



2022 KITZ GROUP Environmental Health and Safety Report Digest

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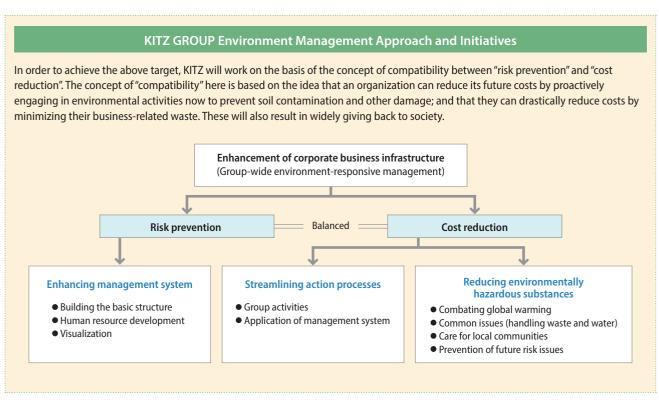
KITZ Group Principle of Environmental Activities

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.





KITZ Group Health and Safety Fundamental Philosophy

KITZ places the highest priority on health and safety 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 Health and Safety Fundamental Policies

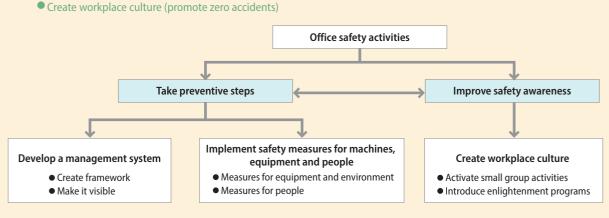
- KITZ maintains stimulating and pleasant workplaces that contribute to the mental and physical wellbeing of all employees.
- KITZ is dedicated to ensuring health and safety for all employees by complying with Japan's Industrial Health and Safety Act and other associated laws and regulations as well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

KITZ GROUP Health and Safety Activities Approach and Initiatives

The company will address safety from two directions: "Enhancement of safety activities and systematic incorporation of prevention measures into production lines" and "Promotion of volunteer activities at workplaces (bottom-up approach via small group activities)". Through this two-pronged approach, the company will encourage a change in every employee's mindset and increase employees' awareness with regard to safety, thereby reforming the corporate culture.

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

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



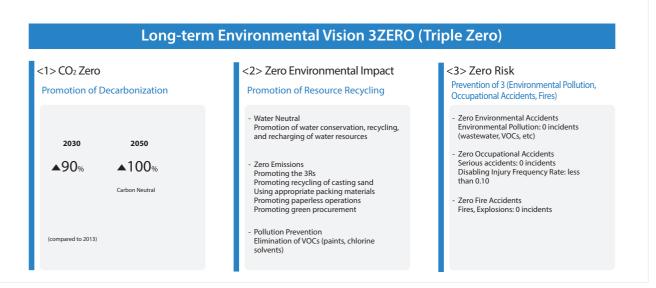
Promoting Sustainability Management

■ KITZ Group Environmental Activities

Since the 2000s, the KITZ Group has made environmental initiatives an important management theme, using activities that reduce the impact on the environment as well as developing and providing products and services that are gentle on the environment, to work towards being a corporate group that is trusted for providing safe products to society. In order to achieve this, the group has established an environmental management system, actively invested in management resources to use resources effectively, reduce waste, and promote recycling. Between 2013 and 2020, KITZ achieved reductions of over 10% in the five categories of CO2, Energy, water resources, waste, and PRTR (chemical substances) (only landfill disposal was reduced by just 2%). These environmental initiatives have been recognized highly in society. For example in 2017 the Nagasaka plant was awarded the FY2017 Yamanashi Energy-saving Smart Company Award, and in 2020 received the Kanto Bureau of Economy, Trade and Industry Director-General's Award.

■ Mid- and Long-term Environmental Goals

In order to provide customers with high-quality products, mainly valves, in a prompt and continuous manner, KITZ has used an integrated production system starting from materials, since its establishment. In particular, casting is an important process that requires advanced production technology and large-scale facilities, while also involving various risks relating to energy, waste, and employee safety. It is for this reason that manufacturing that takes safety and the environment into account is essential, and the reason why we are working towards our long-term environmental vision of "triple zero."



An especially important issue is the CO2 Zero initiative. In response to the Paris Agreement, Japan has pledged to reduce its emissions from 46% from the base year of 2013 to 2030, and to reduce them to virtually zero by 2050. By having all domestic group companies use renewable energy for their electricity by the end of FY2024, KITZ will work towards achieving the mid-term environmental goal of an 90% or more reduction by 2030, and the long-term environmental goal of becoming carbon neutral by 2050.

