



2023

KITZ GROUP Environmental Health  
and Safety Report Digest

Environmental Health and Safety Report Digest

## 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

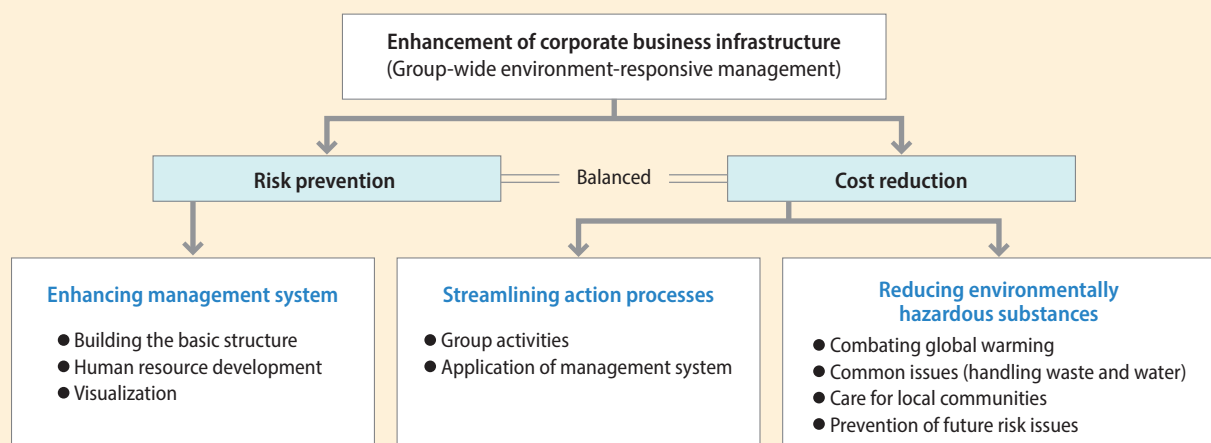
2. Effective use of resources

3. Promotion of reduction, reuse and recycle of waste

4. Prevention of environmental contamination

### KITZ GROUP Environment Management Approach and Initiatives

In order to achieve the above target, KITZ will work on the basis of the concept of compatibility between "risk prevention" and "cost reduction". The concept of "compatibility" here is based on the idea that an organization can reduce its future costs by proactively engaging in environmental activities now to prevent soil contamination and other damage; and that they can drastically reduce costs by minimizing their business-related waste. These will also result in widely giving back to society.



## 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

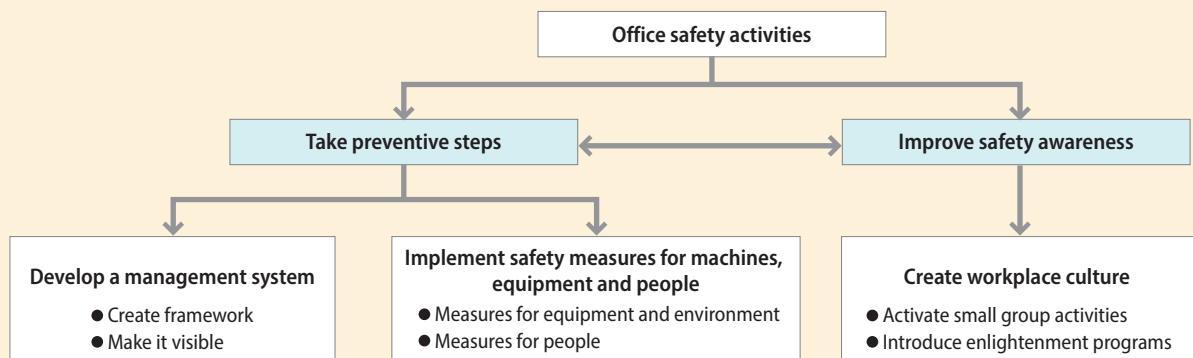
1. KITZ maintains stimulating and pleasant workplaces that contribute to the mental and physical wellbeing of all employees.
2. KITZ is dedicated to ensuring health and safety for all employees by complying with Japan's Industrial Health and Safety Act and other associated laws and regulations as well as by adhering to internal rules and standards.
3. 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.
4. KITZ is dedicated to ensuring the safety of its machinery and equipment so that employees can do their jobs without concern.
5. 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)
- Create workplace culture (promote zero accidents)



