields, such as waste management and reduction of environmental load, with a view to finding measures for improvement. We will position these conferences as a function for enhancing our activities on a practical basis, raising the level of environmental conservation activities at each site, and enhancing ties within each region.

China Conference at Kubota Construction Machinery (Wuxi) Co., Ltd.

Japan Conference at Kubota Utsunomiya Plant

Medium- to Long-Term Environmental Conservation Targets and Results

The influence of climate change, such as extreme weather events, has been gradually worsening, and the world's movement toward the reduction of greenhouse gas has been increasingly activated. Global environmental issues are posing a significant threat to "ensuring food security", as well as "ensuring a safe and secure water supply."
In order to contribute to building a sustainable society as a sustainable company, the Kubota Group has been promoting environmental activities by formulating its medium and long-term targets for environmental conservation. The Kubota Group has formulated Long-Term Environmental Conservation Targets for 2030 and Medium-Term Environmental Targets for 2020. Toward achieving these targets, the Group is advancing systematic initiatives in both the production and product development stages.

The environmental information provided in the KUBOTA REPORT 2017 Business and CSR Activities <Full Report Version>(PDF) has received third-party assurance by KPMG AZSA Sustainability Co., Ltd. The indexes subject to assurance are marked with " " symbol.

Long-Term Environmental Conservation Targets 2030

Efforts to stop climate change

Reduce CO_2 emissions from the Kubota Group in Japan[*1] by 30% compared to the base year 2014

Efforts to develop environment-conscious products

Increase the sales ratio of Eco-Products[*2] certified products to 80%
Aim to put all new products which are certified as Eco-Products on the market in 2030 and later

Medium-Term Environmental Conservation Targets 2020 and the Results for RY2016

In RY2016, the Kubota Group started the initiatives toward achieving its new medium-term targets, Medium-term Environmental Conservation Targets 2020. Each business site and division determined measures to take and formulated an implementation plan up to RY2020, taking into consideration the fluctuations in the volume and contents of business. From now on, we will work to ensure the implementation of the plans and examine advanced measures.

Scope	Issues	Actions items	Management Indicators*4	Base RY	Targets for RY 2020*9	Results of RY 2016*9	Achievement Status
Global production sites	Stopping Climate Change	Reduce CO_2*1	CO_2 emissions per unit of production	2014	▲14%	▲9.6%	We are promoting the energy-saving initiatives for production equipment, lighting, etc., fuel conversion, and the measures for heat insulation of buildings.
		Save energy	Energy consumption per unit of production	2014	▲10%	▲8.7%	
	Working towards a Recycling-based Society	Reduce waste	Waste discharge per unit of production	2014	▲10%	▲8.8%	We are promoting thorough sorting of wastes and separating valuable resources out of wastes.
			Recycling ratio (Japan)*5	-	More than 99.5%	99.8%	We are maintaining the existing level through continuous efforts.
			Recycling ratio (Overseas)*5	-	More than 90.0%	89.0%	We are promoting the reduction of the amount of waste sent to landfills by changing contractors.
		Conserve water resources	Water consumption per unit of production	2014	▲10%	▲2.7%	We are promoting recycling of waste water and saving of water use.
	Controlling Chemical Substances	Reduce VOCs*3	VOC emissions per unit of production*6	2014	▲10%	▲7.1%	We are promoting the substitution or reduced use of VOC-contained paint, thinner, etc.

Scope	Issues	Actions items	Management Indicators*4	Base RY	Targets for RY 2020*9	Results of RY 2016*9	Achievement Status
Product	Improving Product's Environmental Performance	Expand Eco-Products	Sales ratio of Eco-Products*2	—	More than 60%	44.2%	In RY2016, 22 products were newly certified as Eco-Products.
		Promote recycling	Usage ratio of recycled materials*7	—	More than 70%	More than 70%	We are maintaining the usage ratio of recycled materials higher than the target.
		Develop vehicles compliant with exhaust gas regulations	Development of industrial diesel engines that comply with the latest emission regulations of Japan, the US and Europe and putting on the market of the engine-based products*8			The following products*10 were put on the market. ・Tractors（M6S Series）: North America EPA Regulation (75 kW and above, lower than 130 kW, Tier 4) ・Tractor（WORLD M1060W）: Japan regulations on Emissions from Non-Road Special Motor Vehicles (75 kW and above, lower than 130 kW, Regulation 2014)	

*1 CO_2 emissions include greenhouse gases from non-energy sources. In Medium-Term Environmental Conservation Targets 2020, we use the emissions coefficient for electricity of the base year in our calculation of CO_2 emissions from energy sources.

*2 The sales ratio of the products which have fulfilled the internal requirements in our own Eco-Products Certification System
Sales ratio of Eco-Products (%) = Sales of Eco-Products / Sales of products (excluding construction work, services, software, parts and accessories) × 100

*3 VOCs (volatile organic compounds) comprise the six substances that are most prevalent in emissions from the Kubota Group: xylene, toluene, ethylbenzene, styrene, 1, 2, 4-trimethylbenzene, and 1, 3, 5-trimethylbenzene.

*4 The figures per unit of production represent the intensity of the environmental load per unit of production money amount. The exchange rate of the base year is used when translating the production money amount of overseas sites into Japanese yen.

*5 Recycling ratio (%) = (Sales amount of valuable resources + External recycling amount) / (Sales amount of valuable resources + External recycling amount + Landfill disposal) × 100. Heat recovery is included in external recycling amount.

*6 VOC emissions and the production money amount of Great Plains Manufacturing, Inc. (GP), which became Kubota's consolidated subsidiary in July 2016, are excluded from the calculation of the VOC emissions per unit of production for the result of RY2016.

*7 Usage ratio of recycled materials (%):materials used in the cast metal products and parts (ductile iron pipes, fittings, machine cast products (engine crankcase, etc.))

*8 Targeting the tractors and combine harvesters (output range: 56 kW≤P<560 kW) equipped with engines compliant with the European emissions regulations (Europe Stage IV) level, shipped to Europe, North America, Japan, and Korea.

*9 ▲ means "minus".

*10 Major products of launched products into markets in 2016

As an "Eco-First Company"

In May 2010, the Kubota Group was certified by the Japan's Ministry for Environment as an "Eco-First Company" due to its commitments to environmental conservation. In 2016, the Group submitted an application to renew its Eco-Fast commitments based on the new medium and long-term targets.

- Work towards a recycling-based society
- Stop climate change
- Reduce emission into the atmosphere
- Develop environmentally friendly products
- Conserve biodiversity

Eco-First Mark

See here for details on Eco-First Company certification

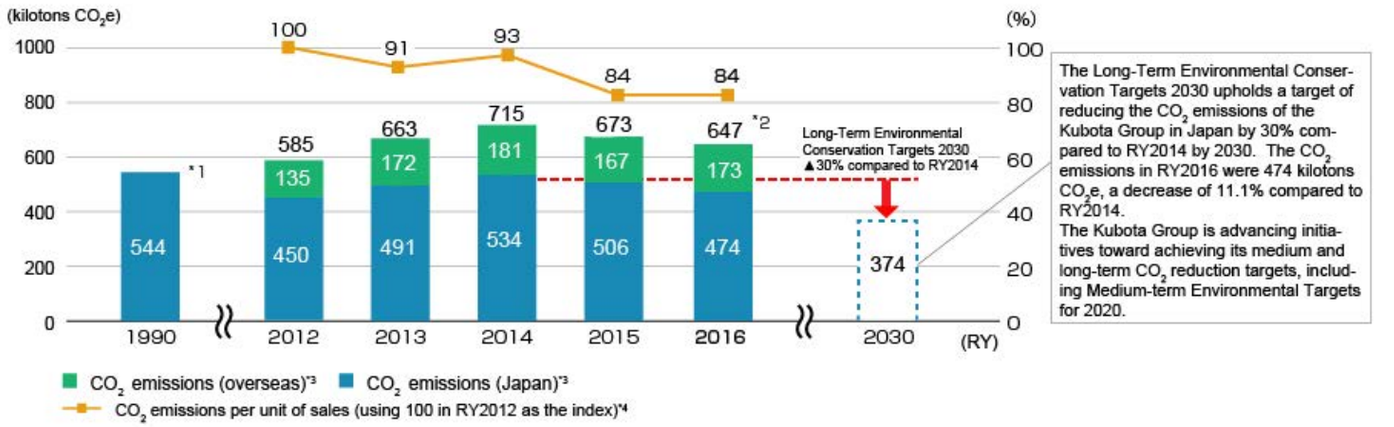
Stopping Climate Change

The Fifth Assessment Report by the Intergovernmental Panel on Climate Change (IPCC), states that the 'warming of the climate system is unequivocal' and there is an extremely high possibility that the impact of human activities is one of the contributing factors. Additionally, the "Paris Agreement" was entered into force in November 2016 and the world's movement toward the reduction of greenhouse gas has been increasingly activated. The Kubota Group is engaged in initiatives to reduce CO_2, placing a focus on energy-saving activities in order to prevent global warming.

CO_2 Emissions (Scope 1 and Scope 2)

In RY2016, CO_2 emissions were 647 kilotons CO_2e, a decrease of 3.9% compared to the previous reporting year. Additionally, CO_2 emissions per unit of sales improved by 0.6% compared to the previous reporting year. The decrease in CO_2 emissions is mainly due to the reduction of production volume at cast iron production sites in Japan. We are continuously promoting the energy-saving initiatives for production equipment, lighting, etc., fuel conversion, and various other measures.

Trends in CO_2 Emissions and Emissions per Unit of Sales



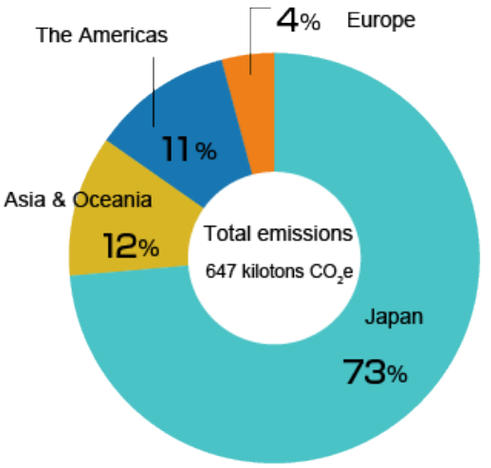
*1 CO_2 emissions for RY1990 are the emissions from energy sources at only Kubota production sites.

*2 CO_2 emissions (647 kilotons CO_2e) include portions of CO_2 that were not released into the atmosphere but absorbed as carbon into products such as iron pipe (24 kilotons CO_2e).

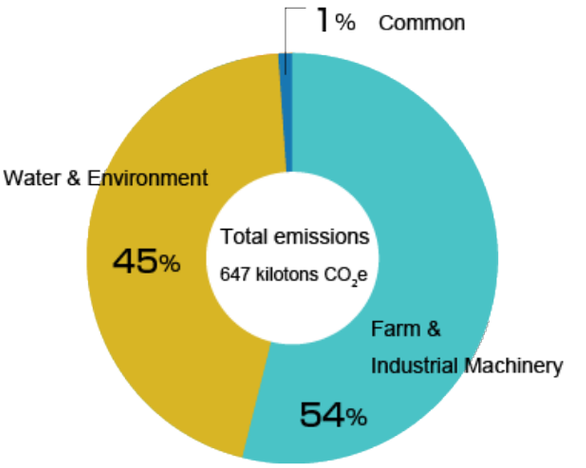
*3 CO_2 emissions after RY2012 include greenhouse gases from non-energy sources.

*4 CO_2 emissions per unit of consolidated net sales.

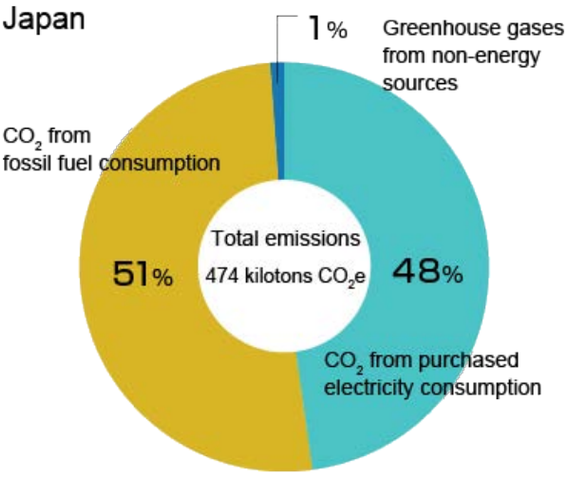
CO_2 Emissions by Region (RY2016 results)

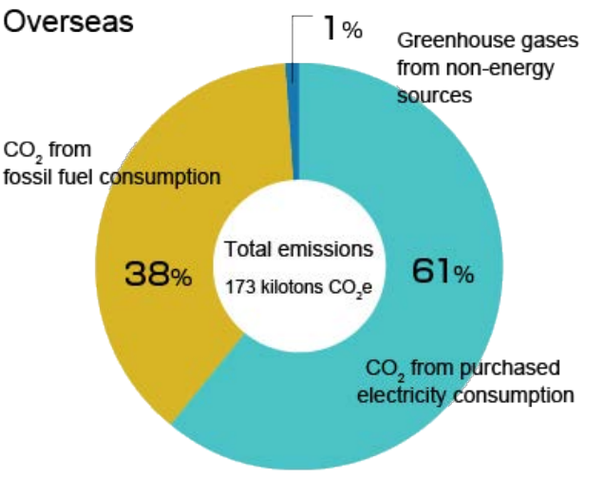


CO_2 Emissions by Business (RY2016 results)

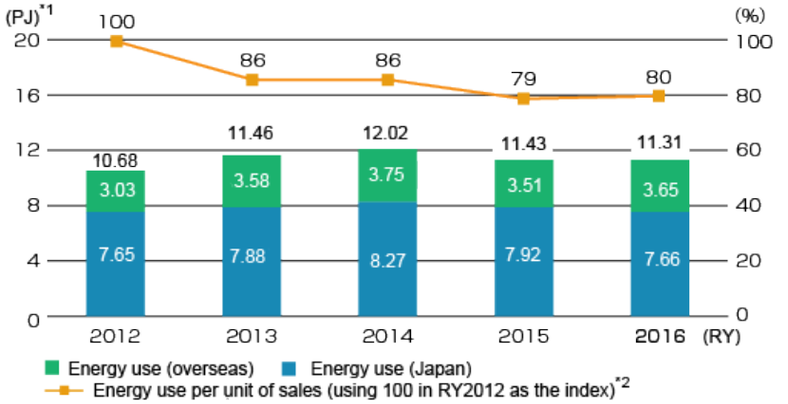


CO_2 Emissions by Emission Source (RY2016 results)





Trends in Energy Use at Business Sites



*1 PJ = 10^{15}J

*2 Energy use per unit of consolidated net sales.

Voice Developing pre-paint treatment solution available at room temperature to reduce the consumption of natural gas by boilers

We at SIAM KUBOTA Corporation Co., Ltd. Amata Nakorn Plant (Thailand) worked on reduction of the energy consumption in the painting lines.

The conventional pre-paint treatment solution required heating up to 45 to 50°C. For this temperature control, our plant had to operate four boilers, which consumed approx. 60% of the natural gas used at the entire plant.

We therefore started research and development in cooperation with the manufacturer in 2011 to enable room-temperature management of the pre-paint treatment solution. The switchover to the pre-paint treatment solution available at room temperature started in 2012 for part of the painting lines, and completed by the end of 2015 for all the painting lines.

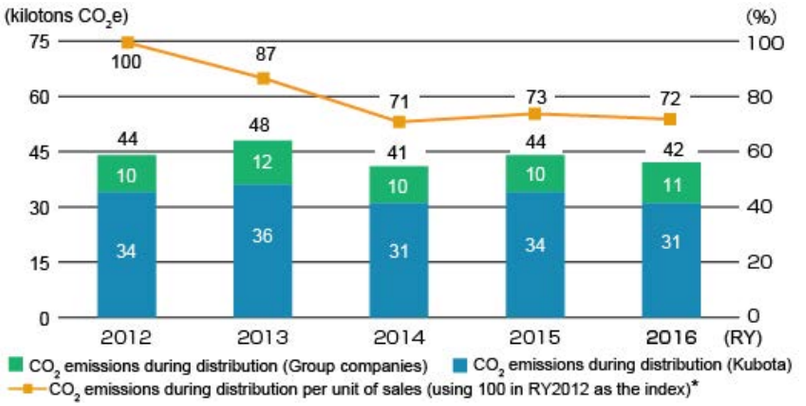
As a result, operation of the four boilers became unnecessary, and we succeeded in substantial reduction of the use of natural gas in 2016. For this achievement, we received in November 2014 the Prime Minister's Industry Award from the prime minister of Thailand and the Thailand Energy Award from the Department of Alternative Energy Development and Efficiency, Ministry of Energy. We will make continued efforts to further reduce the energy consumption.

SIAM KUBOTA
Corporation Co., Ltd. Amata Nakorn Plant
Foreman of B Tractor & Part Production Department
Tanong Praisiri

CO_2 Emissions during Distribution

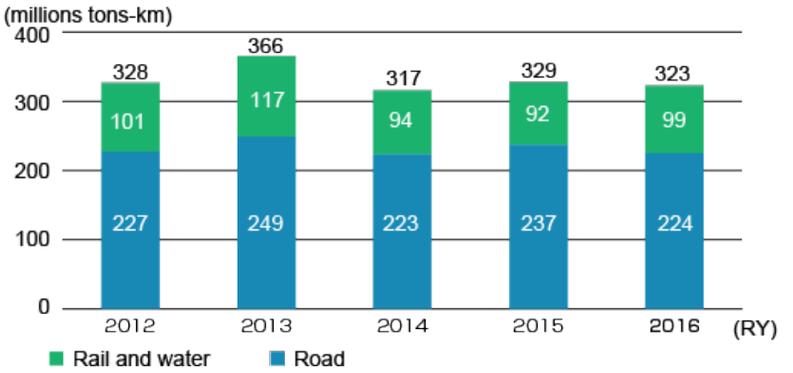
In RY2016, CO_2 emissions during distribution were 42 kilotons CO_2e, a decrease of 5.2% compared to the previous reporting year. Additionally, CO_2 emissions during distribution per unit of sales improved by 2.0% compared to the previous reporting year. The decrease in CO_2 emissions during distribution is mainly due to the reduction in the volume of freight traffic. We are continuously promoting various approaches such as improving loading efficiency by combining transportation and realizing a modal shift through the use of ships.

Trends in CO_2 Emissions during Distribution and Emissions per Unit of Sales (Japan)



* CO_2 emissions during distribution per unit of consolidated net sales.

Trends in Freight Traffic (Japan)



* From KUBOTA REPORT 2017, we combined the volume of freight traffic of transportation by rail and water.

