

KITZ Group Principle of Environmental Activities

KITZ Group companies aspire to become operations worthy of society's confidence through the supply of environmentally friendly products and services and promotion of environment-responsive corporate activities.

KITZ Group Companies: Environmental Action Policy

KITZ Group companies shall recognize environmental issues as an essential perspective of corporate management and every employee shall positively participate in the following activities.

1. Development and supply of environmentally friendly products and services
2. Effective use of resources
3. Promotion of reduction, reuse and recycle of waste
4. Prevention of environmental contamination

We aim to promote environment-responsive business operations across our entire group while simultaneously pursuing risk prevention and cost reduction

The KITZ Group has designated “Group-wide promotion of environmentally conscious management” as one measure for strengthening our business foundation to realize our slogan “Evolution to become a fully global company,” which is articulated in the KITZ Global Vision 2020, a Long-term Management Plan. Based on this, we have set three targets of “Enhancement of Environmental Management System,” “Reduction in Environmental Impact” and “Compliance with Environment-Related Laws and Regulations.”

● **Enhancement of Environmental Management System**

We have completed certification for ISO 14001 at all our production plants (seven locations) in Japan and will now expand efforts for obtaining ISO 14001 certification to our overseas bases. We will strive to complete the acquisition of ISO 14001 certification in the near future at all overseas manufacturing bases with the aim of building an environment management system as a truly global company.

● **Reduction in Environmental Impact**

We have set the target of reducing consumption of energy and water used for our business activities and reducing the discharge of carbon dioxide, industrial waste and chemical pollutants from our business operations. We will effectively use finite resources while extensively eliminating waste to reduce environmental impacts in terms of total volume and basic units.

● **Compliance with Environment-Related Laws and Regulations**

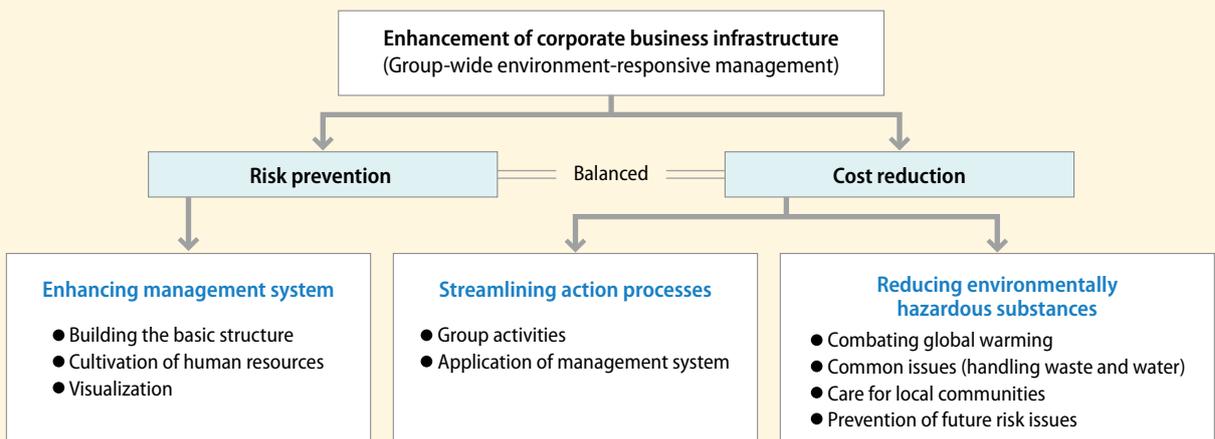
Besides complying with various environment-related laws and regulations for addressing environmental problems amid a tightening of restrictions worldwide, including in Japan, Europe, Asia and the United States, we also engage in activities to eliminate all environmental risk associated with our business activities.

The KITZ Group will work in unison to undertake environment-responsive management to attain these three targets based on its policy of achieving a balance between risk prevention and cost reduction.