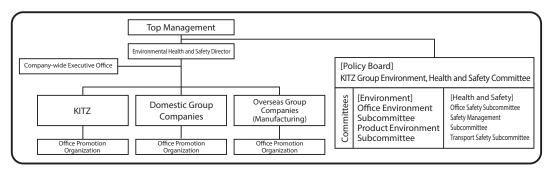
The second important issue is Zero Environmental Impact. To this effect, we are tackling three themes: effective use of water resources, a resource closely related to valves; reduction of waste generated by plants and offices, and promotion of manufacturing without organic solvents to minimize not only air and soil pollution but also the impact on the health of employees.

The third important issue is Zero Risk. We are working to maintain safe and secure manufacturing and stable operations through activities to prevent occupational accidents, environmental pollution, and fires.

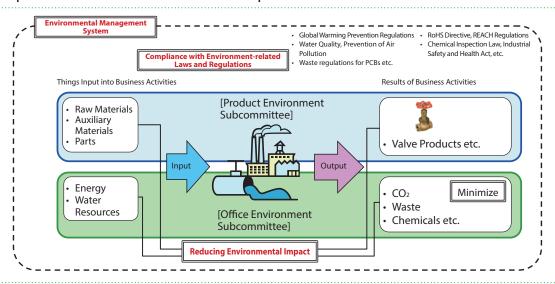
Environmental Health and Safety Promotion System

Promotion of Environmental Health and Safety within the KITZ Group is done by the KITZ Group Environment, Health and Safety Committee, which includes group company presidents and executive officers as members, and chaired by the Environmental Health and Safety Director. In addition to confirming the setting of measures and targets related to environmental health and safety, performance evaluation, and compliance with laws and regulations, the committee also deliberates on countermeasures to resolve issues.

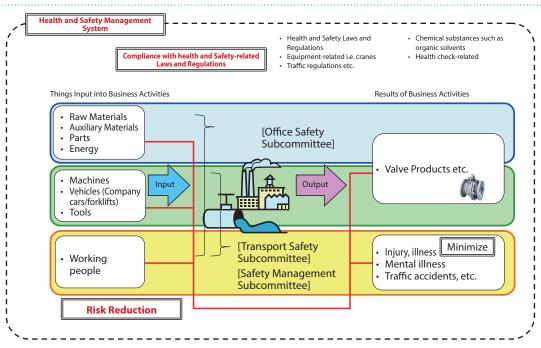
The Environmental Health and Safety Director reports to the board of directors on the status of implementation and progress management of the long-term environmental vision and environmental capital investment.



KITZ Group Environmental Activities Visual Representation



KITZ Group Health and Safety Activities Visual Representation

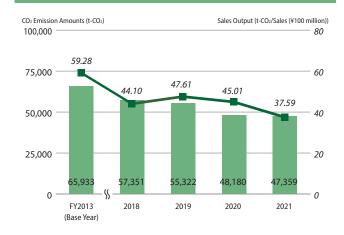


Main environmental and health/safety data

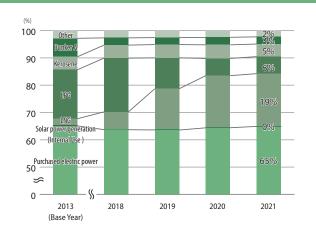
KITZ and domestic group companies (including sales offices)

Basic Sales Unit

CO₂Emission (ton- CO₂)



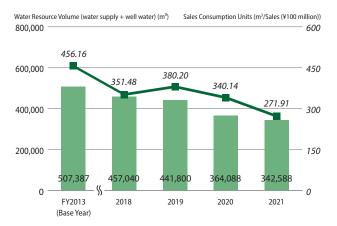
Changes in Energy Consumption Rates



Energy Consumption (GJ)



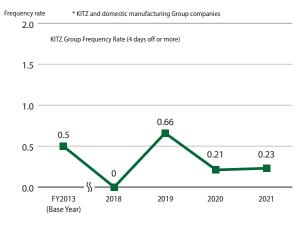
Changes in volume of water resources



Discharge of Industrial Waste (ton)