CO_2 Emissions throughout the Value Chain

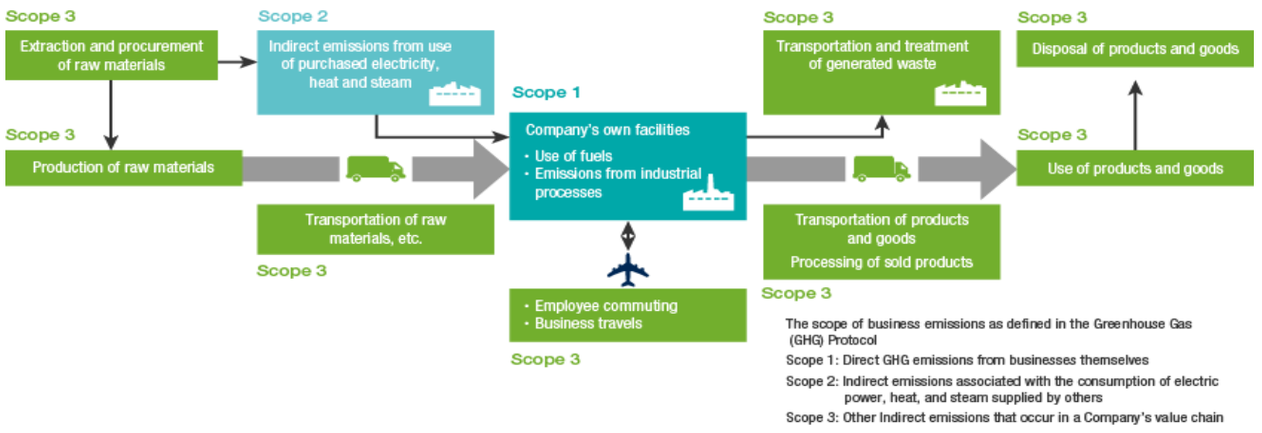
The Kubota Group makes concerted efforts to figure out CO_2 emissions throughout the value chain in addition to its business sites. Following guidelines*, we calculate CO_2 emissions based on Scope 3, and continue to expand the categories in the Scope of our calculation of CO_2 emissions.

* Basic guidelines for calculating greenhouse gas emissions in supply chains issued by the Japanese Ministry of the Environment and Ministry of Economy, Trade and Industry.

CO_2 Emissions in Each Stage of Value Chain (RY2016 results)

Classification		Scope of calculation	CO_2 emissions (kilotons CO_2e)
Emissions of the Kubota Group's business sites	Direct emissions (Scope 1)	Use of fossil fuels	306
		Non-energy-related greenhouse gas emissions	7
	Indirect emissions (Scope 2)	Purchased electricity use	334
Upstream and downstream emissions	Other indirect emissions (Scope 3)	Resource extraction, transportation and manufacturing related to purchased goods, etc.	2061
		Extraction and production of capital goods such as equipment	219
		Extraction, production and transportation of fuels for generation of purchased electricity	25
		Disposal of wastes discharged from business sites	16
		Employee business travels	9
		Employee commuting	3
		Transportation of products and wastes	42
		Processing of sold products	65
		Use of sold products	18440
		End-of-life transportation and treatment of sold products	38

Example Activities of Each Scope



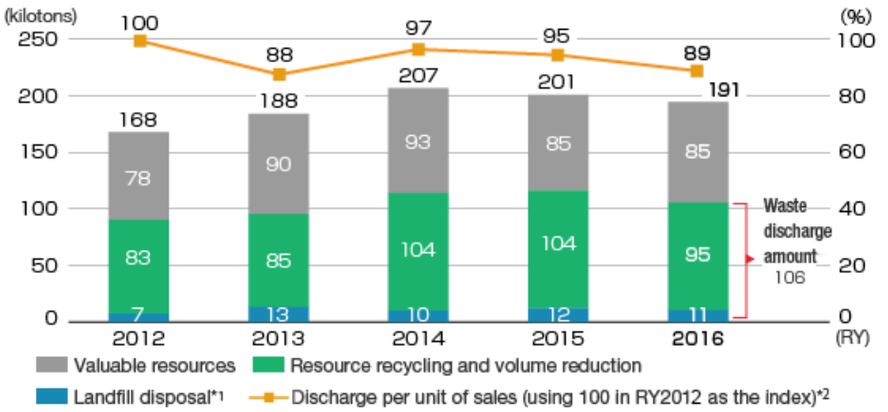
Working towards a Recycling-based Society - The 3Rs of Waste

As a result of being a mass production, mass consumption and mass disposal society, we now face many problems such as the depletion of resources and increasing waste. The Kubota Group is involved in initiatives to reduce wastes and recycle resources at its business sites in Japan and implementing initiatives globally to give form to a recycling-based society.

Waste, Etc. from Business Sites

In RY2016, the waste discharge amount was 106 kilotons, a decrease of 8.8% compared to the previous reporting year. Additionally, the waste discharge per unit of sales improved by 5.7% compared to the previous reporting year. The decrease in waste discharge is mainly due to the reduction of production volume at cast iron production sites in Japan. We are continuously promoting thorough sorting of wastes and separating valuable resources out of wastes.

Trends in Waste, Etc. (including valuable resources) and Waste Discharge per Unit of Sales

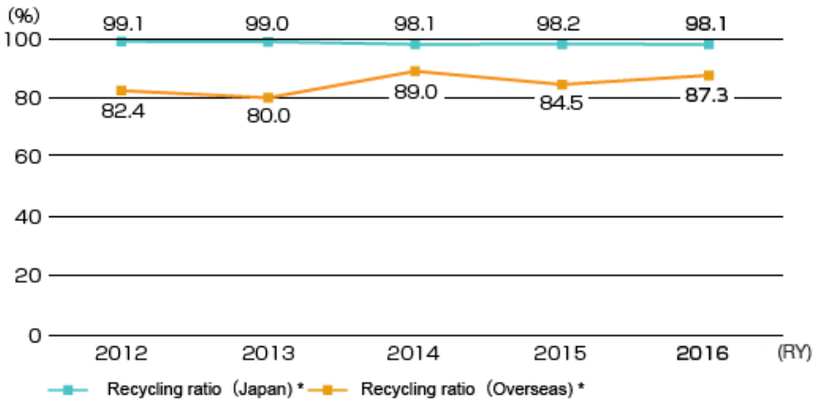


*1 Landfill disposal = Direct landfill disposal + Final landfill disposal following intermediate treatment

*2 Waste discharge per unit of consolidated net sales.
Waste discharge = Resource recycling and Volume reduction + Landfill disposal

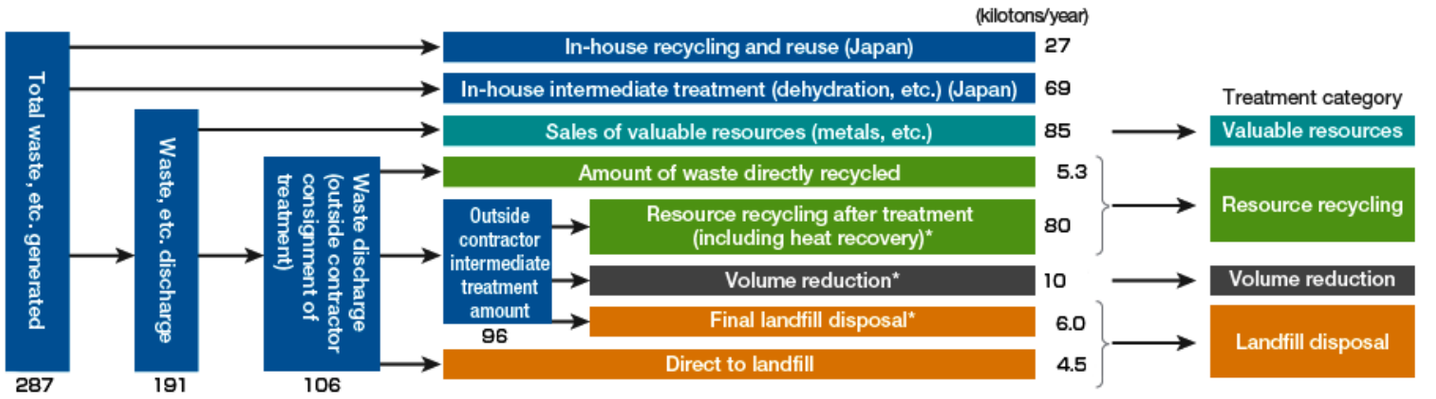
The resource recycling ratio in RY2016 was 98.1% in Japan, down 0.1 points compared to the previous reporting year. On the other hand, the recycling ratio overseas was 87.3%, a 2.8 points improvement compared to the previous reporting year, due to the efforts such as promoting recycling of casting dust, etc.

Trends in Recycling Ratio



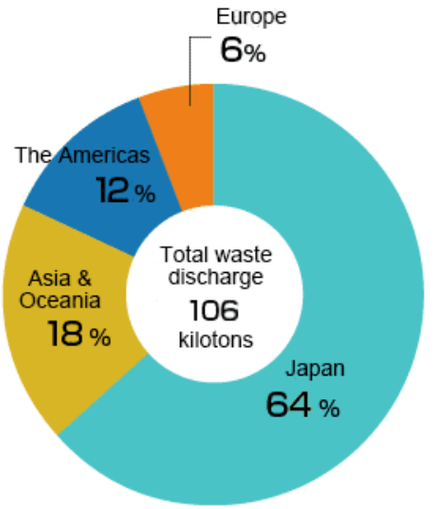
* Recycling ratio (%) = (Sales amount of valuable resources + External recycling amount)÷(Sales amount of valuable resources + External recycling amount + Landfill disposal) × 100. Starting in RY2013, heat recovery has been included in external recycling volume. The resulting difference compared with the previous method that did not include heat recovery is minor.

Waste Recycling and Treatment Flow (RY2016 results)

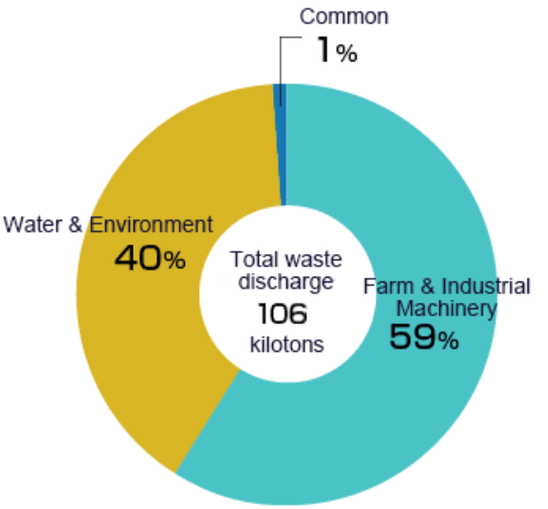


* The amounts of resource recycling after treatment, volume reduction, and final landfill disposal were the results of surveys conducted by outside intermediate treatment companies.

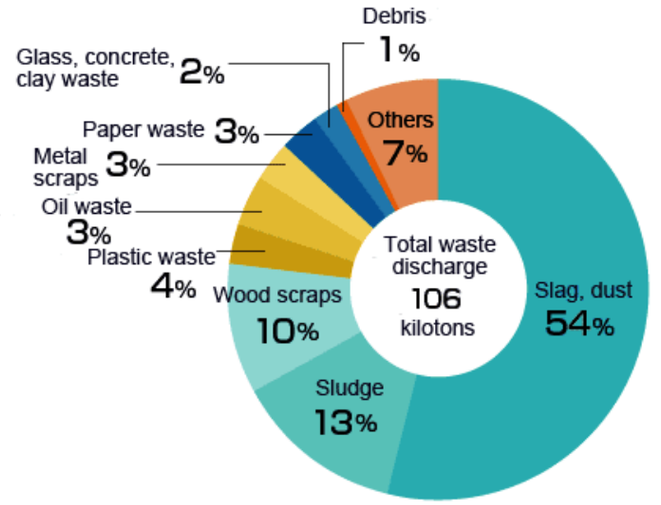
Waste Discharge by Region (RY2016 results)



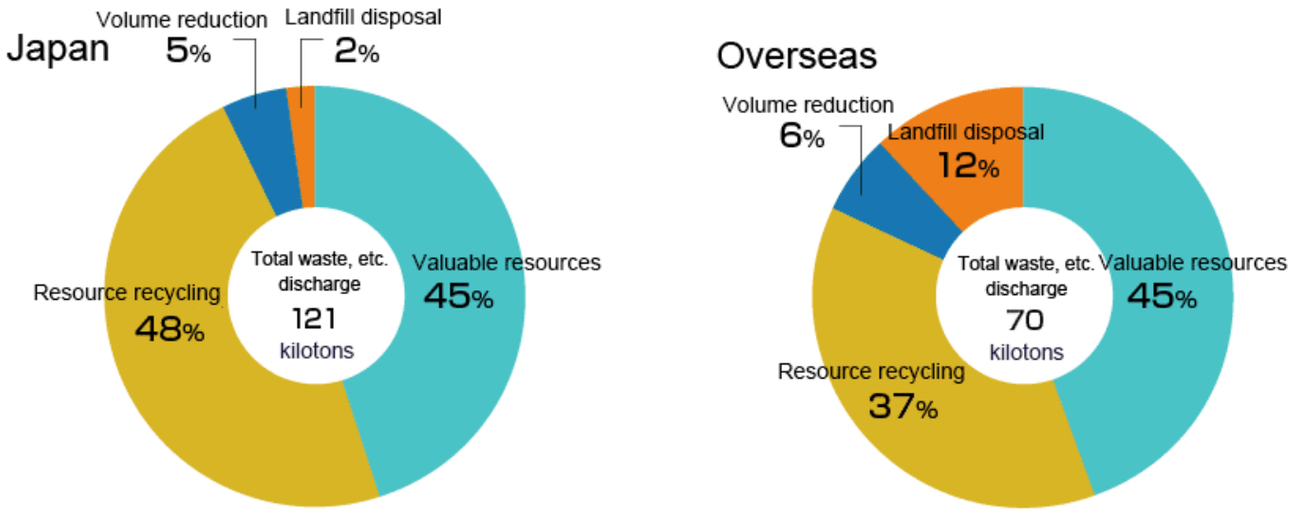
Waste Discharge by Business (RY2016 results)



Waste Discharge by Type (RY2016 results)



Waste, Etc. Discharge by Treatment Category (RY2016 results)



Voice Reducing waste discharge by introducing a sludge removal system for the painting booth water tanks

Kubota Agricultural Machinery (Suzhou) Co., Ltd. (China) developed a system to remove sludge of the painting booth water tanks, with the aim of reducing the amount of waste discharge.

Before this development, sludge removal for the four water tanks of our painting booth had to be conducted separately for each tank using chemicals, and the water of the tanks had to be entirely thrown away and replaced once or twice monthly.

Thus, in February 2015 we started examining a system that would help reduce the frequency of changing the tank water, and in November the same year, we introduced a circulatory system using a collective water tank. In this circulatory system, water of the tanks of each painting booth is sent to a newly installed collective water tank, in which sludge removal is collectively conducted, and the water after sludge removal is sent back to each painting booth.

The introduction of this system reduced the frequency of changing the tank water to once a year, resulting in the reduction of approx. 500 tons (estimated value) of water disposal annually, which is approx. one-sixth of the amount before the introduction of the circulatory system. The system has also enabled automatic sludge removal without suspending operation of the paining equipment, thereby improving efficiency of work.

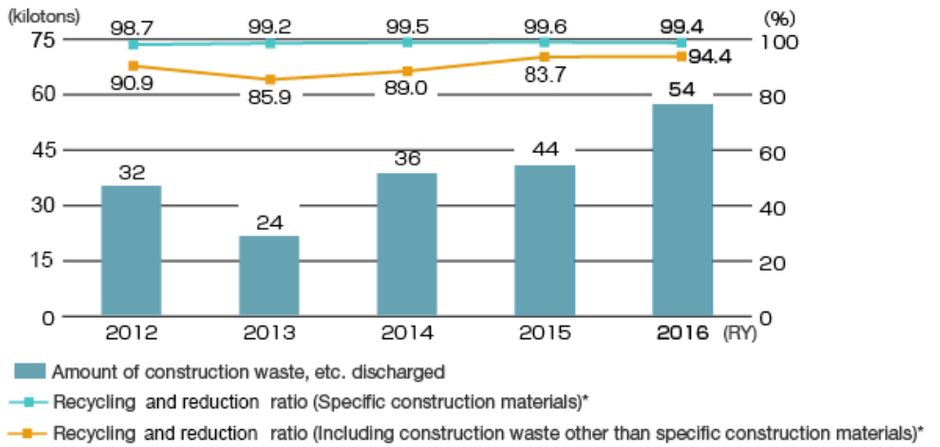
We will make continued efforts to further reduce the waste generation and improve work efficiency.

Kubota Agricultural Machinery (Suzhou) Co., Ltd.
Manufacturing Engineering Department
Chen Chao

Waste, Etc. Generated from Construction Work

Waste generated from construction work depends on the type of work being done, and the discharge can differ between orders, meaning that the recycling and reduction ratio fluctuates. However, Kubota maintains a high recycling and reduction ratio for specific construction materials.

Trends in Discharge, and Recycling and Reduction Ratio of Construction Waste, Etc. (Japan)



* Recycling and reduction ratio = [Sales amount of valuable resources + Resource recycling (including heat recovery) + Volume of reduction] ÷Amount of construction waste, etc. discharged (including sales amount of valuable resources) x 100 (%)
Until RY2015, the resource recycling ratio (referring to the Calculation Standards of Environmental Performance Indicators) was calculated. In RY2016, we adopted a new calculation method in which we calculate the reduction volume in accordance with the Promotion Plan for Recycling of Construction Waste 2014 (Ministry of Land, Infrastructure, Transport and Tourism) and determine the recycling and reduction ratio.
The result of conventional calculation for RY2016 is 99.2% for the special construction materials, and 87.6% for the entire construction waste, etc.

Handling and Storage of Equipment Containing PCB (in Japan)

Transformers, capacitors and other equipment containing polychlorinated biphenyls (PCB) are properly reported, stored and handled based on the Japanese Act on Special Measures concerning Promotion of Proper Treatment of PCB Wastes and Japanese Waste Disposal Law. Waste with high-concentration PCB is being disposed of steadily, beginning with sites for which acceptance at PCB treatment facilities are available. Waste with low-concentration PCB will be properly disposed of by the disposal deadline of March 2027.

Although PCB-containing waste in storage is being controlled in accordance with the relevant laws, a case of inappropriate disposal of equipment containing low-concentration PCB was found in 2016. We implemented necessary countermeasures and are working to prevent recurrence.