Targets of Environmental Issues in Long-Range Management Projections

- 1. Enhancement of Environmental Management System
 - ISO 14001 certification and control of environmental issues for overseas manufacturing operations
- 2. Reduction in Environmental Impact
 - Items to control:
 - CO₂ emissions
 - Industrial waste discharge
 - Water consumption
 - Energy consumption
 - Final disposal of waste
 - Discharge of PRTR target chemicals
- 3. Compliance with Environment-Related Laws and Regulations

Environmental Management Agenda Needed to Accomplish Targets



Environmental Target and Results in FY2014

We introduced “promotion of Group environment-responsive business operations” in the Second Mid-term Management Plan (FY2013 – FY2015) to promote environmental activities.

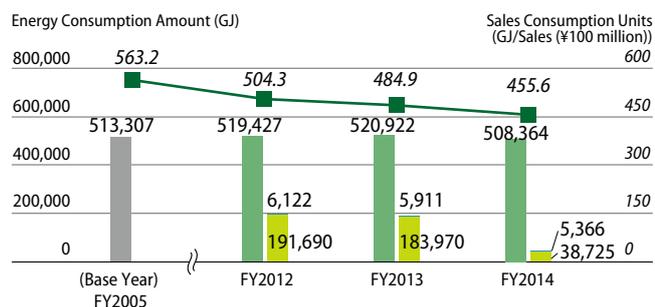
Focused subject	Actions planned	Target for FY2014	Results in FY2014	
1. Strengthening environmental management system				
Enhancement of Environmental Management System	(1) Building the basic structure for group-wide environmental management system	(1) Revice to integrated ISO 14001 (7 domestic bases). (2) Implement environmental results management at overseas production bases (energy, waste materials, others).	(1) Completed the Group review in October 2014. (2) KITZ (Thailand) Ltd. carried out environmental audit.	
2. Establishment of a recycling-oriented society				
Reduction in Environmental Impact	(1) Reducing discharged waste	Sales consumption units 7.27t/¥100 million	7.28t/¥100 million (*)	
	(2) Reducing finally disposed waste	Sales consumption units 0.29t/¥100 million	0.30t/¥100 million (*)	
	(3) Reducing consumed water resource	Sales consumption units 454.98 m ³ /¥100 million	418.90 m ³ /¥100 million (*)	
	3. Reduce hazardous chemical substances			
	(4) Reducing discharged PRTR Class-1 chemicals	Sales consumption units 0.28t/¥100 million	0.24t/¥100 million (*)	
	4. Prevent global warming			
Reduction in Environmental Impact	(5) Reducing energy consumption	Sales consumption units 503.64GJ/¥100 million	474.01GJ/¥100 million (*)	
	(6) Reducing CO ₂ emission	Sales consumption units 58.22t-CO ₂ /¥100 million	55.12t-CO ₂ /¥100 million (*)	
5. Visualization of environmental risk and responses				
Compliance with Environment-Related Laws and Regulations	(1) Legal compliance	(1) Enhanced structure for gathering information about law revisions and made responses.	Responded to revised Water Quality Pollution Control Act. Responded to revised fluorocarbons law	
	(2) PCB	(2) Disposal of PCB waste materials at the KITZ Group in Japan	Completed disposal of 21,300 l of low-concentration PCB.	

(*) KITZ and domestic group companies (except for sales offices)

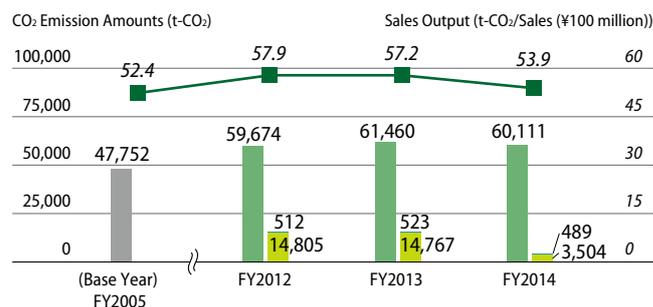
Environmental Data

- Manufacturers (except for sales offices)
- Service companies (data compiled from FY2008)
- Sales offices of manufacturers (data compiled from FY2009)
- Consumption units at manufacturers (except for sales offices)