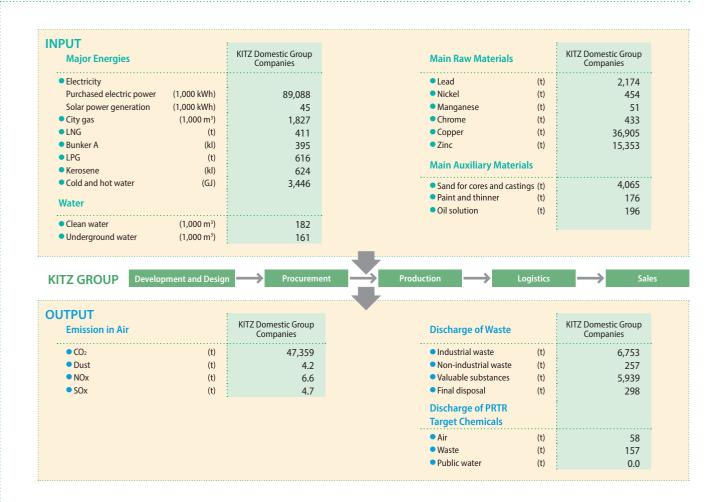
Trends in frequency rate



^{*}Aggregated from January to December 2020 due to the change in the accounting period

^{*}CO₂ emissions (t-CO₂) are calculated using unadjusted coefficients.

Overall Image of Environmental Impact



Environmental Accounting

■ Environmental Conservation Costs

Total costs

Total capital investment

(Thousand of yen)

■ Environmental Conservation Effects

Category		Main actions		ital ment	Expenditures
Cost for premises				,488	544,181
Sreakdown	Pollution control	Introduction, purchasing and maintenance of facilities	13,438		198,146
	Global environment protection	Introduction of facilities and equipment	36,071		170,696
ğ	Resource circulation	Reduction, recycling and outsourced disposal of waste		980	175,339
Pro	duct recycling	Collection and recycling of used goods	0		11,482
Administrative duties		ISO-related works, environmental measurement and disclosure of environmental information		,980	54,077
Research and development		Development of lead-free and other environmentally friendly products	0		37,874
Soc	ial activities	Promotion of greening activities	0		1,058
Damaged environment recovery		Purification of underground water	0		1,317
	Other costs			0	2
	Total		53	,468	649,991
	Total costs	Costs for anvironmental conserva	tion	Tota	al operation

Costs for environmental conservation

2.0% against total operation cost (A)

1.6% against total operation cost (A)

Category	Numerical targets (Unit)	Results in FY2020	Results in FY2021	FY2021 less FY2020
	Consumed total energies (GJ)	485,705	496,636	10,931
Effects related with	Consumed PRTR materials (ton)	3,242	3,231	(11)
input resources	Consumed clean water (m³)	211,653	182,077	(29,576)
	Consumed underground water (m³)	152,436	160,511	8,075
Effects related with	Greenhouse gas emission (ton-CO ₂)	48,180	47,359	(821)
output waste and pollutants	Discharged or displaced chemicals (ton)	205	215	10
	Discharged total waste (ton)	6,859	6,675	(183)

(Net financial gain) (Thousands of yen) Details of effects Amount Profits Earned from recycling waste and used products 1,015,627 Saved by energy saving activities (1,161,727)

■ Economic Effects of Environmental Conservation Activities

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649,991	Profits	Earned from recycling waste and used products	1,015,627
al operation		Saved by energy saving activities	(1,161,727)
costs (A)	Saved expenditures	Reduced recycling expenditures	341,974
2,707,782	схрепанаез	Saved by waste reduction	(81,590)
2,435,741		Total	114,284

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

Strengthening of the Environmental and Health & Safety Management System

The KITZ Group has set goals regarding the environment and health & safety in each office and has built a management system to deploy its activities based on ISO 14001 and ISO 45001. 10 sites in Japan and 10 sites overseas have been certified ISO 14001, while 10 sites in Japan and 1 site overseas have been certified ISO 45001. The Group will continue to promote environmental and health & safety management globally.



■ ISO 14001 and ISO 45001 Integrated Certification Obtained Offices

Name of business office						
KITZ Corporation Nagasaka Plant	KITZ Micro Filter Corporation (Chino Plant, Suwa Plant)					
KITZ Corporation Ina Plant	KITZ SCT Corporation					
KITZ Corporation Chino Plant	Shimizu Alloy Mfg. Co., Ltd.					
KITZ Metal Works Corporation	Hokutoh Giken Kogyo Corporation (Yamanashi Plant, Minowa Office)					

■ Status of Acquisition of ISO 14001 Certification (Overseas)

Name of business office	Date of acc	Date of acquisition		
(1) KITZ Corporation of Taiwan	November	2000		
(2) Cephas Pipelines Corp.	May	2003		
(3) KITZ (Thailand) Ltd. Bangplee Plant	December	2010		
(4) KITZ Corporation of Kunshan*	December	2010		
(5) KITZ Corporation of Jiangsu Kunshan	April	2011		
(6) KITZ (Thailand) Ltd. Amatanakorn Plant	February	2012		
(7) KITZ Corporation of Europe, S.A.	May	2012		
(8) Filcore Co., Ltd.	August	2014		
(9) Metalúrgica Golden Art's Ltda.	December	2019		
(10) KITZ SCT Corporation of Kunshan	January	2021		

^{*}ISO 45001 certification has been obtained in November 2021.