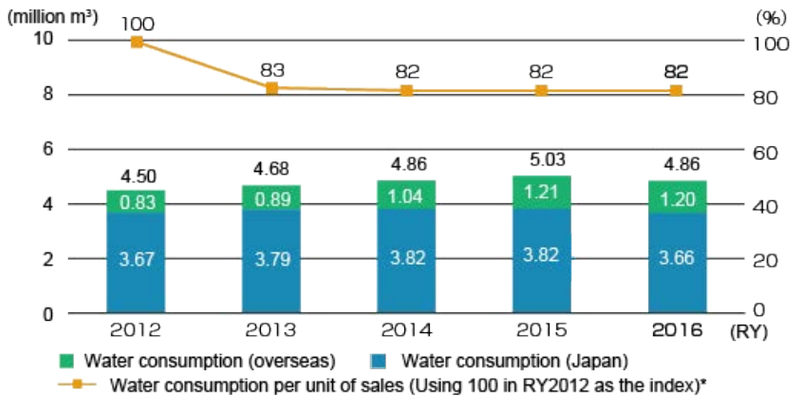
Working towards a Recycling-based Society - The 3Rs of Water

The Organization for Economic Co-operation and Development (OECD) has reported that over 40% of the global population is projected to be living in river basins under severe water stress by the year 2050. The Kubota Group is involved in initiatives such as the effective utilization of water resources by promoting wastewater recycling.

Water Consumption in the Business Sites

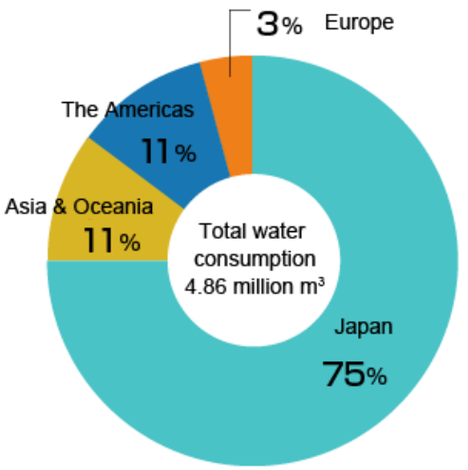
In RY2016, water consumption was 4.86 million m^3, a decrease of 3.4% compared to the previous reporting year. Additionally, water consumption per unit of sales improved by 0.2% compared to the previous reporting year. The decrease in water consumption is mainly due to the reduction of production volume at cast iron production sites in Japan and at overseas production sites for formed and fabricated materials. We are continuously promoting recycling of waste water and saving of water use.

Trends in Total Water Consumption and Consumption per Unit of Sales

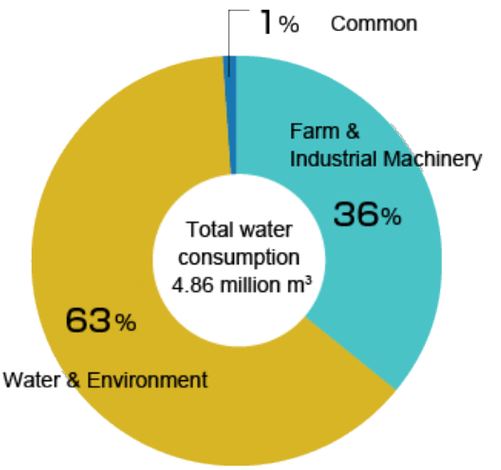


* Water consumption per unit of consolidated net sales.

Water Consumption by Region (RY2016 results)

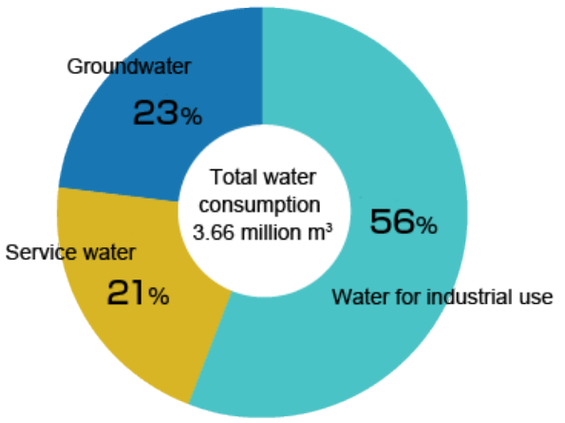


Waste Consumption by Business (RY2016 results)

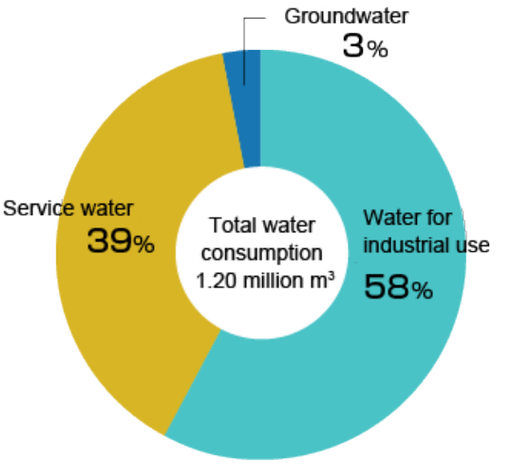


Water Consumption by Type (RY2016 results)

Japan



Overseas



Water Stress Survey Conducted for All Production Sites

Demand for fresh water is expected to rise sharply worldwide, due to population increase and economic growth. Meanwhile, however, supply of freshwater is likely to become increasingly unstable due to the impact of global warming, etc. Thus, there is a growing interest in "water risks," such as water shortage, flood, and torrential rain, as a factor that may have serious impact on business activities.

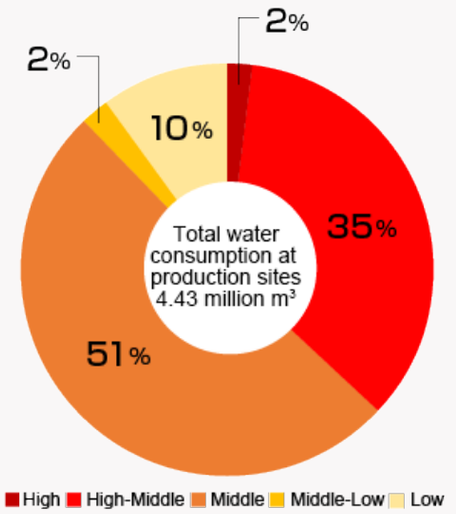
In order to identify the risks related to the use of water resources and find effective responses to such water risks, the Kubota Group conducted a survey concerning water stress[*1] for all of its production sites.

The results of the survey on water stress of a total of 52 sites in 15 countries using WRI Aqueduct[*2] and WBCSD Global Water Tool(Version2015 1.3.5)[*3] are as follows:

Results of the Survey on Water Stress of Production Sites

Region/country		Water stress level / number of sites				
		High	High-Middle	Middle	Middle-Low	Low
Asia	Japan	1	9[*4]	9	2	0
	China	0	3	1	0	0
	Indonesia	0	2[*4]	0	0	0
	Thailand	0	0	4	1	0
	Saudi Arabia	1[*4]	0	0	0	0
Europe	Russia	0	1	0	0	0
	Norway	0	0	0	0	1
	Denmark	0	0	0	0	1
	Netherland	0	0	0	1	0
	Germany	0	0	1	1	0
	France	0	1	0	0	1
	Italy	0	1	0	0	0
	United Kingdom	0	0	1	0	0
North America	Canada	0	0	0	0	1
	United States	6	0	2	0	0
Total		**8**	**17**	**18**	**5**	**4**

Water Consumption by Water Stress Level (RY2016 results)



The results of the survey showed that about half of the production sites (25 sites in total) are located in areas with water stress of the high to middle level, of which the sites in the coastal area of Osaka Bay (Japan), Saudi Arabia, and the Midwest area of the United States (eight sites in total) are located in areas with extremely high water stress. The amount of water consumption in these areas with extremely high water stress account for approx. 2% of total water consumption.

The Kubota Group has been involved in initiatives such as the effective utilization of water resources by promoting wastewater recycling. As a result of these initiatives, the Group achieved in RY2016 approx. 150,000 m^3 reduction (compared to RY2014) in water consumption at production sites. Based on the results of this survey on water stress, Kubota will continue to promote the initiatives to ensure 3Rs of water.

*1 Water stress refers to the state where the annual water availability per capita is less than 1700 t and people feel inconvenience in their daily life (according to the World Resources Institute (WRI)).

*2 A tool developed and released by the World Resources Institute (WRI) to assess water risk information

*3 A tool developed and released by the World Business Council for Sustainable Development (WBCSD) to assess water risk information

*4 For the sites with no data by river basin, assessment results by country are employed.

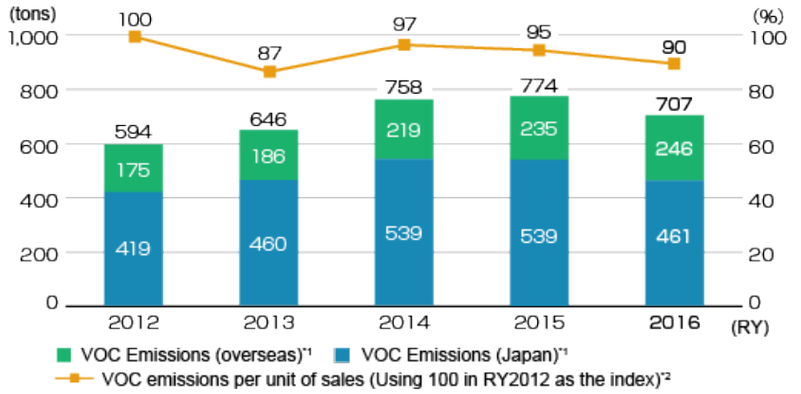
Controlling Chemical Substances

International frameworks are being established to minimize the negative impact of chemical substances on people's health and the environment. The Kubota Group engages in ongoing activities aimed at appropriately controlling and reducing the use of chemical substances.

VOC Emissions

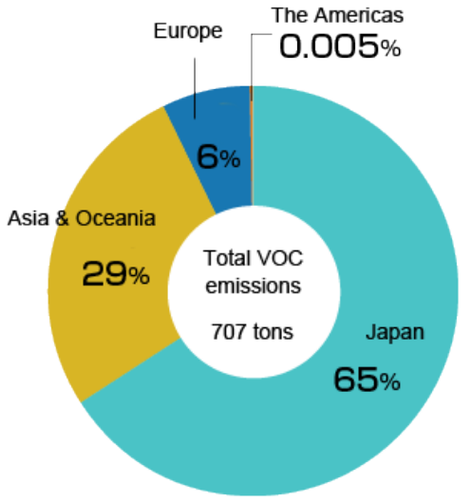
In RY2016, volatile organic compound (VOC) emissions were 707 tons, a decrease of 8.6% compared to the previous reporting year. Additionally, the VOC emissions per unit of sales improved by 5.5% compared to the previous reporting year. The decrease in VOC emissions is mainly due to the reduction of production volume at cast iron production sites in Japan. We are promoting the ongoing measures, such as elimination or reduced use of VOC-contained paint, thinner, etc., and switching to VOC-free materials.

Trends in VOC Emissions and Emissions per Unit of Sales

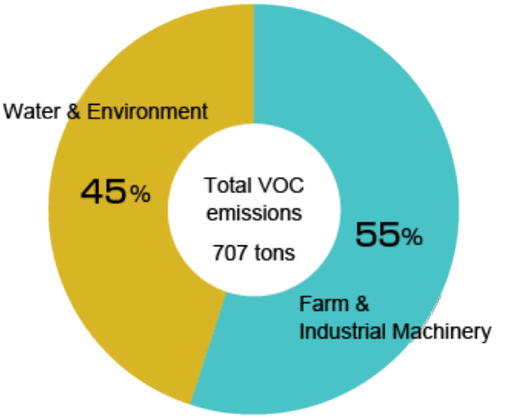


*1 VOCs comprise the six VOCs that are most prevalent in emissions from the Kubota Group: xylene, toluene, ethylbenzene, styrene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene.
*2 VOC emissions per unit of consolidated net sales.

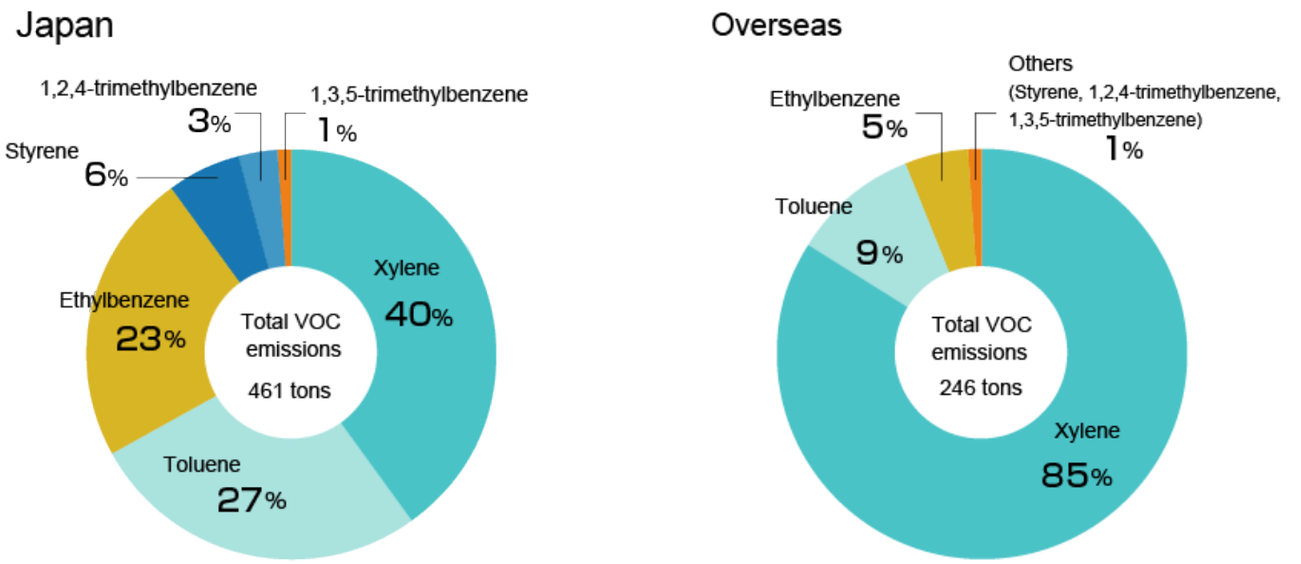
VOC Emissions by Region (RY2016 results)



VOC Emissions by Business (RY2016 results)



VOC Emissions by Substance (RY2016 results)

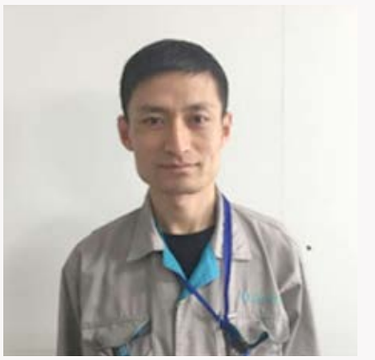


Voice **Reducing the use of chemical substances by changing the pre-paint treatment solution and introducing a thinner collection and recycling system**

At Kubota Engine (Wuxi) Co., Ltd., we worked on the reduction of the amount of chemical substances handled in production processes. As the pre-paint treatment to improve corrosion resistance and adhesiveness of paint, iron phosphate was used. Since waste water containing iron phosphate is strictly regulated and is difficult to be discharged after treatment, we condensed it and then entrusted its disposal to contractors as industrial waste. This process was associated with generation of sludge. Thus, in November 2015, we changed the pre-treatment solution to zirconium oxide. This eliminated hazardous iron phosphate in waste water, reducing approx. 70% per product unit of the waste water for entrusted disposal, as well as the amount of sludge generated.

At about the same time, in December 2015, we introduced a thinner collection and recycling system to the paint adjustment room, for the purpose of reducing the use of VOC-containing thinner for cleaning. By collecting and recycling thinner, we were able to reduce approx. 60% of the use of thinner per product unit, with approx. 90% reduction of the amount of thinner thrown away after use.

We will make comprehensive efforts to further reduce the use of chemical substances in various aspects.



Kubota Engine (Wuxi) Co., Ltd.
Manufacturing Department, Manufacturing Division
Zhang Shihua

Voice Reducing VOC emissions by installing VOC removal equipment using zeolite

In October 2016 Kubota Baumaschinen GmbH introduced the VOC (volatile organic compound) removal equipment that employs zeolite as the absorber for emissions treatment of the painting line.

At our plant, we use VOC-containing paint and thinner in painting processes, and has been working to reduce VOC emissions by employing VOC-free paint and thinner.

However, in view of our expanding product lineups and increasing production volume, as well as the trends in domestic laws and regulations, and based on the prediction that the environmental burden posed by the VOC emissions is likely to become too large to ignore, we decided to introduce the latest-model VOC removal equipment.

The VOC removal equipment we have introduced employs the condensation and combustion system, which combines absorption of VOC gases by zeolite and heat regenerative combustion using ceramics, and can conduct efficient treatment of emission gases in the painting line. In introducing the equipment, we adjusted it to be able to control the treatment volume of emission gas according to the operation status of multiple painting lines, as well as the amount of use of electricity and gas fuels, so as to save energy consumption. We also attached a concentration meter at the final exhaust outlet, so as to be able to monitor the VOC concentration after treatment.

The introduction of this equipment enabled us to remove 90% of VOCs.

We will make continuous efforts to identify any change at the plant and implement appropriate measures to reduce environmental load.

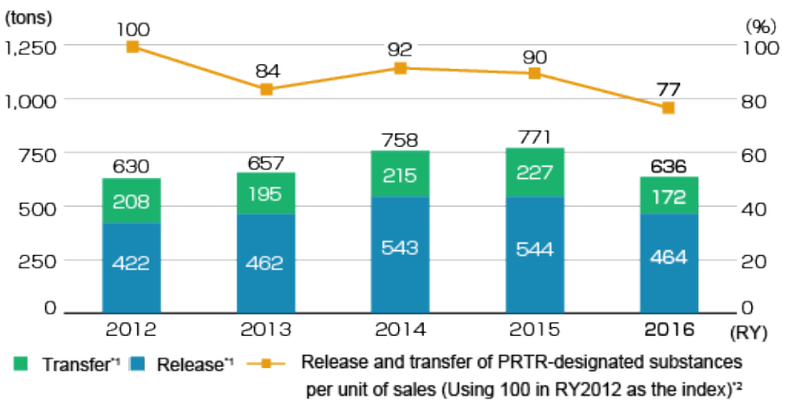
Kubota Baumaschinen GmbH
Chief, Work Safety Group
Michael Kieborz

Release and Transfer of PRTR-designated Substances

In RY2016, a total of 636 tons of substances stipulated in the PRTR Law* were released and transferred, a decrease of 17.5% compared to the previous reporting year. Additionally, the release and transfer per unit of sales improved by 14.7% compared to the previous reporting year. The decrease in PRTR release and transfer is mainly due to the reduction of production volume at cast iron production sites in Japan. Similar to reduction of VOC emissions, We are promoting the ongoing measures to reduce the PRTR-designated substances.

* Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof.