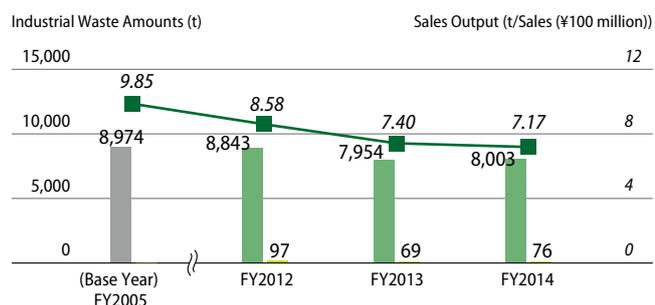
Energy Consumption (GJ)



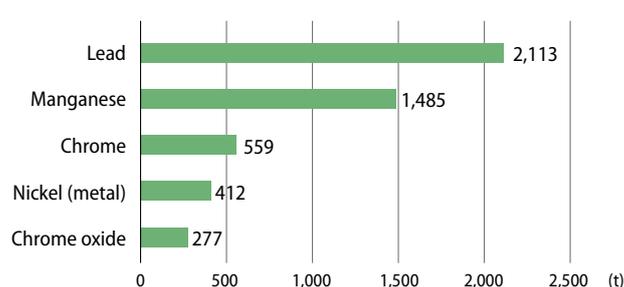
CO₂ Emission (ton-CO₂)



Discharge of Industrial Waste (ton)



Consumption of PRTR Target Chemicals (tons of top 5 items)



* PRTR target substances, for which annual handling amounts are less than 1t and content is less than 1%, are also compiled.

Overall Image of Environmental Impact

INPUT in FY2014

Major Energies

	Manufacturers	(Sales offices)	Service companies
● Electricity			
Purchased electric power (1,000 kWh)	96,486	400	4,084
Solar power generation (1,000 kWh)	48		
● City gas (1,000 m ³)	10		256
● Bunker A (kl)	730		66
● LPG (t)	1,944	17	169
● Kerosene (kl)	633	25	32
● Cold and hot water (GJ)	3,026		

Water

	Manufacturers	(Sales offices)	Service companies
● Clean water (1,000 m ³)	138	1	93
● Underground water (1,000 m ³)	252		

Main Raw Materials

	(t)	Manufacturers
● Lead		2,113
● Nickel		411
● Manganese		1,485
● Chrome		559
● Copper		41,019
● Zinc		20,909

Main Auxiliary Materials

	(t)	Manufacturers
● Sand for cores and castings		5,190
● Paint and thinner		198
● Oil solution		321

KITZ GROUP

Development and Design

Procurement

Production

Logistics

Sales

OUTPUT in FY2014

Emission in Air

	Manufacturers	(Sales offices)	Service companies
● CO ₂ (t)	60,111	489	3,504
● Dust (t)	4.3		0.0
● NO _x (t)	4.6		2.7
● SO _x (t)	4.1		

Discharge of Waste

	(t)	Manufacturers	(Sales offices)	Service companies
● Industrial waste		8,003		76
● Non-industrial waste		184	1	143
● Valuable substances		6,015		48
● Final disposal		312		39

Discharge of PRTR

Target Chemicals

	(t)	Manufacturers	(Sales offices)	Service companies
● Air		66		
● Waste		212		
● Public water		0.1		

Environmental Accounting in FY2014

Environmental Conservation Costs

(Thousand of yen)

Category		Main actions	Capital investment	Expenditures
Cost for premises			99,454	387,938
Breakdown	Pollution control	Introduction, purchasing and maintenance of facilities	67,453	108,780
	Global environment protection	Introduction of facilities and equipment	23,475	82,492
	Resource circulation	Reduction, recycling and outsourced disposal of waste	8,525	196,666
Product recycling		Collection and recycling of used goods	0	8,019
Administrative duties		ISO-related works, environmental measurement and disclosure of environmental information	0	66,464
Research and development		Development of lead-free and other environmentally friendly products	0	89,785
Social activities		Promotion of greening activities	0	337
Damaged environment recovery		Purification of underground water	6,000	730
Other costs			0	0
Total			105,454	553,273

Total costs	Costs for environmental conservation	Total operation costs (A)
Total capital investment	2.9% against total operation cost (A)	3,687,433
Total R&D expenditures	4.6% against total operation cost (A)	1,935,935