Calculation Standards (Results in FY2021)

Environmental performance index		Unit	Calculation method								
				Energy amount consumed in business activities (GJ) Σ [Each energy annual use amount x each unit calorific value] x							
INPUT	Tot	tal anaray	GJ	*Source: FY2020 Energy Supply and Demand Report (Revised Report) (Released April 15, 2022) Agency for Natural Resources and Energy							
		Total energy input amount		Electricity: 3.6 MJ/kWh	3.6 MJ/kWh Bunker A: 38.9 MJ/ℓ		Kerosene: 36.5 MJ/ℓ		Ligh	Light Oil: 38.0 MJ/ℓ	
				LPG: 50.1 MJ/kg		City Gas: 39.9 MJ/m	1 ³	Gasoline: 33	.4 MJ/ℓ	LNO	6: 54.7 MJ/kg
			GJ	Amount of cold and hot water, t	the heat so	ource, accepted from loca	l cooling and heat	ing system for ve	ntilation use at k	ITZ Head Office E	Building (Makuhari New City, Chiba)
		v materials ut amount	Ton	Annual use amount of raw	Annual use amount of raw materials directly used for manufacturing of products (t)						
	Use an	mount of water	m³	Annual use amount of clea	an wateı	r and underground w	rater (m³)				
	Carbon dioxide (CO ₂) emission amounts	Business activities		CO ₂ emitted from the ener * List of calculation method an Electric power (kg-CO ₂ /kWh)	nd emissio Tokyo Ele Incorpora	on coefficients in the calc ectric Power Company, ated: 0.447 Electric Power Co., Inc.:	.,	wer Company Power Company,	Chubu Electric P 0.406	ower Co., Inc.:	Global Warming Countermeasures Hokkaido Electric Power Co., Inc.: 0.601 Kyushu Electric Power Co., Inc.: 0.365
5	(202)			Bunker A: 2.70 kg-CO ₂ /ℓ		Kerosene: 2.48 kg-0	CO2/l		Light Oil: 2.	61 kg-CO₂/ℓ	
Ę) ap			LPG: 2.96 kg-CO ₂ /kg		City Gas: 1.99 kg-C	O ₂ /m ³ Toky	o Gas: 2.19 kg-	-CO ₂ /m ³ Os	aka/Kita Gas: 2	2.29 kg-CO ₂ /m ³
0	ioxi			Cold/Hot Water: 0.057 kg-CO ₂ /MJ Gasoline: 2.24 kg-CO ₂ / ℓ LNG: 2.71 kg-CO ₂ /kg							
	on d			Dust amount (t) = dust density (g/m³N) x dry exhaust gas amount per unit hour (m³N/h) x annual operation hours (h/year) x 10 ⁻⁶							
	Carb			SOx(t) = sulfur oxide density (ppm) x dry exhaust gas amount per unit hour (m3N/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 (m³N/h) x annual operation hours (h/year) x 46/22.4 x 10 °							
	Was	ste volume		Final disposed amount: consigned waste amount (t) x final disposal rate *(%) * Municipal Solid Waste: 9.1% Quoted from: Ministry of the Environment "Municipal solid waste emissions and disposal (Results in fiscal year 2020)" Industrial Waste: Figures reported by intermediate processing companies.							

Target Period: The period covered is fiscal year 2021 (January 1, 2021 to December 31, 2021).

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

Policy and Standards for Collection and Reporting of Environmental Performance Information: Listed in compliance with environmental laws and regulations, and the KITZ Group Environmental Philosophy, KITZ Group Environmental Action Policy, KITZ Group Basic Philosophy of Health and Safety, KITZ Group Environmental, Health and Safety Performance Data Calculation Guidelines, and other environment-related internal regulations.

Referenced Guidelines: The Ministry of the Environment, Environmental Report Guidelines (2018 Edition) The Ministry of the Environment, Environmental Accounting Guidebook (2005 Edition) Published: October 2022 Next publication: September 2023 (to be issued every year)