Trends in Release and Transfer of PRTR-designated Substances, and Release and Transfer per Unit of Sales (Japan)



*1 Total amount of declarable substances that are handled at each site (annual volume of 1 ton or more (0.5 ton for Specific Class I designations))
*2 Release and transfer of PRTR-designated substances per unit of consolidated net sales.

Monitoring Groundwater

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.

Groundwater monitoring (RY2016)

Business site	Substance	Measured groundwater value	Environmental standard
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

Reduction of Chemical Substances Contained in Products

The Kubota Group has set rules for identifying and properly managing chemical substances in products in order to comply with REACH regulations* in Europe and other chemical substance regulations.

Since RY2010, chemical substances in products have been classified as one of the three following categories and managed appropriately. With cooperation from our suppliers, we investigate chemical substances in products on a global basis.

* REACH Regulations: EU Regulations for Registration, Evaluation, Authorization and Restriction of Chemical

Three Control Levels

1. Substances to be Prohibited; Should not be contained in products
2. Substances to be Restricted; Should not be contained in products under certain conditions and applications
3. Substances to be Controlled; Presence in products should be recognized

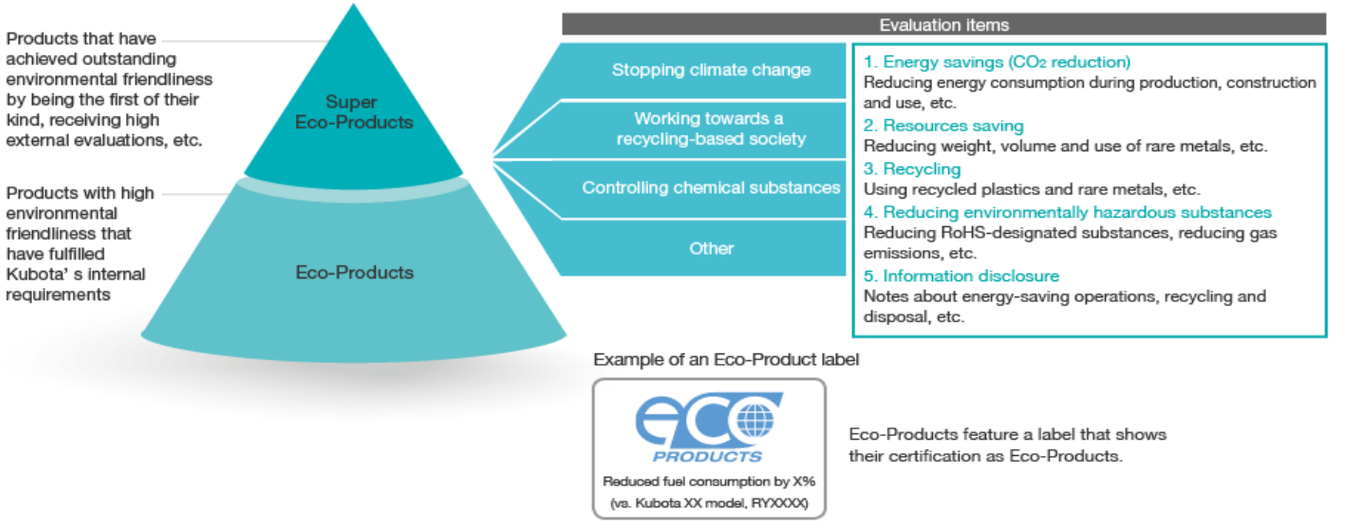
Expanding Environment-friendly Products and Services

The Kubota Group is contributing to resolving global issues by expanding our environment-friendly products and services. We are working on initiatives that consider the entire value chain, from procurement of raw materials to product disposal.

Internal Certification System for Eco-Products

Regarding the Internal Certification System for Eco-Products

The Kubota Group's internal certification system for Eco-Products was introduced to internally certify products with exceptional environmental friendliness. We evaluate products in accordance with each item stipulated in the Basic Direction of Corporate Environmental Management established by the Kubota Group; namely, "Stopping Climate Change," "Working towards a Recycling-based Society" and "Controlling Chemical Substances", and certify those products that satisfy our internal standards as Eco-Products.

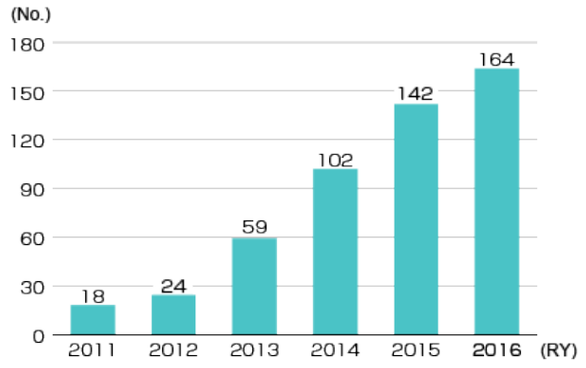


The Pathway to Expanding Certified Eco-Products

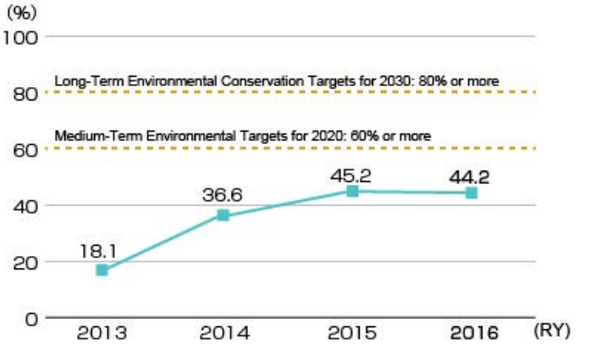
Based on the internal certification system established for Eco-Products, we certified additional 22 products in RY2016, bringing the total number of certified Eco-Products to 164. The ratio of Eco-Products to sales was 44.2%, a decrease of 1.0 point compared to the previous reporting year due to a decrease in sales of certified Eco-Products overseas.

We will continue to carry out initiatives focusing on the development of environment-friendly products and expand our Eco-Products lineup.

Trend in No. of Eco-Product Certifications (Total)



Trend in Sales Ratio of Eco-Products



Products certified as Eco-Products in RY2016 (excerpt)

Tractors
Slugger Series
SL35HQ

Compliant with exhaust gas regulations

Rice transplanters
SPV Series
2ZGQ-8D1 (SPV-8C) (China)

Compliant with exhaust gas regulations

Earthquake-resistant ductile iron pipe
GX-type
DN(Nominal diameter) 400

Conserving resources

Reducing environmentally hazardous substances

Wastewater treatment unit
Medium-size wastewater treatment units HCZ-type
HCZ-12-50

Conserving resources

Reducing environmentally hazardous substances

Combine harvesters
HARVEST MASTER
ERH450

Compliant with exhaust gas regulations

Construction equipment
Compact excavator
U-40-6E

Saving energy

Compliant with exhaust gas regulations

RY2016 Vending machine for cans and plastic bottles
2 compressor AC-type
36 cell, R1234yf refrigerant

Saving energy

Reducing environmentally hazardous substances

Packaged air conditioner
Air conditioner for area of factories
KBHP-ZP140-S

Saving energy

Reducing environmentally hazardous substances

Click here for details on products certified as Eco-Products

Environmental Considerations in the Product Life Cycle

The Kubota Group handles a diverse range of products, from agricultural and construction machinery to pipe systems and water treatment equipment. Since each product lifecycle has a different rate and scale of environmental load generation, it is important to employ an approach to reducing the environmental load appropriate to the characteristics of each product.

Environmental Consideration in Construction Machinery

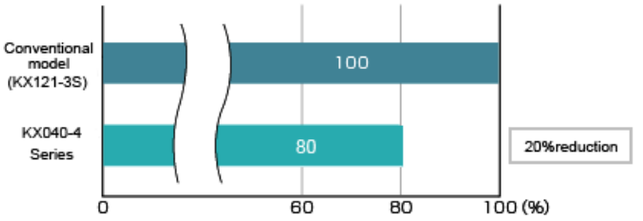
Construction machinery contributes to the development of social infrastructure, such as roads and water supply systems. The Kubota Group, as a leading manufacturer of small construction machinery, is engaged in initiatives to reduce environmental load during use of its products, such as the Kubota's unique approach to reduce fuel consumption, as well as ensuring compliance with emissions regulations and improving the maintenance performance to prolong product life.

Compact excavator KX040-4 Series

Reducing Fuel Consumption by Employing Kubota's Unique Hydraulic System and Energy-saving Engine

For the compact excavators KX040-4 Series, Kubota has reduced fuel consumption during use by 20% compared to conventional models, by employing Kubota's unique hydraulic system and energy-saving engine.

Comparison of fuel consumption per work unit



(1) Kubota's unique hydraulic system

Equipped with the "eco PLUS" function to perform optimal hydraulic control according to the work load, this hydraulic system helps to reduce fuel consumption.

(2) Energy-saving engine

The downsized* engine with a direct-injection combustion system helps to reduce fuel consumption.

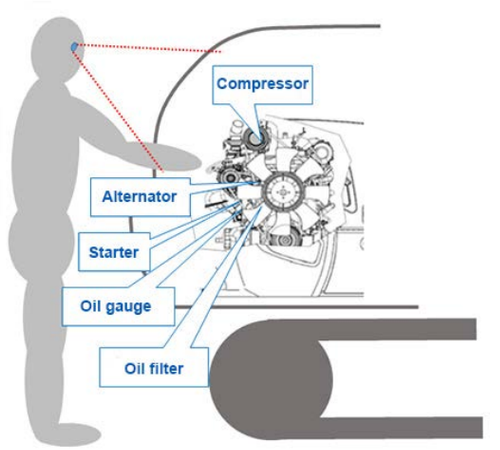
* With reduced displacement volume (2.2 liter →1.8 liter) and reduced number of cylinders (4 cylinders → 3 cylinders)

Making Exhaust Gas Cleaner to Comply with The Latest Exhaust Gas Regulations

Kubota's engines comply with the latest exhaust gas regulations (Tier4) in North America.

Improving The Maintenance Performance of The Engine Peripheral Area

For the engine peripheral area, the one-side maintenance structure is adopted to make daily inspection and maintenance easier, thereby preventing occurrence of failure, with the aim of contributing to the extension of the product life.



One-side maintenance structure
(The structure enables visual check of the portions requiring inspection and maintenance operations from the opening of the rear hood.)

Voice Aiming to achieve both the development of social infrastructure and conservation of global environment

Since its production start in 1974, the Kubota Group's compact excavators have undergone improvement of its workability to respond to the customer needs and optimization of the vehicle size, and have been used widely not only in Japan but also overseas, contributing the development of social infrastructure. Recent years, we have been working hard especially to improve environmental friendliness and safety.

In terms of environmental friendliness, we have achieved the reduction of environmental load and the improved work efficiency at the same time, through adopting energy-saving features such as the hydraulic system with improved efficiency and downsized engine, as well as the extended life of consumable parts.

Additionally, improved operability and easiness in maintenance, along with the locking system for all operation levers and other features make it easier for ordinary operators to use and work safely.

We will continue to provide our customers with products that achieve both the development of social infrastructure and conservation of global environment.

Kubota Construction Machinery Engineering Department for Excavator

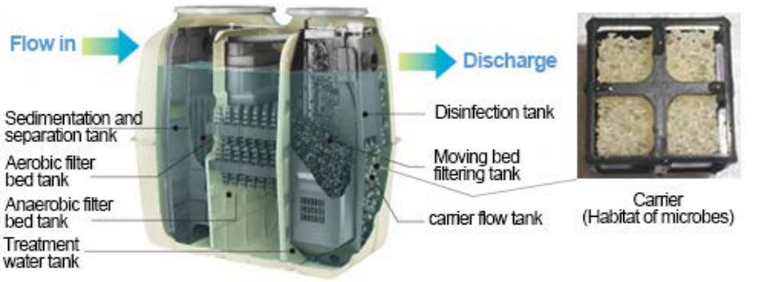
Teruo Kunizawa

Environmental Consideration in Small Wastewater Treatment Units

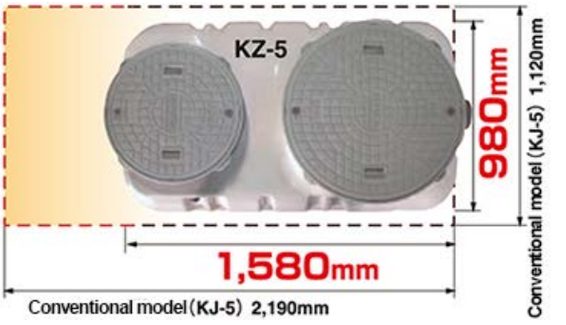
A wastewater treatment unit is the equipment to purify residential sewage, and used mainly in medium to small-sized cities. Since it requires installation of efficient and appropriate sewage treatment facility for each household, a small-sized unit, which can be easily installed in a limited space, is needed. The Kubota Group is working on downsizing of wastewater treatment units, thereby saving labor for construction.

Downsizing of Wastewater Treatment Units, thereby Saving Labor for Construction

Kubota has developed a compact wastewater treatment unit KZ-type, by employing carrier that can retain many microbes to improve the treatment performance per unit volume. This product is lighter and requires reduced volume of excavation for installation, contributing to the labor saving for construction work and the reduction of waste soil generated.

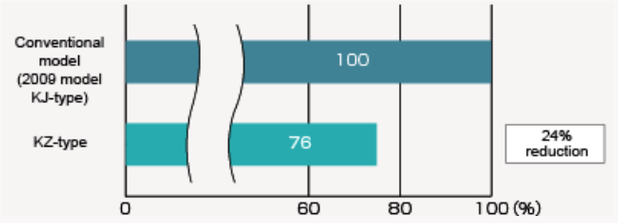


Perspective diagram of compact wastewater treatment unit KZ-type and high-performance carrier



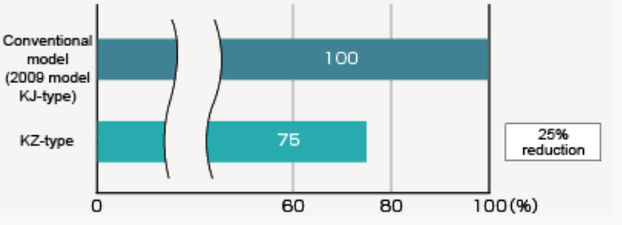
Downsizing of wastewater treatment unit KZ-type

Comparison of excavation volume* in construction



*Excavation volume is calculated based on the internal calculation standard.

Comparison of weight of small wastewater treatment units



The Evolution of Environment-friendly Products and Services

The Evolution of Engines

Since it started production of the water-cooled horizontal-type oil engine Type A for agriculture and industry in 1922, Kubota has thoroughly pursued basic performance of industrial engines. Responding also to the increasingly tightened exhaust gas regulations of many countries in the world, Kubota engines have constantly satisfied the needs of the customers worldwide as the power source of various types of industrial machinery.

History of Engines

Year	Topics	Conformity to Exhaust Gas Regulations*2	Total production volume
1920	• Started production of the water-cooled horizontal-type oil engine Type A for agriculture and industry. (1922)		
1930	• Started production of diesel engines for land use. (1931)		
1950	• Started production of air-cooled gasoline engines. (1956) • Started production of water-cooled vertical type diesel engines. (1959)		
1980	• Succeeded in direct injection of small diesel engines. (1982)		• Reached 10 million units (1987)
1990		• EPA Tier1 (1999)	
2000	• Started accepting bio diesel fuels. (2008)*1	• EPA Tier2 (2004) • EPA Tier3 (2008)	• Reached 20 million units (2002)
2010		• EPA Interim Tier4 (2012) • EPA Tier4 Final (2015) • Europe StageV*3 [Plan] (2019)	• Reached 25 million units (2011) • Reached 28 million units (2016)

*1 Please contact us if you use biodiesel.

*2 For exhaust gas regulations, the EPA (US exhaust gas regulations) regulations for the non-road diesel engines with output range of 56 to 75 kW are presented as the representative.

*3 For Europe StageV exhaust gas regulations (output less than 56 kW) are expected to be the world's most strict regulations for non-road diesel engines.

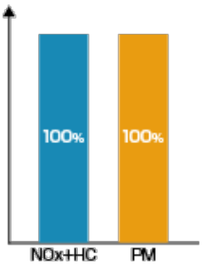
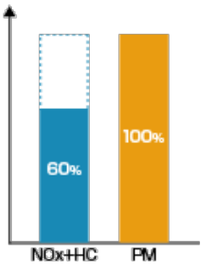
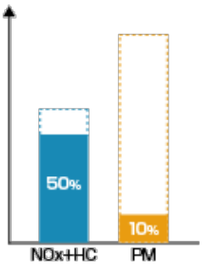
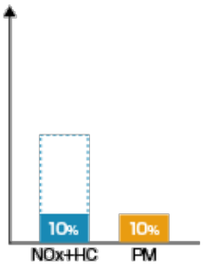
Conformity to Exhaust Gas Regulations

Kubota's engine technologies have evolved through undergoing improvements to conform to the exhaust gas regulations, which have been increasingly tightened year by year worldwide. Engines are required not only to satisfy the exhaust gas regulations but also to meet various performance requirements related to fuel efficiency, durability, etc. Kubota has developed basic performance based on its combustion control technologies, and selected the optimal parameters for the shape, materials, hardness, toughness, and other characteristics of each of the hundreds of parts constituting the engine, thereby pursuing the comprehensive improvement of the quality.

Kubota's engines have been highly evaluated for their compactness and high quality, boasting the largest share in the world market of industrial engines below 100 horsepower.

The following is the history of V3 Series, as the representative to show how the exhaust gas of Kubota engines have become cleaner.