Environmental Conservation Effects

Category	Numerical targets (Unit)	Results in FY2013	Results in FY2014	FY2014 less FY2013
Effects related with input resources	Consumed total energies (GJ)	704,892	509,809	(195,083)
	Consumed PRTR materials (ton)	4,872	4,876	4
	Consumed clean water (m ³)	346,197	138,703	(207,494)
	Consumed underground water (m ³)	602,742	252,455	(350,288)
Effects related with output waste and pollutants	Greenhouse gas emission (ton-CO ₂)	76,227	60,232	(15,996)
	Discharged or displaced chemicals (ton)	306	278	(28)
	Discharged total waste (ton)	8,393	8,216	(177)

Economic Effects of Environmental Conservation Activities

(Thousands of yen)

Details of effects		Amount
Profits	Earned from recycling waste and used products	415,466
Saved expenditures	Saved by energy saving activities	112,026
	Reduced recycling expenditures	204,808
	Saved by waste reduction	4,530
Total		736,830

Scope of compilation is KITZ Corporation (Head Office, Nagasaki, Ina, Chino), KITZ Metal Works Corporation, KITZ Micro Filter Corporation, KITZ SCT Corporation, Shimizu Alloy Mfg. Co., Ltd. and KITZ Engineering Service Co., Ltd.

Strengthening Overseas Environmental Management

The KITZ Group formulated its “KITZ Global Vision 2020,” a Long-term Management Plan, and places promotion of environment-responsive business operations as a major item for strengthening its business foundations. In the Environmental Mid-term Plan, we set out a target for all 16 production bases in Japan and overseas to acquire ISO 14001 certification. We will continue to make efforts toward the establishment of global environmental management.



Business Offices That Have Acquired Integrated ISO 14001 Certification

Name of business office	
KITZ Corporation Nagasaka Plant	KITZ Micro Filter Corporation (Head office plant and second plant)
KITZ Corporation Ina Plant	KITZ SCT Corporation
KITZ Corporation Chino Plant	Shimizu Alloy Mfg. Co., Ltd.
KITZ Metal Works Corporation	Toyo Valve Co., Ltd. Koshin Sales Office

Status of Acquisition of ISO 14001 Certification (Overseas)

Name of business office	Date of acquisition
(1) KITZ Corporation of Taiwan	November 2000
(2) KITZ (Thailand) Ltd. Bangplee Plant	December 2010
(3) KITZ Corporation of Kunshan	December 2010
(4) KITZ Corporation of Jiangsu Kunshan	April 2011
(5) KITZ (Thailand) Ltd. Amatanakorn Plant	February 2012
(6) KITZ Corporation of Europe, S.A.	May 2012

Calculation Standards (Results in FY2014)