History of Cleaning Exhaust Gas (engine output: 56 kW to 75 kW)

	From 2004	From 2008	From 2012	From 2015
Appearance				
Model	V3800DI-E2	V3800DI-T-E3	V3800-CR-TE4	V3800-TIEF4
Specifications	—	EGR	EGR+ CRS+ DOC+ DPF	EGR+ CRS+ DOC+ DPF+ SCR
Exhaust gas regulations	EPA Tier2	EPA Tier3	EPA Interim Tier4	EPA Tier4 Final
Exhaust gas regulation value* (g/kWh)				

* NOx (nitrogen oxides): Acidic substance that constitutes the cause of acid rain, bronchitis, etc.
HC (Hydrocarbon): is generated when mixture gas that was not burned due to incomplete combustion is discharged
PM (particulate matter): particulates generated in combustion, such as soot

Technologies Applied to Latest Engine

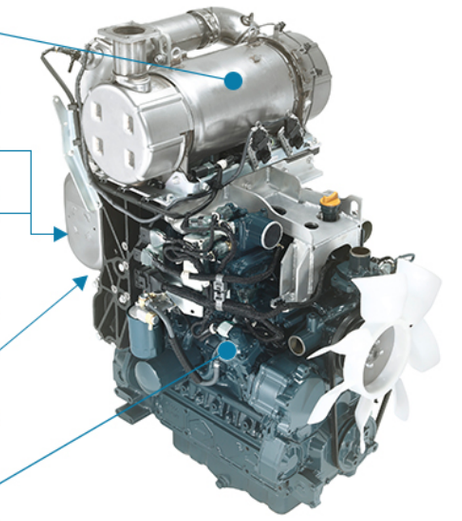
SCR: Selective Catalytic Reduction
Post-treatment equipment for diesel exhaust gas, which reduces NOx to harmless nitrogen and water

DOC: Diesel Oxidation Catalyst
Oxidizes unburned gases in the exhaust

DPF: Diesel Particulate Filter
Exhaust gas post-treatment equipment (filter) to collect particulate matter contained in the exhaust gas of diesel engines

EGR: Exhaust Gas Recirculation
A structure to reduce generation of NOx by returning a part of the exhaust gas into combustion air

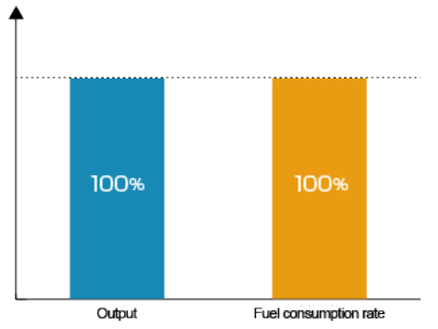
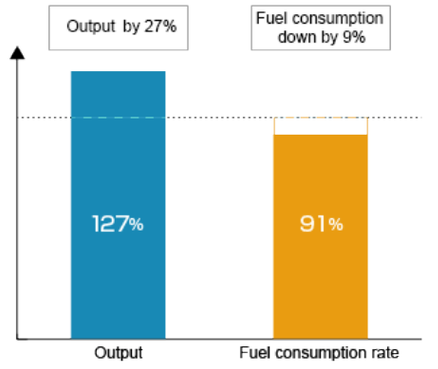
CRS: Common Rail System
Performs high-pressure injection of fuels multiple times, to improve combustion efficiency, achieving purification and high-power output of exhaust gas



Increasing Output and Improving Fuel Consumption Ratio

Kubota's engines contribute to the realization of comfortable and environment-friendly operations, as the power source of diverse and various industrial machinery. So far, Kubota has worked on increasing the engine output without changing their appearance and shape, and also improving the fuel consumption rate. It is important to improve the fuel consumption rate while satisfying the exhaust gas regulations.

Increasing Output and Reducing Fuel Consumption

		1999 Original model（V3300-TE）	2015 Latest model（V3800-TIEF4）
Rated output (kW) Fuel consumption rate*1 (g/kWh)			
Improvements	(1) Output increased Bore diameter*2 × strokes Displacement	100% ø98mm×110mm 3318cc	127% ø100mm×120mm 3769cc
	(2) Changed combustion method	Swirl chamber type (mechanical type)	Direct injection type (electronic control type)
	(3) Compliant with exhaust gas regulations (Specifications)	Conforming to EPA Tier1 (No EGR)	Conforming to EPA Tier4 Final (EGR+ CRS+ DOC+ DPF+ SCR)

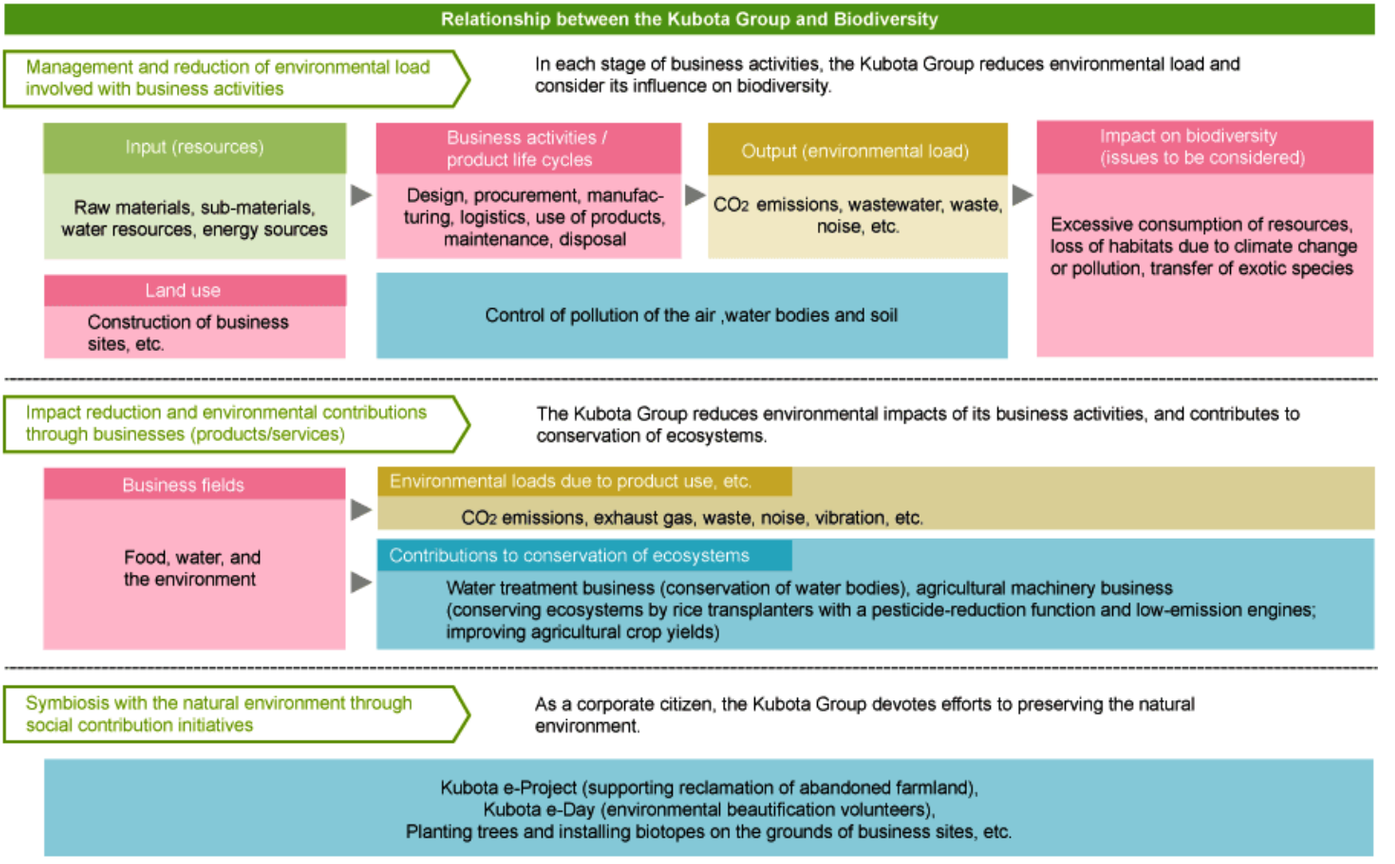
*1 Fuel consumption rate during rated output

*2 Cylinder internal diameter

Conservation of Biodiversity

Conservation of biodiversity is set as one of the targets for the Kubota Group's "Eco-First Commitment." In its business activities and social contribution initiatives, the Group is endeavoring to ensure that care is taken to conserve biodiversity and protect the natural environment.

Relationship between the Kubota Group and Biodiversity



Initiatives taken at business sites

Kubota Kyuhoji Business Center　Voluntary maintenance and management of flowerbeds

Members of the Kubota Kyuhoji Business Center participate in a voluntary activity for maintenance and management of flowerbeds at the Kyuhoji Green Space twice annually. In 2016, members of the Business Center in the both labor and management sides, mainly the employees belonging to the Gardening Department, planted flower seedlings.

In December 2016, Kubota received a certificate of gratitude from the Kyuhoji Green Space administration office for this activity's great contribution to the development of the Kyuhoji Green Space.

Maintenance work for flowerbeds


感謝状

株式会社　クボタ　殿

貴団体はボランティア活動を通して久宝寺緑地の発展に大きく貢献されました
よってここにその功績をたたえ感謝の意を表します

平成二十八年十二月三日

堺市公園久宝寺緑地指定管理共同体
久宝寺緑地管理事務所
所長　荒木　幹雄

Certificate of gratitude from the Kyuhoji Green Space administration office

KUBOTA Precision Machinery(Thailand) Co., Ltd.　Planting trees on the grounds of plant site

KUBOTA Precision Machinery (Thailand) Co., Ltd. promotes tree-planting on the grounds within the plant site. In the Environment Month of June 2016, members of the company, including mainly the employees in safety and environment-related teams, and with participation of President, planted trees at the site. Aiming to make a clean plant that contributes to the environmental conservation, employees actively participate in the tree-planting activities




Members planting trees

Kverneland Group UK Ltd.　Planting trees at the office site

Employees of Kverneland Group UK Ltd. participate in tree-planting activities within the office site. In 2016, they planted fruit trees in the green space within the office site. They will have flowers in spring and bear fruits in summer. Moreover, they also made a table and benches using waste wooden pallets. As a result, a comfortable space where employees can freely spend their breaks and enjoy nature was created. There are also flowerbeds in front of the office, in which the kinds of flowers that may attract wild birds and bees are planted.

Planting trees

Maintenance work for flowerbeds

Environmental Management

Based on its internal control system, the Kubota Group is establishing environmental management systems at each site and enhancing its risk management activities. In recent years, we have engaged in activities to strengthen environmental management at our overseas sites.

Compliance with Environmental Laws and Regulations

To ensure compliance with environmental laws, the Kubota Group has set and thoroughly manages its own control values at each of its sites for exhaust gas, wastewater, noise, vibration and other variables that are stricter than the relevant laws and regulations. We have established a system to promptly report any non-compliances and complaints related to environmental laws and regulations to the head office.

Despite these efforts, however, in 2016 we had a case of exceeding of the wastewater control value and a case of inappropriate treatment of PCB-containing devices at production sites in Japan, and a case of the leakage of cooling water at a Group company in Japan. Moreover, in 2017 a case of exceeding the wastewater control value arose at a production site in Japan. None of these cases resulted in any serious incidents, and we implemented necessary measures to prevent any impact on the ambient environment and are working to prevent recurrence.

Environmental Auditing

Each year, the Kubota Environmental Protection Department conducts an environmental audit that incorporates a written audit targeting all production sites, service sites, offices, and construction and maintenance management departments domestically, as well as overseas group production sites.

Moreover, in addition to the environmental audit by the Environmental Protection Department, annual internal environmental audits are conducted at production sites in an effort to further improve the level of environmental management.

Environmental audit at Kubota Agricultural Machinery (Suzhou) Co., Ltd. (China)

RY2016 Environmental audit implementation status

- Number of subject sites and departments:
  277
- Number of audit items:
  25 (for maintenance and management departments) up to 61 (for overseas production sites)
- Audit details:
  Water and air quality management, noise and vibration management, waste discharge and chemical substances management, climate change prevention, response to abnormalities and emergencies, and environmental management system

Environmental Risk Assessment

Each year, detailed environmental risk assessments are conducted to evaluate the use of hazardous substances and the functions of environment-related equipment with the aim of clarifying the status of environmental risk at each production site and establishing systematic improvements.

The Kubota Group is proactively working to reveal possible environmental risks and further reduce risk by conducting environmental audits and environmental risk assessments—two activities with differing perspectives—in parallel.

Environmental Risk Assessment
Kubota Industrial Equipment Corporation (United States)

RY2016 environmental risk assessment implementation status

- Number of subject sites and departments:
  37 (27 production sites in Japan, 10 overseas production sites)
- Number of audit items:
  252 items (146 water quality, 106 air quality)
- Assessment targets:
  Water quality-related equipment, air quality-related equipment

Environmental Patrols

At each site, environmental patrols are carried out to meticulously assess the entire site and confirm the absence or presence of conditions that may lead to environmental accidents or violations of environmental laws and regulations. In RY2016, Kubota formulated the Environmental Patrol Handbook, which provides the key points with which even unexperienced personnel can notice abnormality during environmental patrol, and distributed it to each site in Japan. Kubota aims to reduce the environmental risks by conducting the environmental patrol using this Handbook and finding the situation that may cause any abnormality in an early stage.

Practice Report Environmental patrol at Kubota Ryugasaki Plant

The Kubota Ryugasaki Plant conducts environmental patrols in accordance with the environmental conservation regulations of the Kubota Group.

We check the workplace environment and the management status of waste disposal and wastewater treatment, etc. in the monthly patrols. In the Kubota Group Environment Month in June 2016, we added saving of energy, electricity, and water use to the activity themes, and distributed to each workplace a checklist summarizing the matters to check. Based on this checklist, the equipment and devices, such as lights and air-conditioners, were checked at all workplaces including production floors and business offices. Through participation in the environmental patrols, each employee became aware of the importance of eliminating wasteful use of energy.

We will continue to conduct and further enhance the periodic environmental patrols, with the aim of eliminating wasteful use of energy and preventing environmental accidents, as well as raising the environmental awareness of the employees.

Environmental patrol in the painting booth

Drills for Responding to Abnormal and Emergency Situations

The Kubota Group is working to identify and minimize environmental risks associated with its business activities through risk-specific response procedures.

We are also conducting drills each year based on response procedures that assume the outbreak of environmental accidents or situations that could arise in environmental accidents, in order to mitigate the impact on the ambient environment.

Emergency response drill simulating the leakage of paint/thinner
Kubota Air Conditioner, Ltd.

Emergency response drill simulating the leakage of gas
P.T. Metec Semarang (Indonesia)

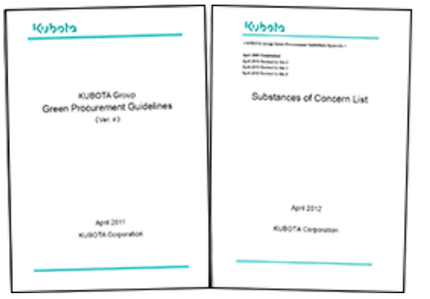
Green Procurement

Green Procurement Guidelines

For the purpose of providing products that are friendly to global and local environments, the Kubota Group is seeking to procure products with reduced environmental impact from eco-friendly suppliers.

In order to proactively promote these activities, Kubota presents its policies on green procurement to suppliers through the Kubota Group's Green Procurement Guidelines, asking for their understanding and cooperation.

For details on the Kubota Group's Green Procurement Guidelines, click here.



The Kubota Group's Green Procurement Guidelines and Appendix
(Published in Japanese, English and Chinese)

Award System for Green Procurement

The Green Supplier Award System was launched in RY2015 to award suppliers recognized as having made notable contributions in the area of environmental conservation, such as the materials and components procured by Kubota Corporation. The awards are presented every year.

In accordance with the Kubota Group's Green Procurement Guidelines, this award system quantitatively evaluates environmental conservation activities engaged in by suppliers, such as saving resources and energy-saving activities in relation to goods supplied to Kubota Corporation, and awards the excellent activities.

In RY2016, of the 152 environmental conservation activities, 12 activities with particularly high achievements were awarded.

RY2016 awarding ceremony (January 2017)

We will continue to utilize this system and carry out activities in the name of green procurement and promote environmental conservation initiatives hand-in-hand with our suppliers.

Environmental Education and Enlightenment

Results of Environmental education in RY2016

The Kubota Group offers environmental education programs to raise awareness among its employees. The education program for employees consists of rank-based training, professional training, and general training. Kubota assists external group's environmental education programs.

Classification	Course title	Frequency	No. of participants	Course descriptions
Education by employee-level	Kubota Introductory course (new employees, etc.)	3	181	Global and local environmental issues and Kubota's environmental conservation activities
	CSR training	2	101	Environmental issues and environmental risk management
	Training for newly appointed supervisors	2	32	Kubota's environmental management and efforts as supervisors
	Training for newly appointed foremen	1	18	Kubota's environmental management and efforts as foremen
	Environmental forum for executive management	1	193	Lecture by Tokio Imbe, President of National Agriculture and Food Research Organization
Professional education	Basics of environmental management	1	26	Basic knowledge of legal systems, environmental risk, and environmental conservation
	Waste management	2	37	Waste Management and Public Cleansing Law, practical training in consignment contracts and manifests, etc.
	Environment-related facility management	2	27	Pollution control technologies and pollution control laws
	Education to train ISO 14001 environmental auditors	4	62	The ISO 14001 standard, environment-related laws, audit techniques
	New waste management system training	13	148	Training on waste electronic information management systems
General training	Business sites in Japan and overseas Environmental education	7	190	The Kubota Group's environmental management and medium-term environmental conservation targets
	Total	38	1015	

Supporting education in outside organizations	Internship program with Utsunomiya Hakuyo High School	1	5	Kubota environmental conservation activities and efforts at Utsunomiya Plant

Environmental management education (Participants: environmental staff of each Chinese site)

Environmental forum for executive management (Lecturer: Mr. Tokio Imbe)

Practice Report Environmental awareness-raising activities through the Environment Dojo

Kubota Sakai Plant set up the Environment Dojo within the Plant in 2012 and has promoted activities to raise environmental awareness of its employees. The Environment Dojo is a training program targeting all employees of the Plant from new entrants to management. Its objective is to make all employees aware of the necessity of the environmental conservation activities, thereby activating the initiatives toward elimination of the environmental risks and reduction of environmental loads. The program includes the ideas to make the training contents easy to understand and interesting, such as display of actual goods and distribution of leaflets.

The Environment Dojo program is continuously held twice to four times a month. The contents were totally renewed in March 2016 to start the second version of the program, in which a total of 2,046 employees have participated as of December 2016. We will continue to make efforts to raise awareness of all employees, and promote the improvement activities at workplaces as well as the environmental awareness-raising activities that may be put into practice at home.

Environment Dojo Energy-conservation display corner

Environment Month Report Raising environmental awareness of employees and family members through Kubota Eco Challenge

In order to boost the level of each member's understanding and awareness of the environmental issues toward the realization of its brand statement "For Earth, For Life," the Kubota Group launched "Kubota Eco Challenge" as a new initiative during the Kubota Group Environment Month in June 2016. The Kubota Eco Challenge is an environmental photo contest, inviting photos of eco-friendly actions by the Group employees and their family members around the world at work or home.

A total of 385 photos were posted, each demonstrating unique characteristics of each country or site. The top ten photos in a popularity poll were awarded.

This contest not only helped raise the environmental awareness, but also provided a good opportunity for the Group employees and their family members around the world, who usually have no contact with each other, to gather under the same theme and share their thoughts.

Cleaning of a temple (Myanmar)

Greening of the rooftop of a family house (China)

Environmental Achievement Awards

During the Environment Month in June every year, the Kubota Group presents the Environmental Achievement Awards to praise the individuals and groups that have made notable contributions to environmental conservation, as well as to boost the Group's employees' environmental conservation awareness and activate their environmental activities.

In RY2016, the scope of the awards was expanded to include non-production sites and product development departments in addition to production sites, and various environmental conservation activities including education and enlightenment, and social contribution, were evaluated. As a result, 24 cases were awarded for their achievements in energy saving, waste reduction, VOC emissions reduction, development of environment-friendly products, environmental awareness raising, community environmental activities, etc. Two of them were awarded as Excellent Prize.

We will continue to award the excellent initiatives that contribute to the environmental conservation, and encourage sharing of the details of such initiatives within the Group, with the aim of further activating the environmental activities.

Environmental Achievement Award Excellent Prize in RY2016

Scope	Company, department	Theme
Production sites	SIAM KUBOTA Corporation Co., Ltd. Amata Nakorn Plant (Thailand)	Reduction of the consumption of natural gas by boilers through research and development of pre-paint treatment solution available at room temperature
Non-production sites	KBS Kubota Co., Ltd. Kubota Machine Logistics Solution Department	CO_2 reduction by round use of east and west containers

RY2016 Environmental Achievement Awards in RY2016

Scope	Classification, No. of winners
Production sites	Excellent Prize: 1, Encouragement Award: 10, Good Effort Award: 5
Non-production sites	Excellent Prize: 1
Product development	Encouragement Award: 5
Education and enlightenment	Education and Enlightenment Award: 1
Social contribution	Social Contribution Award: 1

Environmental Communication

Since it published the first Environmental Report in RY1999, the Kubota Group has disclosed its environmental information every year. Environmental information, such as the initiatives taken by the entire Group and each business site and the results of the activities, are communicated through the Group's website. In addition, environmental communication is also promoted at each business site for the purpose of achieving symbiosis with local communities, thereby enhancing understanding of the environmental conservation activities.

Receiving Environmental Awards

Kubota Environmental Service Co., Ltd. receives the Minister of Environment Award for Contributor in the Research and Development on Waste and Wastewater Treatment Tank

In October 2016, at the 60th National Convention for Environmental Sanitation sponsored by the Japan Environmental Sanitation Center, Mr. Mitsuru Iwao of the Sales Department, Kubota Environmental Service Co., Ltd. received the Minister of Environment Award for Contributor in the Research and Development on Waste and Wastewater Treatment Tank.

This award is granted to individuals and organizations that have made excellent achievement in research and development in the field of waste and wastewater treatment tank. Mr. Iwao has made substantial contribution to the dissemination of the sludge treatment centers through his long years of research on themes related to wastewater treatment, such as high-load method, methane fermentation, and phosphorous recovery. This contribution was highly appreciated and resulted in the award.

Award winner Mr. Mitsuru Iwao


The 60th National Convention for Environmental Sanitation award ceremony

The high-efficient twin screw press dehydrator receives METI Minister’s Award at Outstanding Environmental Systems Awards

The high-efficient twin screw press dehydrator for water and wastewater treatment developed by Kubota’s Water Engineering & Solution Business Unit received the Economy, Trade and Industry Minister’s Award, the highest place, at the 42nd Outstanding Environmental Systems Awards held by the Japan Society of Industrial Machinery Manufactures (JSIM) in June 2016. The high-efficient twin screw press dehydrator is a system to dehydrate sludge generated from sewage treatment plants, etc. and reduce its volume.

The purpose of this awarding program is to promote research and development of environmental conservation technologies, and dissemination of outstanding environmental systems. The eligible systems are those contributing to conservation of the global environment, being sold for ten or less years and operating in practice for at least six months.

The high-efficient twin screw press dehydrator system was awarded for its uniqueness in that the screw axis increased from single to twin, the dehydration performance improved from conventional machines, economic performance realizing reduction of running cost, and future potential ensuring applicability not only in Japan but also to overseas.


賞状

高効率型二軸スクリュープレス脱水機

株式会社クボタ殿

貴社が研究開発した右の装置は一般社団法人日本産業機械工業会主催第四十三回優秀環境装置表彰において品質及び性能が優秀であり環境保全及び環境装置産業の振興に貢献するところが多大であると認められましたのでこれを賞します

平成二十八年六月二十日

経済産業大臣 林 幹雄

METI Minister’s Award at Outstanding Environmental Systems Awards Certificate of Commendation

High-efficient twin screw press dehydrator

Kubota Agricultural Machinery (Suzhou) Co., Ltd. receives the Environmental Management Outstanding Company Award

In June 2016, Kubota Agricultural Machinery (Suzhou) Co., Ltd. (China) received the Environmental Management Outstanding Company Award from the Suzhou Industrial Park National Land Environment Protection Bureau.

This awarding program evaluates the operation of the environmental management systems of the companies in the Suzhou Industrial Park, introduction of advanced environmental facilities, and the improvement activities to improve environmental performance. Its aim is to reduce the environmental risks in the Park by improving the company's environmental awareness and the management level. Ten out of the 37 companies that had applied received the award at the environmental event held at the Yangcheng Lake on the World Environment Day of June 5.

Kubota Agricultural Machinery (Suzhou) will continuously promote environmental conservation activities by steadily operating the environmental management.

Environmental Management Outstanding Company Award ceremony

Kubota Construction Machinery (Wuxi) Co., Ltd. receives the Eco Civilization Public Interest Award

In June 2016, Kubota Construction Machinery (Wuxi) Co., Ltd. (China) received the Eco (ecosystem) Civilization Public Interest Award 2016 from Wuxi New District Environmental Protection Agency, China.

This awarding program, aimed at improving the social responsibility awareness regarding the environment of the companies belonging to the New District, evaluates the initiatives for the environmental conservation and the activities of environmental education for employees. In RY2016, ten companies out of over 1000 companies were awarded. The award-winning companies are expected to fulfill their social responsibilities related to the environment, raise the environmental awareness of employees by enhancing the environmental education, and actively participate in social contribution activities, with the aim of building an ecological civilization in the New District.

We will continue to make efforts to ensure compliance with the environmental laws and regulations, and improve the environmental awareness of employees.

Certificate of Commendation for the RY2016 Eco Civilization Public Interest Award

Kubota Engine (Wuxi) Co., Ltd. certified as a water conservation model company

In February 2016, Kubota Engine (Wuxi) Co., Ltd. (China) was certified as a “water conservation model company 2015” by the Wuxi Municipal Bureau of Water, China. This system certifies companies, offices, local communities, schools, etc. that have been recognized for their initiatives for saving water or tackling pollution, as models for building a water-saving society in China, and offers subsidiaries to them. On-site inspections, interviews with employees, and documentary examinations have found that Kubota Engine (Wuxi) is actively and systematically promote activities focusing on water conservation, that the water conservation effect of the introduction of a wastewater treatment and recycling system is obvious, and that these are advanced initiatives. This resulted in the certification.

Kubota Engine (Wuxi) Co., Ltd. will make continuous efforts to reduce the water use and discharge, and other actions to reduce environmental load.

无 锡 市 水 利 局

锡水资函[2016]12号

关于印发新区2015年度节水载体考评意见的通知

新区水利局：

绿杰科技（无锡）有限公司、无锡市欣旺大酒店有限公司、无锡市新区新安街道新安花苑第三社区居民委员会、利纳马汽车系统(无锡)有限公司、久保田发动机（无锡）有限公司、阿莫斯模热融产品（中国）有限公司、无锡市新区南丰小学，分别是我市2015年度节水型社会建设目标任务中确定的省级节水型企业、省级节水型单位、省级节水型社区、八大行业节水行动项目、节水减排示范项目和市级节水型学校创建单位（市政府锡政办发〔2015〕90号，市水利局锡水资[2015]7号，锡水资[2015]20号，市水利局、教育局锡水资[2013]12号），经以上七家单位认真组织实施，已圆满完成任务。2015年11月，我局对以上创建单位进行了考评（其中，省级节水型企业、省级节水型单位、省级节水型社区受省水利厅委托考评），现将考评意见印发给你们，希你局认真总结经验，加大宣传推广力度，进一步提高节约用水工作水平。

Notice of certification of a water conservation model company 2015

Kubota Construction Machinery (Wuxi) Co., Ltd. and Kubota Engine (Wuxi) Co., Ltd. rated “Green” in the FY2015 Wuxi New District Corporate Environmental Protection Reliability Evaluation System

In May 2016, Kubota Construction Machinery (Wuxi) Co., Ltd. and Kubota Engine (Wuxi) Co., Ltd. acquired the “Green,” the highest rating in the FY2015 Wuxi New District Corporate Environmental Protection Reliability Evaluation by the Environmental Protection Bureau of the Wuxi City New District. The aim of this evaluation system is to pursue sustainable development of economy and society through encouraging the companies in the Wuxi City New District to enhance environmental management, ensure thorough compliance with the environmental regulations, and raise awareness of their social responsibility. Reliability of environmental conservation of each company is rated in 5 ranks.

The two companies will continue to be sincerely committed to environmental protection, and aim to be companies recognized by society.

P.T. Kubota Indonesia receives BLUE PROPER award

In December 2016, P.T. Kubota Indonesia received the BLUE PROPER award for the fifth time from the environment minister of the Indonesian government for its corporate activities during a year from July 2015. The PROPER (the Environmental Performance Rating Program) is a rating program of the Indonesian ministry of the environment, which assesses the companies’ status of compliance with the environmental regulations and the status of implementation of environmental measures, and discloses them to the public. The aim of this program is to raise companies’ awareness about environmental management, and encourage implementation of activities for energy saving, conservation of biodiversity, and community development.

Certificate of Commendation for the BLUE PROPER award

The BLUE PROPER award is given to companies that comply with 100% of the environmental regulations and properly operate the environmental management system. P.T. Kubota Indonesia will make continuous efforts to enhance environmental management.

Three Thai sites receive the Green Industry Award

SIAM KUBOTA Metal Technology Co., Ltd. (SKMT), SIAM KUBOTA Corporation Co., Ltd. (head office, SKCN), and KUBOT Precision Machinery (Thailand) Co., Ltd. (KPMT) received the Green Industry Award in 2016 from the Thai government after being recognized as clean plants that are environmentally conscious. This award is broken down into five levels, (with Level 5 being the highest). SKMT and KPMT were rewarded Level 3 for having established a management system in which PDCA is solidly operated, while SKCN was rewarded Level 4 in recognition of having a well-established corporate culture that carries out environmental conservation activities.


Green Industry
กระทรวงอุตสาหกรรม
ใบรับรองฉบับนี้ให้ไว้กับ
บริษัท คูโบต้า พรีซิชั่น แมชชีนเนอรี่ (ประเทศไทย) จำกัด
เพื่อรับรองว่าเป็น
อุตสาหกรรมสีเขียวระดับที่ ๓
ระบบสีเขียว (Green System)
(นายอาทิตย์ วุฒิคะโร)
ปลัดกระทรวงอุตสาหกรรม

Green Industry Award Certificate of Commendation

KUBOTA REPORT 2016 (Full Report version) receives Special Award for Reliable Reporting in the 20th Environmental Communication Awards

The Kubota Group's business and CSR report "KUBOTA REPORT 2016 (Full Report Version)" received the Special Award for Reliable Reporting (The Japanese Association of Assurance Organizations for Sustainability Information Chairman's Award) in the environmental report category of the 20th Environmental Communication Awards.

The 20th Environmental Communication Awards ceremony

The Environmental Communication Awards are a commendation program for excellent environmental reporting, with the aim of promoting environmental communication between business operators and their related parties, and further activating their commitment to environmental initiatives. It was the second time, following the previous year, for Kubota to receive the Special Award for Reliable Reporting, which is presented to environmental reports that demonstrate particular efforts made to improve reliability and transparency in communication of information on the environmental initiatives. The KUBOTA REPORT 2016 was appreciated for its clearly describing how the Kubota Group is advancing its initiatives in line with the latest trends related to sustainability, with recognition of the relationships between social issues and the Group's businesses. The Report's clear presentation of the entire image of environmental loads and the policies for stakeholders also resulted in the awarding.

The Kubota Group will make continuous efforts to further improve the reliability and comprehensiveness of its environmental reporting, while enhancing information communication to help stakeholders deepen understanding toward the Group.

Kubota Utsunomiya Plant awarded by the Kanto Electricity Use Rationalization Committee

The Kubota Utsunomiya Plant received the highest prize in the Kanto Electricity Use Rationalization Committee Chairman's Awards in February 2016.

In this awarding program, plants, offices, and individuals that have made remarkable achievements in promoting the rationalization of the use of electricity are recognized based on the comprehensive evaluation on their organizational management, electric power management, facility management, equipment efficiency, and other initiatives. By broadly presenting such achievements to society, it is aimed to raise the public awareness of the importance of the electricity use rationalization. The Utsunomiya Plant was awarded the highest prize for its full-scale introduction of amorphous transformers and the introduction of high-efficiency modular chiller to reduce CO_2 by 70% generated from air-conditioners.


表彰状

最優秀賞

株式会社クボタ
宇都宮工場殿

貴事業所は電気使用合理化
活動において顕著の成績を
得られました
このご努力に敬意を表し
ここに表彰いたします

平成二十八年二月十八日

関東地区電気使用合理化委員会
委員長 大亀 薫

Certificate of Commendation of the highest prize in the Kanto Electricity Use Rationalization Committee Awards

These initiatives were also presented at external training seminars. The Utsunomiya Plant is also a member of the Tochigi Prefecture Electricity Use Rationalization Committee, engaging in the activities to reduce environmental load not only within the plant but broadly for the local community.

Environment Communication Report

Practice Report Education program for energy conservation at elementary schools

P.T. Kubota Indonesia holds an educational program on energy conservation at elementary schools near its plant. The program was held in November 2016 at two elementary schools, in which a total of 409 students participated. The company's 12 employees in the human resources and administration departments visited the schools and talked about how to save energy or water at home, after actually changing the schools' about 100 light bulbs into LED bulbs. At the end of the program, the staff distributed posters calling for the use of LED bulbs and energy conservation to the children and asked them to use LED bulbs and put up the poster at their home.

With the replacement with LED bulbs, the classrooms became brighter and cooler because there is no longer the heat from incandescent bulbs. We believe that the program was a good opportunity for the children to learn about energy conservation through hands-on experience.

We will continue to provide this program at other schools near the plant.

Educational program on energy conservation

School staff and Kubota employees

Practice Report CSR and environmental communication for stakeholders

SIAM KUBOTA Corporation Co., Ltd. (Thailand) believes that environmental communication with its stakeholders is important, and thus has its staff members visit each stakeholder and deliver the company's CSR and environmental information leaflets. In April 2016, our representatives visited Nava Nakorn Public Co., Ltd., the owner of the Nava Nakorn Industrial Estate in which our plant is located, and each stakeholder in the neighboring municipalities of Ayutthaya Province and Pathum Thani Province. We also distributed the leaflets in which the reports on the CSR and environmental activities promoted at our plant and the data regarding environmental load are provided. These visits enabled us to fulfill our accountability to our stakeholders and listen to their various opinions.

In 2017, we will promote provision of environmental information for the local communities. We will make continuous efforts to build better relationships with our stakeholders and fulfill our corporate responsibility.

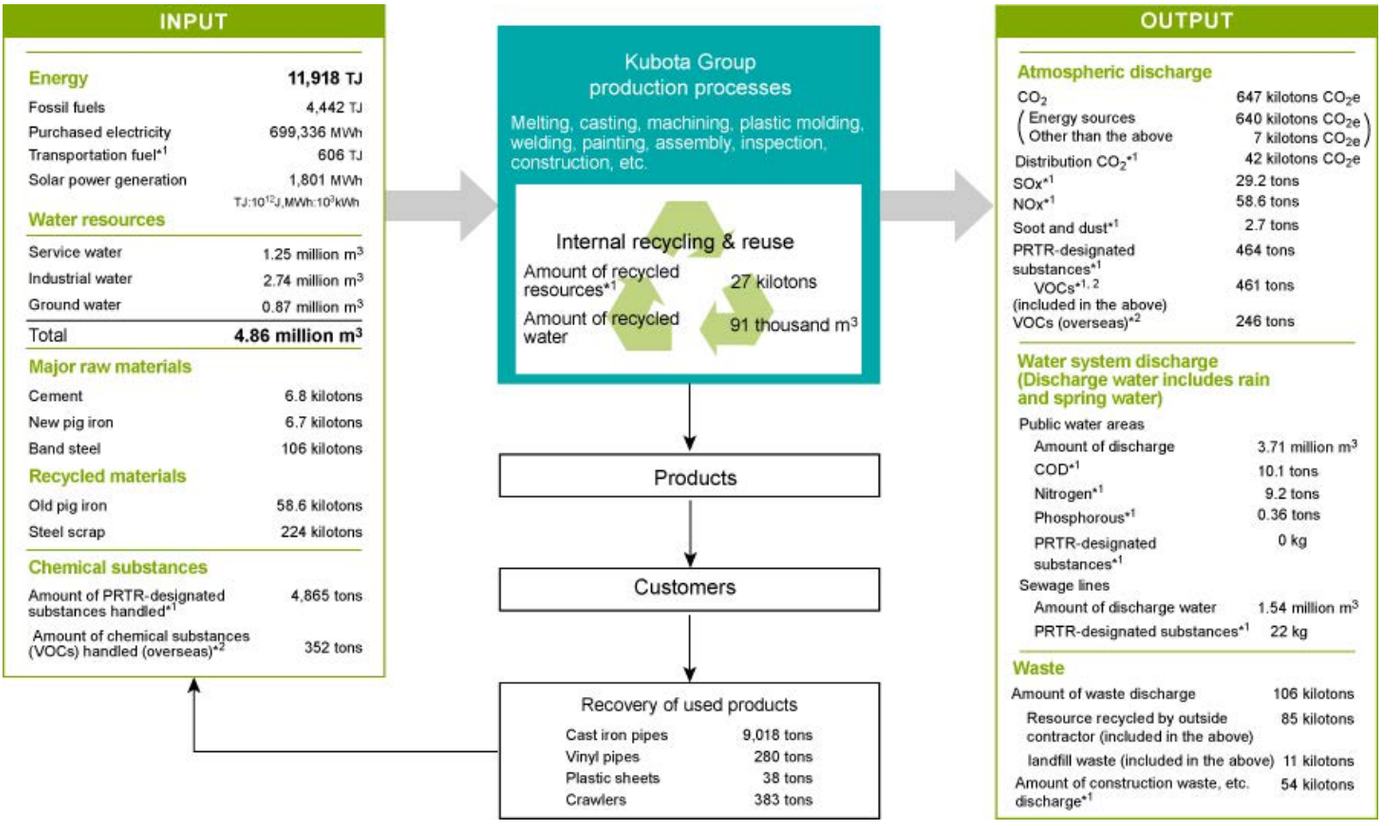
Visiting stakeholders

Environmental Data

Overview of the Kubota Group's Environmental Load

This is an overall summary of the Kubota Group's environmental load from its diverse business activities in Japan and overseas in RY2016. We will continue to assess and analyze environmental load and engage in initiatives to reduce it.