Environmental performance index	Unit	Calculation method			
INPUT	Total energy input amount	GJ	Energy amount consumed in business activities (GJ) : $\Sigma[\text{Each energy annual use amount} \times \text{each unit calorific value}] \times 10^3$ * Source: Energy supply and demand results in 2013 (final) (published on April 14, 2015) Resources and Energy Agency Electricity: 3.6 MJ/kWh : Bunker A: 38.9 MJ/ℓ : Kerosene: 36.5 MJ/ℓ : Light Oil: 38.0 MJ/ℓ : LPG: 50.1 MJ/kg : City Gas: 40.3 MJ/m ³ : Gasoline: 33.4 MJ/ℓ		
		GJ	Amount of cold and hot water, the heat source, accepted from local cooling and heating system for ventilation use at KITZ Head Office Building (Makuhari New City, Chiba)		
	Raw materials input amount	Ton	Annual use amount of raw materials directly used for manufacturing of products (t)		
	Use amount of water	m ³	Annual use amount of clean water and underground water (m ³)		
OUTPUT	Carbon dioxide (CO ₂) emission amounts	Business activities	Ton	CO ₂ emitted from the energy used in business activities (t) * List of calculation method and emission coefficients in the calculation, report and publication system under the Law to Promote Global Warming Countermeasures Electric power (kg-CO ₂ /kWh) : Tokyo Electric Power Company, Incorporated: 0.530 : Kansai Electric Power Company Co., Ltd.: 0.522 : Chubu Electric Power Co., Inc.: 0.513 : Hokkaido Electric Power Co., Inc.: 0.678 : Tohoku Electric Power Co., Inc.: 0.591 : Hokuriku Electric Power Company, Incorporated: 0.630 : Chugoku Electric Power Co., Inc.: 0.719 : Kyushu Electric Power Co., Inc.: 0.613 Bunker A: 2.76 kg-CO ₂ /ℓ : Kerosene: 2.50 kg-CO ₂ /ℓ : Light Oil: 2.62 kg-CO ₂ /ℓ LPG: 3.01 kg-CO ₂ /kg : City Gas: 2.08 kg-CO ₂ /m ³ : Tokyo Gas: 2.19 kg-CO ₂ /m ³ : Osaka/Kita Gas: 2.29 kg-CO ₂ /m ³ Cold/Hot Water: 0.057 kg-CO ₂ /MJ : Gasoline: 2.29 kg-CO ₂ /ℓ Dust amount (t) = dust density (g/m ³ N) x dry exhaust gas amount per unit hour (m ³ N/h) x annual operation hours (h/year) x 10 ⁻⁶ SOx (t) = sulfur oxide density (ppm) x dry exhaust gas amount per unit hour (m ³ N/h) x annual operation hours (h/year) x 64/22.4 x 10 ⁻⁹ NOx (t) = nitrogen oxide density (ppm) x dry exhaust gas amount per unit hour (m ³ N/h) x annual operation hours (h/year) x 46/22.4 x 10 ⁻⁹ Final disposed amount: consigned waste amount (t) x final disposal rate *(%) * General Waste: 10.7% quoted from the Ministry of the Environment, “Status of Discharge and Disposal of General Waste, etc. (Results in fiscal 2013)” Industrial Waste: figures obtained from intermediate waste disposal service responses	
			Waste	Ton	

Target Period: Target period was FY2014 (April 1, 2014 ~ March 31, 2015) and the results for the period are reported.

Scope of Reporting: KITZ Corporation and six group companies in Japan (see website).

Policy and Standards for Collection and Reporting of Environmental Performance Information:

In compliance with environment-related laws and regulations, the report is published in accordance with the “KITZ Group Environmental Philosophy,” the “KITZ Group Environmental Action Guidelines,” the “KITZ Group Environment, Safety and

Health Performance Data Calculation Guidelines” and other environment-related internal regulations.

Referenced Guidelines:

The Ministry of the Environment, *Environmental Report Guidelines (2012 Edition)*
The Ministry of the Environment, *Environmental Accounting Guidebook (2005 Edition)*

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Next publication: July 2016 (to be issued every year)

KITZ Group Safety and Health Fundamental Philosophy

KITZ places the highest priority on safety and health in all of its activities based on the principle of showing respect for people. Group companies conduct extensive safety and health programs with the goal of zero accident.

KITZ Group Safety and Health Fundamental Policies

1. KITZ is dedicated to ensuring safety and health for all employees by complying with Japan's Industrial Safety and Health Act and other associated laws and regulations as well as by adhering to internal rules and standards.
2. KITZ improves safety and health management by educating and training all employees with regard to the knowledge and skills needed for safety and health programs.
3. KITZ is dedicated to ensuring the safety of its machinery and equipment so that employees can do their jobs without concern.
4. KITZ reduces exposure to risk factors with the goal of eliminating potential sources of danger and harm to employees in workplaces.
5. KITZ maintains stimulating and pleasant workplaces that contribute to the mental and physical wellbeing of all employees.

Take Preventive Steps and Improve Safety Awareness Through Group-wide Safety and Health Programs

KITZ implements measures from the two perspectives of coordinated programs and thorough management by line managers (bottom-up approach via small group activities), with emphasis placed on changing the mindset of each person to improve safety awareness and reform workplace culture.

KITZ has formulated the following key actions as measures for employee safety and health with the aims of taking preventive steps for safety and improving safety awareness.

- Develop a management system (comply with safety and health related laws and regulations)
- Implement safety measures for machines, equipment and people (prevent similar accidents)
- Create workplace culture (promote zero accidents)