Overview of the Kubota Group's Environmental Load



*1 Data for Japan

*2 VOCs comprise the six VOCs that are most prevalent in emissions from the Kubota Group: xylene, toluene, ethylbenzene, styrene, 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene.

Trends in Major Environmental Indicators

Trends in Major Environmental Indicators in the Last Five Years Listed on "Overview of the Kubota Group's Environmental Load"

INPUT

Environmental indicators		Unit	RY2012	RY2013	RY2014	RY2015	RY2016
Energy	Total energy input	TJ	11,320	12,150	12,611	12,080	11,918
	Fossil fuel	TJ	4,370	4,660	5,021	4,576	4,442
	Purchased electricity	MWh	642,400	690,600	712,674	698,632	699,336
	Transportation fuel (Japan)	TJ	641	695	591	643	606
	Solar power generation	MWh	69	67	210	1,285	1,801
Water resources	Water consumption	million m³	4.50	4.68	4.86	5.03	4.86
	Overseas included in the above	million m³	0.83	0.89	1.04	1.21	1.20
	Service water	million m³	1.03	1.10	1.22	1.19	1.25
	Water for industrial use	million m³	2.46	2.56	2.64	2.87	2.74
	Groundwater	million m³	1.01	1.02	1.00	0.97	0.87
Chemical substances	Amount of PRTR-designated substances handled (Japan)	tons	5,740	5,912	6,725	5,368	4,865
	Amount of chemical substances (VOCs) handled (Overseas)*1	tons	329	354	354	335	352

OUTPUT

Environmental indicators			Unit	RY2012	RY2013	RY2014	RY2015	RY2016
Atmospheric discharge	CO_2 emissions		kilotons CO_{2e}	585	663	715	673	647
		Overseas included in the above	kilotons CO_{2e}	135	172	181	167	173
		Energy sources	kilotons CO_{2e}	579	657	707	665	640
		Other than the above	kilotons CO_{2e}	6	6	8	8	7
	Distribution CO2 (Japan)		kilotons CO_{2e}	44	48	41	44	42
	SOx emissions (Japan)*2,3		tons	4.1	16.2	19.8	17.3	29.2
	NOx emissions (Japan)*3		tons	58.0	64.7	70.2	60.6	58.6
	Soot and dust emissions (Japan)*3		tons	3.5	3.4	2.9	2.9	2.7
	Amount of PRTR-designated substances released (Japan)		tons	422	462	543	544	464
	VOC emission*1		tons	594	646	758	774	707
		Overseas included in the above*1	tons	175	186	219	235	246
Water system discharge	Public water areas	Wastewater discharge	million m³	3.48	3.82	3.74	3.82	3.71
		COD(Japan)*4	tons	10.4	10.6	9.8	9.9	10.1
		Nitrogen discharge(Japan)*4	tons	9.7	8.9	9.0	9.6	9.2
		Phosphorous discharge(Japan)*4	tons	0.30	0.32	0.37	0.35	0.36
		Amount of PRTR-designated substances released (Japan)	kg	9.0	8.4	0	0	0
	Sewage lines	Wastewater discharge	million m³	1.34	1.23	1.52	1.57	1.54
		Trend in amount of PRTR-designated substances released (Japan)	kg	20	21	34	23	22
Waste	Amount of waste discharge		kilotons	90	98	114	116	106
		Overseas included in the above	kilotons	25	33	38	40	39
		Resources recycled by outside contractor	kilotons	69	76	92	93	85
		Landfill waste	kilotons	7	13	10	12	11
	Amount of construction waste, etc. discharge (Japan)		kilotons	32	24	36	44	54

*1 VOCs comprise the six VOCs that are most prevalent in emissions from the Kubota Group: xylene, toluene, ethylbenzene, styrene, 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene.

*2 Previously, the sulfur contained in the slag and particulate matter was included in the calculation of SOx emissions emitted from the fuel combustion in casting plants. However, from RY2014, it has been excluded from calculations as it is not emitted into the atmosphere.

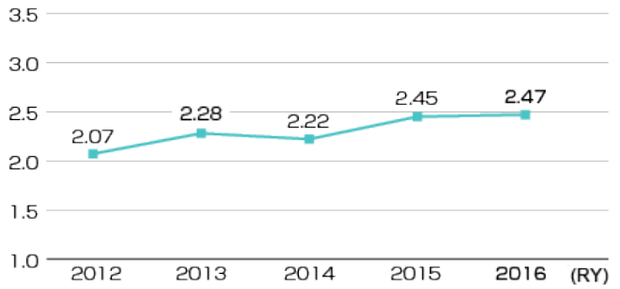
*3 Starting from RY2016, calculation of the amount of atmospheric discharge (SOx, NOx, soot and dust) targets only the soot and smoke generating facilities defined in the Air Pollution Control Act. Accordingly, the figures for RY2012 through RY2015 are modified.

*4 Data for total discharge from business sites subject to total emission control.

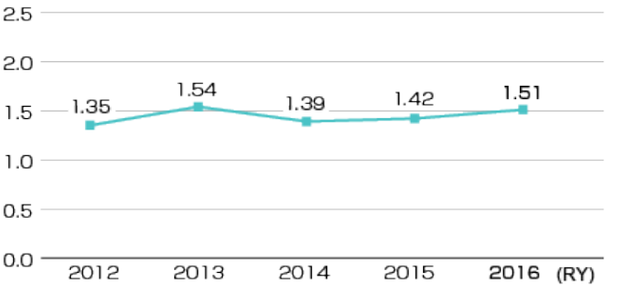
Eco-efficiency

Eco-efficiency was improved in three categories: CO_2, waste and VOC. These improvements in figures mean that the sales per unit of environmental load have increased, which indicates higher eco-efficiency.

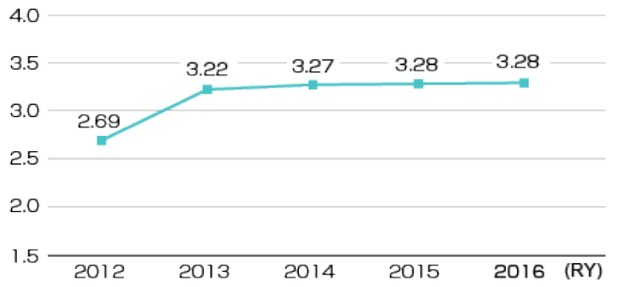
CO_2 Eco-efficiency*1



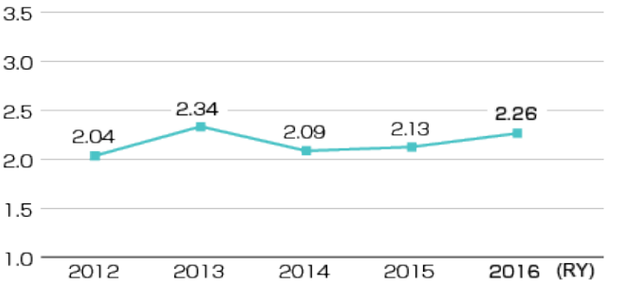
Waste Eco-efficiency*2



Water Eco-efficiency*3



VOC Eco-efficiency*4



*1 CO_2 Eco-efficiency = Consolidated net sales (million yen)/ CO_2 emissions (tons CO_{2e})

*2 Waste Eco-efficiency = Consolidated net sales (million yen)/ Waste discharge (tons)/10

*3 Water Eco-efficiency = Consolidated net sales(million yen)/ Water consumption (m^3) × 10

*4 VOC Eco-efficiency = Consolidated net sales(million yen)/ VOC emissions (kg)

Calculation Results of PRTR Designated Substances

RY2016 Results of PRTR Reporting (Japan)

Number specified in Cabinet Order	Chemical substance	Releases				Transfers	
		Atmosphere	Public water areas	Soil	On-site landfills	Sewerage	Transfers to off-site
1	Zinc compounds (water-soluble)	0.0	0.0	0.0	0.0	22	757
51	2-ethylhexanoic acid	48	0.0	0.0	0.0	0.0	85
53	Ethylbenzene	105,337	0.0	0.0	0.0	0.0	21,444
71	Ferric chloride	0.0	0.0	0.0	0.0	0.0	0.0
80	Xylene	185,119	0.0	0.0	0.0	0.0	33,176
87	Chromium and chromium (III) compounds	0.0	0.0	0.0	0.0	0.0	1,875
132	Cobalt and its compounds	0.0	0.0	0.0	0.0	0.0	3.1
185	Dichloropentafluoropropane; HCFC-225	1,181	0.0	0.0	0.0	0.0	0.0
239	Organic tin compounds	0.0	0.0	0.0	0.0	0.0	15
240	Styrene	28,316	0.0	0.0	0.0	0.0	0.0
243	Dioxins	0.029	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	16,005	0.0	0.0	0.0	0.0	4,526
297	1, 3, 5-trimethylbenzene	3,291	0.0	0.0	0.0	0.0	721
300	Toluene	123,497	0.0	0.0	0.0	0.0	16,731
302	Naphthalene	1,052	0.0	0.0	0.0	0.0	0.0
305	Lead compounds	12	0.0	0.0	0.0	0.0	8,099
308	Nickel	0.13	0.0	0.0	0.0	0.0	451
349	Phenol	0.0	0.0	0.0	0.0	0.0	0.0
352	Diallyl phthalate	104	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	143
400	Benzene	2.0	0.0	0.0	0.0	0.0	0.0
405	Boron compounds	0.0	0.0	0.0	0.0	0.0	1,446
412	Manganese and its compounds	0.021	0.0	0.0	0.0	0.0	82,782
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		**463,964**	**0.0**	**0.0**	**0.0**	**22**	**172,255**

Scope: Total of substances with annual handling volume of one ton or more (0.5 ton or more for Specific Class 1 Designations) at each business site.
Unit: kg/year (Dioxins: mg-TEQ/year)

Volatile Organic Compounds (VOCs)

Six VOCs substances targeted for reduction in Medium-Term Environmental Conservation Targets 2020.

Environmental Accounting

The Kubota Group performs environmental accounting and publicizes data about the cost of investments in environmental conservation and the economic and environmental benefits of these investments.

Environmental conservation costs

(Yen in millions)

Classifications		Main activities	The nine months ended December 31, 2015		The year ended December 31, 2016	
			Investment	Expenses	Investment	Expenses
Within the business area cost			1,204	1,524	1,795	2,610
	Local environmental conservation cost	Prevention of air and water pollution, soil contamination, noise, vibration, etc.	179	438	505	399
	Global environmental conservation cost	Prevention of climate change	1,015	420	1,282	854
	Resource recycling cost	Minimizing waste production, reducing quantity of waste, and recycling	10	666	9	1,357
Upstream and downstream costs		Collection of used products and commercialization of recycled products	0	25	0	35
Management activities cost		Environmental management personnel, ISO maintenance and implementation, environmental information dissemination	3.8	1,083	3.5	1,552
R&D cost		R&D for reducing of product environmental load and developing environment conservation equipment	181	4,830	540	6,757
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	74	0	87
Total			1,389	7,537	2,339	11,042

Total capital investment (including land) for the corresponding period (consolidated data)	65,400
Total R&D costs for the corresponding period	43,000

Environmental Conservation Effects

Effects	Items	The nine months ended December 31, 2015	The year ended December 31, 2016
Environmental effect related to resources input into business activities	Energy consumption (Except for transportation fuel) [units of heat; in terajoules (TJ)]	5,988	7,660
	Water consumption (million m^3)	2.92	3.66
Environmental effect related to waste or environmental impact originating from business activities	CO_2 emissions (Energy related) (kilotons CO_2e)	380	468
	SOx emissions (tons)	5.4	29.2
	NOx emissions (tons)	44.8	58.6
	Soot and dust emissions (tons)	2.2	2.7
	Releases and transfers of PRTR-designated substances (tons)	710	636
	Waste discharge (kilotons)	59.6	67.1
	Waste to landfills (kilotons)	1.8	2.1

Economic effects

(Yen in millions)

Classifications	Details	Annual effects of the years ended December 31, 2016
Energy conservation measure	Use alternative fuels for production facilities and switch to more efficient lighting and air handling systems	360
Zero-emissions measures	Reduce the amount of industrial waste; promote resource recycling	162
	Sales of valuable resources	813
Total		1,335

<Environmental accounting principles>

1) The nine months ended December 31, 2015 means April 2015 to December 2015, and the year ended December 2016 means 12 months from January 2016 to December 2016.

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.

Status of Environmental Management System Certification Acquisition

The Kubota Group has achieved ISO 14001 certification at all of its production sites in Japan. Kubota is currently introducing activities to expand ISO 14001 certification approval at its production sites overseas; one Saudi Arabia site acquired the certification in 2016 and one French site in 2017. The certificated sites are now preparing for the transition to certification according to the standard's revision 2015.

ISO 14001 Certification

Kubota Corporation in Japan

No	Name	Other Organizations and Subsidiaries Included	Main Business	Inspecting/Certifying Organization	Date of Certification
1	Tsukuba Plant	▪ Eastern Main Parts Center ▪ Eastern Technical Training Center Tsukuba Service G ▪ Kanto Kubota Precision Machinery Co., Ltd.	Engines, tractors, etc.	LRQA	November 28, 1997
2	Keiyo Plant	▪ Distribution Center	Ductile iron pipe, spiral welded steel pipe	LRQA	July 16, 1998
3	Ryugasaki Plant	▪ KUBOTA Vending Service Co., Ltd. Ryugasaki Plant ▪ KUBOTA Kanto Vender Center Inc. Ryugasaki Plant	Vending machines	DNV	November 13, 1998
4	Hanshin Plant	▪ Marushima Factory	Ductile iron pipe, spiral welded steel pipe, rolling-mill roll, TXAX	LRQA	March 5, 1999
5	Kyuhoji Business Center	▪ Kubota Environmental Service Co., Ltd. ▪ KUBOTA Membrane Corp. ▪ KUBOTA Keiso Corp.	Measuring instruments, measuring systems, rice-milling products, waste shredder systems, submerged membranes, and mold temperature controllers	DNV	March 19, 1999

No	Name	Other Organizations and Subsidiaries Included	Main Business	Inspecting/Certifying Organization	Date of Certification
6	Hirakata Plant		Valves, cast steel, new ceramic materials, and construction machinery	LRQA	September 17, 1999
7	Okajima Business Center		Industrial cast iron products, drainage pipes, and other cast iron products	JICQA	December 22, 1999
8	Sakai Plant/Sakai Rinkai Plant manufacturing department		Engines, tractors, small-size construction machinery, etc.	LRQA	March 10, 2000
9	Shiga Plant		FRP products	JUSE	May 18, 2000
10	Water Engineering & Solution Business Unit	▪ Shin-yodogawa Environmental Plant Center	Sewage and sludge water purification, wastewater treatment facilities	ICJ	July 14, 2000
11	Pumps Business Unit	▪ KUBOTA Kiko Ltd.	Sewage and water purification plants, pumps and pump stations	LRQA	July 14, 2000
12	Utsunomiya Plant	▪ Eastern Technical Training Center Utsunomiya Service G	Rice transplanters and combine harvesters	LRQA	December 8, 2000

Kubota Group: Companies in Japan

No	Name	Other Organizations and Subsidiaries Included	Main Business	Inspecting/Certifying Organization	Date of Certification
1	Nippon Plastic Industry Co., Ltd.	▪ Head office and plant, Mino Plant	Plastic pipes, plastic sheets, etc.	JSA	October 27, 2000
2	Kubota Construction Co., Ltd.		Design and construction of civil engineering structures and buildings	JQA	December 22, 2000
3	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
4	Kubota ChemiX Co., Ltd.	▪ Tochigi Plant ▪ Sakai Plant ▪ Odawara Plant ▪ Kyushu KUBOTA Chemical Co., Ltd.	Plastic pipes and couplings	JUSE	March 27, 2003 (integrated authentication in 2011)
5	KUBOTA Air Conditioner Co., Ltd.	▪ Tochigi Plant	Central air conditioning systems	JQA	August 27, 2004
6	KUBOTA Precision Machinery Co., Ltd.		Hydraulic valves, hydraulic cylinders, transmissions, hydraulic pumps, hydraulic motors, etc.	LRQA	March 17, 2007
7	KUBOTA KASUI Corporation		Design, construction and maintenance management of environmental conservation facilities	BCJ	February 1, 2010
8	Kansouken Inc.		Package software supporting water business	JCQA	April 14, 2014

Kubota Group: Overseas companies

No	Name	Main Business	Inspecting/Certifying Organization	Date of Certification
1	SIAM KUBOTA Corporation Co.,Ltd.［Headquarters］(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 Materials Canada Corporation (Canada)	Cast steel products, TXAX	SGS (U.S.)	June 15, 2006
4	P.T. Metec Semarang (Indonesia)	Vending machines	TÜV	March 16, 2011
5	KUBOTA Precision Machinery (Thailand) Co.,Ltd. (Thailand)	Equipment for tractors	LRQA	August 5, 2015
6	Kubota Manufacturing of America Corporation (U.S.) (including Kubota Industrial Equipment Corporation (U.S.))	Small-sized tractors, mowers, utility vehicles and tractor accessories	BSI	September 20, 2012 (integrated in 2015)
7	SIAM KUBOTA Corporation Co., Ltd.［Amata Nakorn］(Thailand)	Tractors and combine harvesters	BV	September 27, 2012
8	ATEC Instrument and Chemical Co., Ltd. (Vietnam)	Chemical agents for water treatment	BSI	January 18, 2013
9	KUBOTA SANLIAN PUMP (ANHUI) Co., Ltd. (China)	Pumps	CCSCC	May 29, 2013
10	Kubota Agricultural Machinery (SUZHOU) Co., Ltd. (China)	Combine harvesters, rice transplanters and tractors	SGS	November 13, 2013
11	Kubota Construction Machinery (WUXI) Co., Ltd.	Construction machinery	CQC	December 11, 2014
12	SIAM KUBOTA Metal Technology Co., Ltd. (Thailand)	Cast iron products for engines and tractors	BV	December 19, 2014
13	Kubota Engine (WUXI) Co ., Ltd. (China)	Diesel engines	SGS	March 22, 2015
14	KUBOTA Engine(Thailand) Co., Ltd. (Thailand)	Diesel engines	LRQA	July 3, 2015
15	Kubota Saudi Arabia Company, LLC (Saudi Arabia)	Cast steel products	TÜV	September 30, 2016
16	Kubota Farm Machinery Europe S.A.S (France)	Tractors	BV (France)	February 20, 2017

LRQA: Lloyd's Register Quality Assurance Limited (U.K.)
DNV: DNV Certification B.V. (Netherlands)
JUSE: Union of Japanese Scientists and Engineers ISO Center
JICQA: JIC Quality Assurance Ltd. (Japan)
JSA: Japanese Standards Association
JQA: Japan Quality Assurance Organization
MSA: Management System Assessment Center (Japan)
BCJ: The Building Center of Japan
JCQA: Japan Chemical Quality Assurance Ltd

MASCI: Management System Certification Institute (Thailand)
SGS (U.S.): Systems & Services Certification, a Division of SGS North America Inc. (U.S.)
TÜV: TÜV Rheinland Cert GmbH (Germany)
SGS: SGS United Kingdom Limited (U.K.)
BSI: BSI Assurance UK Limited (U.K.)
BV: Bureau Veritas Certification Holding SAS - UK Branch (U.K.)
CCSCC: China Classification Society Certification Company (China)
CQC: China Quality Certification Centre (China)
BV(France): Bureau Veritas Certification France (France)

EMAS certification

Kubota Group: Overseas companies

No	Name	Main Business	Inspecting/Certifying Organization	Date of Certification
1	Kubota Baumaschinen GmbH (Germany)	Construction machinery	IHK	January 3, 2013

IHK: Industrie- und Handelskammer fur die Pfalz (Germany)

Calculation Standards of Environmental Performance Indicators

Period and Organizations Covered by Environmental Data

RY	Period		Organizations covered (No. of companies)			
	Data in Japan	Overseas data	Consolidated subsidiaries*3			Affiliated companies accounted for under the equity method*4
			Japan	Overseas	Total	
2012	April 2012 to March 2013	January 2012 to December 2012	62	95	157	—
2013	April 2013 to March 2014	January 2013 to December 2013	61	101	162	—
2014	April 2014 to March 2015	January 2014 to December 2014	53	103	156	12
2015	April 2015 to March 2016*1	January 2015 to December 2015*1	51	102	153	13
2016	January 2016 to December 2016	January 2016 to December 2016*2	47	125	172	12

*1 Although the accounting period of RY2015 is nine months (April 2015 to December 2015) due to the change of the account closing time, the period for the environmental data is set to be a year.
Consolidated net sales used to calculate the environmental load per unit of consolidated net sales (CO_2 emissions, energy use, CO_2 emissions during distribution, amount of waste discharged, water consumption, VOC emissions, amount of PRTR-designated substances released and transferred) for RY 2015 are the total consolidated sales from April 2015 to March 2016.

*2 Of the overseas consolidated subsidiaries, for Great Plains Manufacturing, Inc. (GP), which became a consolidated subsidiary in July 2016, the period of its environmental data is six months (July 2016 to December 2016), and the data except for its four major production sites (account for over 80% of sales of GP Group in RY2016) and four major non-production sites (accounting for over 90% of the employees of non-production sites of GP Group in RY2015) is estimated.
Data of the amount of chemical substances (VOC) handled and VOC emissions are excluded from the calculation.

*3 The coverage of consolidated subsidiaries is 100% for each year.

*4 Starting from RY2014, part of the affiliated companies accounted for under the equity method are covered by the data.

Calculation Methods of Environmental Performance Indicators

Energy and CO_2-related

Indicator (unit)	Calculation method
Energy use (J)	■ Energy use = Amount of purchased electricity consumed at business sites × per-unit heat value + Σ [amount of each fuel consumed × per-unit heat value of each fuel] ■ Per-unit heat value is determined in accordance with the Enforcement Regulation for the Act on the Rational Use of Energy, Japan.
CO_2 emissions (kilotons CO_2e)	■ CO_2emissions = CO_2 emissions from energy sources + non-energy source greenhouse gas emissions ■ CO_2 emissions from energy sources = Amount of purchased electricity consumed at business sites × CO_2 emission coefficient + Σ [amount of each fuel consumed at business sites × per-unit heat value of each fuel × CO_2 emission coefficient of each fuel] ■ Non-energy source greenhouse gas emissions = CO_2 emissions from non-energy sources + non-CO_2 greenhouse gas emissions ■ Per-unit heat value is determined in accordance with the Enforcement Regulation for the Act on the Rational Use of Energy, Japan. ■ CO_2 emission coefficients [RY1990] Based on the Report on Survey of Carbon Dioxide Emissions (Japan's Environment Agency 1992) and the Guideline for Measures to prevent Global Warming (Japan's Environment Agency 1993) [RY2011 to RY2015] <Fuel> Based on the Manual for Calculation and Report of Greenhouse Gas Emissions (Japan's Ministry of the Environment and Ministry of Economy, Trade and Industry) <Electricity> Data for Japan are effective emission coefficients for each electricity utility, and overseas data are according to the GHG emissions from purchased electricity (GHG Protocol). [RY2016] <Fuel> Based on the Manual for Calculation and Report of Greenhouse Gas Emissions (Japan's Ministry of the Environment and Ministry of Economy, Trade and Industry) <Electricity> Data for Japan are effective emission coefficients for each electricity utility, and overseas data are according to CO_2 Emissions from Fuel Combustion - 2016 edition (IEA) and The Emissions & Generation Resource Integrated Database (eGRID) (EPA). ■ The method for calculating non-energy source greenhouse gas emissions is based on the Manual for Calculation and Report of Greenhouse Gas Emissions (by Japan's Ministry of the Environment and Ministry of Economy, Trade and Industry) ■ The amount of CO_2 emissions in RY1990 is solely the amount of CO_2 emissions from energy sources at Kubota production sites.
Freight traffic (ton-km)	■ Freight traffic = Σ [Freight transportation amount (tons) × distance traveled (km)] ■ Freight traffic refers to the volume of products and industrial waste transported during domestic distribution
Fuel consumption during transportation (J)	■ Fuel consumption during transportation = Σ [Freight traffic by truck × Fuel consumption per ton-kilometer × per-unit heat value]+Σ [Freight traffic by rail and water × energy use (heat value) per unit ton-kilometer] ■ Calculation method is from the Manual to Support Merchants regarding Revisions to Energy Conservation Laws , 3rd Edition (April 2006, Japan's Energy Conservation Center of the Agency of Natural Resources and Energy, Japanese Ministry of Economy, Trade and Industry)

Indicator (unit)	Calculation method
CO_2 emissions during distribution (kilotons CO_2e)	■ CO_2 emissions during distribution = Σ [Fuel consumption for freight shipment by truck × CO_2 emission per ton-kilometer by fuel of transportation] + Σ [Fuel consumption for freight shipment by rail and water × CO_2 emission per ton-kilometer by means of transportation] ■ Calculation method is based on the ton-kilometer method stipulated in the Manual for Calculation and Report of Greenhouse gas Emission (Japan's Ministry of the Environment and Ministry of Economy, Trade and Industry)
Total energy input (J)	■ Total energy input = Energy use + Fuel consumption during transportation
Scope 3 emissions (kilotons CO_2e)	■ The calculation method is based on the Basic Guidelines regarding the Calculation of Greenhouse Gas Emissions throughout the Supply Chain (Japan's Ministry of the Environment and Ministry of Economy, Trade and Industry) and the Emissions per Unit Database for the Purpose of Calculating the Greenhouse Gas and Other Emissions of Organizations throughout the Supply Chain
Resource extraction, transportation and manufacturing related to purchased goods, etc.	■ Σ [Production volume × CO_2 emissions per unit] ■ Products: Agricultural machinery (tractors, rice transplanters, combine harvesters), construction machinery (compact excavators, etc.), and ductile iron pipe ■ Production volume: Number of units shipped for agricultural and construction machinery, and production weight for ductile iron pipes ■ CO_2 emissions per unit: estimated from the CO_2 emissions per unit of production of the product
Extraction and production of capital goods such as equipment	■ Equipment investment amount × CO_2 emissions per unit
Extraction, production and transportation for fuels for generation of purchased electricity	■ Purchased electricity consumed at business sites × CO_2 emissions per unit
Disposal of wastes discharged from business sites	■ Σ [Amount of waste discharge by type × CO_2 emissions per unit]
Employee business travels	■ Σ [Transportation expenses paid by method of transport × CO_2 emissions per unit] ■ Transportation expenses paid by method of transport are for airline tickets and railway tickets ■ For a part of the overseas subsidiaries (68 sites), estimate by multiplying the net sales of the subsidiaries in each of the regions and countries mentioned by the ratio of transportation expenses for each method of travel included in the net sales of major subsidiaries in Europe, America, Asia and China.
Employee commuting	■ Σ [Transportation expenses paid by method of transport × CO_2 emissions per unit] ■ The amount of transportation expenses is for the amount paid for Kubota employees' railway tickets and car travel
Transportation of products and waste	■ Same as the CO_2 emissions during distribution
Processing of intermediate products	■ Σ [Sales volume of intermediate products × CO_2 emissions per unit] ■ Intermediate products: engines (external sales only) ■ CO_2 emissions per unit: CO_2 emissions per unit at Kubota Group's processing plants
Use of products sold	■ Σ [No. of products sold × CO_2 emissions per unit] ■ Products: agricultural machinery (tractors, rice transplanters, combine harvesters), construction machinery (compact excavators, etc.) ■ CO_2 emissions per unit: Fuel consumption per hour × Annual hours of use × Years of service life × per-unit heat value of each fuel × CO_2 emission coefficient of each fuel (calculated by assuming the fuel consumption per hour, annual hours of use, and years of service life for each product)

Indicator (unit)	Calculation method
End-of-life transportation and treatment of sold products	■ Σ [No. of products shipped × CO_2 emissions per unit] ■ Products: Agricultural machinery (tractors, rice transplanters, combine harvesters) and construction machinery (compact excavators, etc.) ■ CO_2 emissions per unit: estimated CO_2 emissions per unit of product

Waste-related

Indicator (unit)	Calculation method
Amount of waste, etc. generated (kilotons)	■ Amount of waste, etc. generated = sales of valuable resources + amount of waste discharge
Amount of waste discharge (kilotons)	■ Amount of waste discharge = Amount of industrial waste discharge + Amount of general waste discharged from business activities
Amount of resource recycling (kilotons) Amount of volume reduction (kilotons) Amount of landfill disposal (kilotons)	■ Amount of resource recycling = Amount of waste directly recycled + Amount of resource recycling after external intermediate treatment ■ Amount of volume reduction = Volume of external intermediate treatment - Amount of resource recycling after external intermediate treatment - Final landfill following external intermediate treatment ■ Amount of landfill disposal = Direct landfill disposal+ Final landfill disposal following external intermediate treatment ■ Amount of resource recycling after external intermediate treatment includes heat recovery (from RY2013) ■ Amount of resource recycling after external intermediate treatment, amount of final landfill disposal, amount of volume reduction are calculated based on the results of surveys at the contractor.
Recycling ratio (%)	■ Recycling ratio = (Sales amount of valuable resources + external recycling amount) ÷ (Sales amount of valuable resources + external recycling amount + amount of landfill disposal) × 100 ■ External recycling amount includes heat recovery (from RY2013)
Amount of construction waste, etc. discharged (kilotons)	■ Amount of construction waste, etc. discharged = Amount of construction waste discharged + sales amount of valuable resources generated from construction ■ Targeting construction work in Japan ■ Amount of construction waste discharged includes construction waste other than specific construction materials ■ Sales amount of valuable resources covers directly contracted companies that purchase valuable materials from the Kubota Group
Amount of construction waste,etc.discharged Recycling ratio (%) Recycling and reduction ratio (%)	■ In RY2016, a new calculation method was adopted in which the reduction volume is calculated in accordance with the Promotion Plan for Recycling of Construction Waste 2014 (Ministry of Land, Infrastructure, Transport and Tourism) and the recycling and reduction ratio is determined. [RY2012 to 2015] Recycling ratio = {Sales amount of valuable resources + resource recycling + volume reduction (heat recovery)} ÷ amount of construction waste, etc. discharged × 100 [RY2016] Recycling and reduction ratio = {Sales amount of valuable resources + resource recycling (including heat recovery) + volume of reduction} ÷ amount of construction waste, etc. discharged × 100

Water-related

Indicator (unit)	Calculation method
Water consumption (m^3)	■ Water consumption = Service water consumption + industrial water consumption + groundwater consumption
Wastewater discharge (m^3)	■ Wastewater discharge = Amount of wastewater discharge to public water areas + amount of discharge to sewage lines ■ Wastewater discharge includes rain and spring water
Amount of recycled water (m^3)	■ Amount of water purified in on-site effluent treatment facilities and recycled (excluding the circulating cooling water used)
COD(tons) Nitrogen discharge (tons) Phosphorus discharge (tons)	■ COD = COD per unit discharge amount × wastewater discharge to public water areas ■ Nitrogen discharge = nitrogen concentration × wastewater discharge to public water areas ■ Phosphorous discharge = Phosphorous concentration × wastewater discharge to public water areas ■ Targeting business sites subject to total emission control in Japan

Chemical substance-related

Indicator (unit)	Calculation method
Amount of PRTR-designated substances handled (tons)	■ Total amount of chemical substances handled at Japanese sites, which are 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 of PRTR-designated substances released and transferred (tons)	■ Total release and transfer amount of the chemical substances which are designated as Class I under the PRTR Law at Japanese sites 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). ■ 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 Japan's Ministry of the Environment and the Ministry of Economy, Trade and Industry, and Manual for PRTR Release Estimation Methods in the Steel Industry Ver. 13 (March 2014) of the Japan Iron and Steel Federation.
Amount of chemical substances (VOC) handled (tons)	■ Total amount handled at overseas sites of the six substances of xylene; toluene; ethylbenzene; styrene; 1, 2, 4-trimethylbenzene; 1, 3, 5-trimethylbenzene that are at each site handled in amounts of one ton or more per year
VOC emissions (tons)	■ The total emissions of the six substances of xylene; toluene; ethylbenzene; styrene; 1, 2, 4-trimethylbenzene; 1, 3, 5-trimethylbenzene that are at each site handled in amounts of one ton or more per year
SOx emissions (tons) NOx emissions (tons) Soot and dust emissions (tons)	■ SOx emissions = Amount of fuel consumed (kg) × sulfur content in the fuel × (1 - desulphurization efficiency) × 64/32 or SOx emissions = {(amount of coke consumed × sulfur content in coke) - (amount of molten metal × sulfur content in molten metal) - (volume of slug, dust, etc. × sulfur content in slug, dust, etc.)} × 64/32 or SOx emissions = SOx concentration × amount of gas emitted per hour × annual operation hours of the relevant facility ■ NOx emissions = NOx concentration × amount of gas emitted per hour × annual operation hours of the relevant facility ■ Soot and dust emissions = soot and dust concentration × amount of gas emitted per hour × annual operation hours of the relevant facility ■ Targeting the smoke and soot generating facilities at business sites in Japan as defined by the Air Pollution Control Law

Product-related

Indicator (unit)	Calculation method
Sales ratio of Eco-Products (%)	■ Sales ratio of Eco-Products = Sales of Eco-Products/sales of products (excluding construction work, services, software, parts, and accessories)× 100
Usage ratio of recycled materials (%)	■ Usage ratio of recycled materials = Amount of recycled materials input in the melting process ÷ total input volume × 100 ■ Target products: Materials used in the cast metal products and parts manufactured by the Kubota Group (such as ductile iron pipes, fittings, machine cast products (engine crankcase, etc.)) ■ The amount of recycled materials input and the total input amount does not include the indirect materials that are not the constituent materials of casting products and parts.

Third-party Assurance of Environmental Report

Since RY2004, the Kubota Group has received third-party assurance for the purpose of improving the reliability and comprehensiveness of its environmental data.The symbol 🔍 indicates that the information provided has been confirmed by a third party.

Based on the third-party assurance obtained this reporting year, the KUBOTA REPORT 2017 Business and CSR Activities ＜Full Report Version＞ (PDF), received the Environmental Report Assurance and Registration Symbol of the Japanese Association of Assurance Organizations for Sustainability Information (J-SUS)*. This symbol indicates that information provided has been confirmed by a third party and that the reliability of the environmental data presented in the KUBOTA REPORT 2017 Business and CSR Activities ＜Full Report Version＞ (PDF) satisfies the requirements by J-SUS.

Factory visit

Odawara Plant, Kubota ChemiX Co., Ltd.

Environmental report assurance and registration symbol

* Japanese version http://www.j-sus.org/
* English version http://www.j-sus.org/english.html
* Chinese version http://www.j-sus.org/chinese.html

KPMG

Independent Assurance Report

To the President and Representative Director of KUBOTA Corporation

We were engaged by KUBOTA Corporation (the "Company") to undertake a limited assurance engagement of the environmental indicators marked with "🔍" for the period from January 1, 2016 to December 31, 2016 (the "Indicators") included in its KUBOTA REPORT 2017 Business and CSR Activities <Full Report version> (PDF) (the "Report") for the fiscal year ended December 31, 2016, and the completeness of material environmental information in the Report.

The Company's Responsibility

The Company is responsible for the preparation of the Indicators in accordance with its own reporting criteria (the "Company's reporting criteria"), as described in the Report, and for including the material environmental information defined in the 'Environmental Reporting Assurance and Registration Criteria' of the Japanese Association of Assurance Organizations for Sustainability Information ("J-SUS") in the Report.

Our Responsibility

Our responsibility is to express a limited assurance conclusion on the Indicators based on the procedures we have performed. We conducted our engagement in accordance with 'International Standard on Assurance Engagements (ISAE) 3000, Assurance Engagements other than Audits or Reviews of Historical Financial Information', 'ISAE 3410, Assurance Engagements on Greenhouse Gas Statements', issued by the International Auditing and Assurance Standards Board, and the 'Practical Guidelines for the Assurance of Sustainability Information' of J-SUS. The limited assurance engagement consisted of making inquiries, primarily of persons responsible for the preparation of information presented in the Report, and applying analytical and other procedures, and the procedures performed vary in nature from, and are less in extent than for, a reasonable assurance engagement. The level of assurance provided is thus not as high as that provided by a reasonable assurance engagement. Our assurance procedures included:

- Interviewing with the Company's responsible personnel to obtain an understanding of its policy for the preparation of the Report and reviewing the Company's reporting criteria.
- Inquiring about the design of the systems and methods used to collect and process the Indicators.
- Performing analytical reviews of the Indicators.
- Examining, on a test basis, evidence supporting the generation, aggregation and reporting of the Indicators in conformity with the Company's reporting criteria, and also recalculating the Indicators.
- Visiting to the Company's subsidiary selected on the basis of a risk analysis.
- Assessing whether or not all the material environmental information defined by J-SUS is included in the Report.
- Evaluating the overall statement in which the Indicators are expressed.

Conclusion

Based on the procedures performed, as described above, nothing has come to our attention that causes us to believe that the Indicators in the Report are not prepared, in all material respects, in accordance with the Company's reporting criteria as described in the Report, and all the material environmental information defined by J-SUS is not included in the Report. .

Our Independence and Quality Control

We have complied with the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which includes independence and other requirements founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior. In accordance with International Standard on Quality Control 1, we maintain a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

KPMG AZSA Sustainability Co., Ltd.

KPMG AZSA Sustainability Co., Ltd.
Osaka, Japan
May 16, 2017