## Promoting Sustainability Management

### ■ KITZ Group Environmental Activities

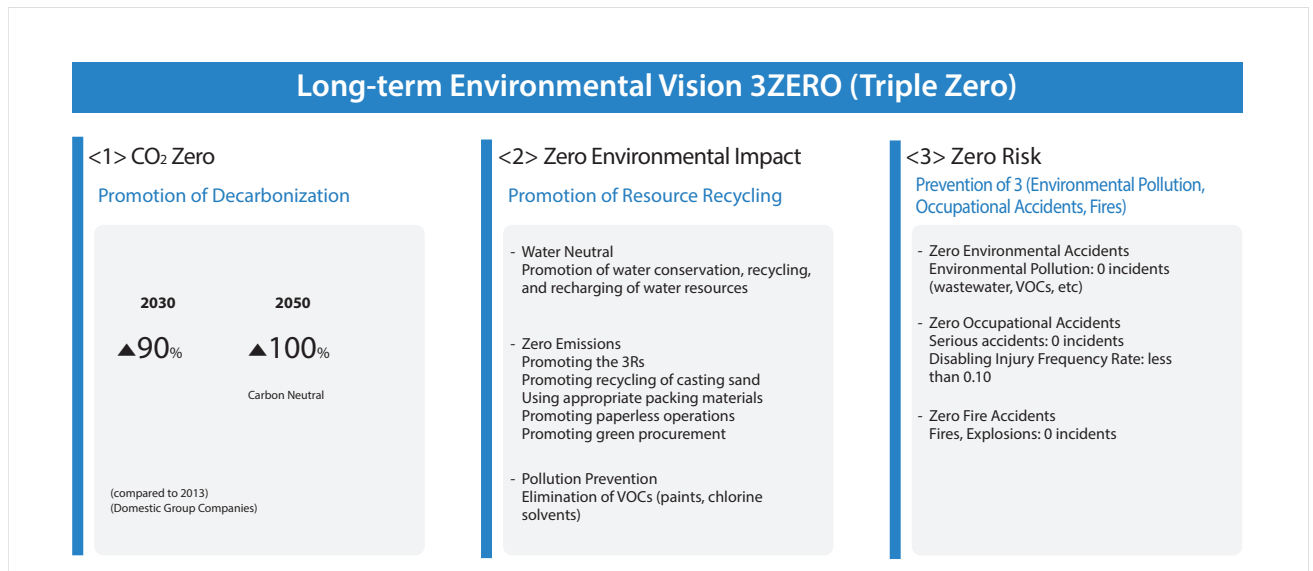
Since the 1998, the KITZ Group has made environmental initiatives an important management theme. By using activities that reduce the impact on the environment as well as developing and providing products and services that are gentle on the environment, we work towards being a reliable corporate group. 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. As for the KITZ Group's environmental targets, we have achieved a 67.2% reduction in CO<sub>2</sub> emissions and a 31.6% reduction in water resources compared to the base year of 2013.

We launched the Green Factory and Safety Factory Certification System in 2023 to certify that business sites have achieved results in these environmental and safety activities. This certification system is designed to promote activities, visualize progress, and accelerate efforts to achieve the goals of the "Triple Zero" long-term environmental vision.

In order to continue to be a corporate group that is trusted and chosen by all stakeholders, and to continue to deliver safety and security to the world through the stable supply of valves, we are convinced that the challenge of achieving triple zero is a management theme that the KITZ Group must pursue with all of its resources.

### ■ 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."



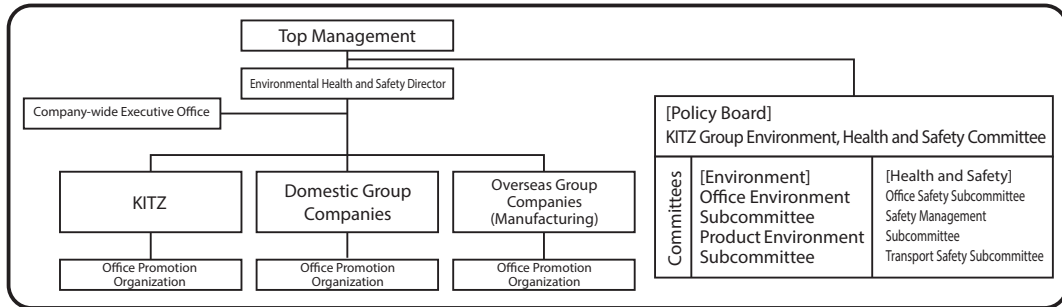
An especially important issue is the CO<sub>2</sub> Zero initiative. In response to the Paris Agreement, Japan has pledged to reduce its emissions from 46% from the base year of 2013 to 2030, and to reduce them to virtually zero by 2050. By having all domestic group companies use renewable energy for 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.

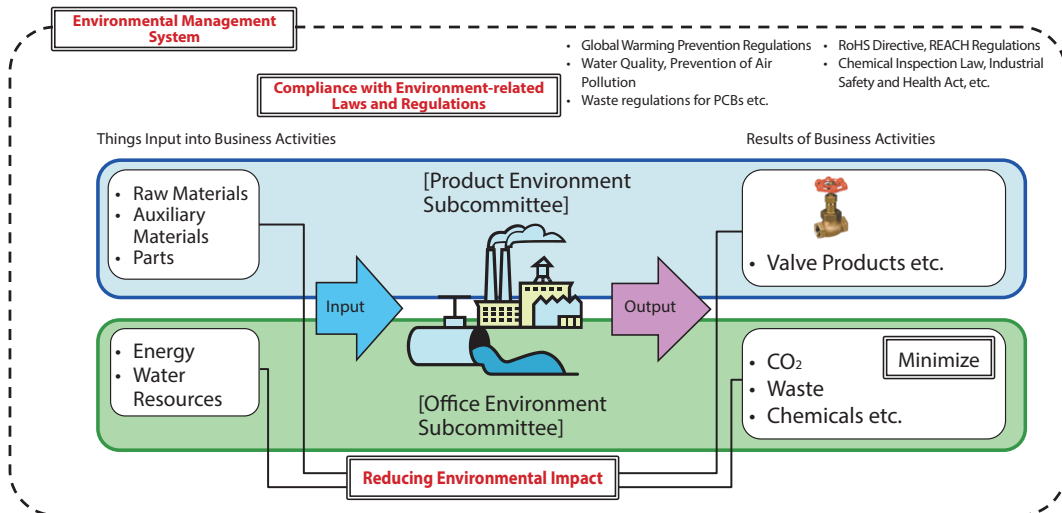
The third important issue is Zero Risk. We are working to maintain safe and secure manufacturing and stable operations through activities to prevent occupational accidents, environmental pollution, and fires.

## Environmental Health and Safety Promotion System

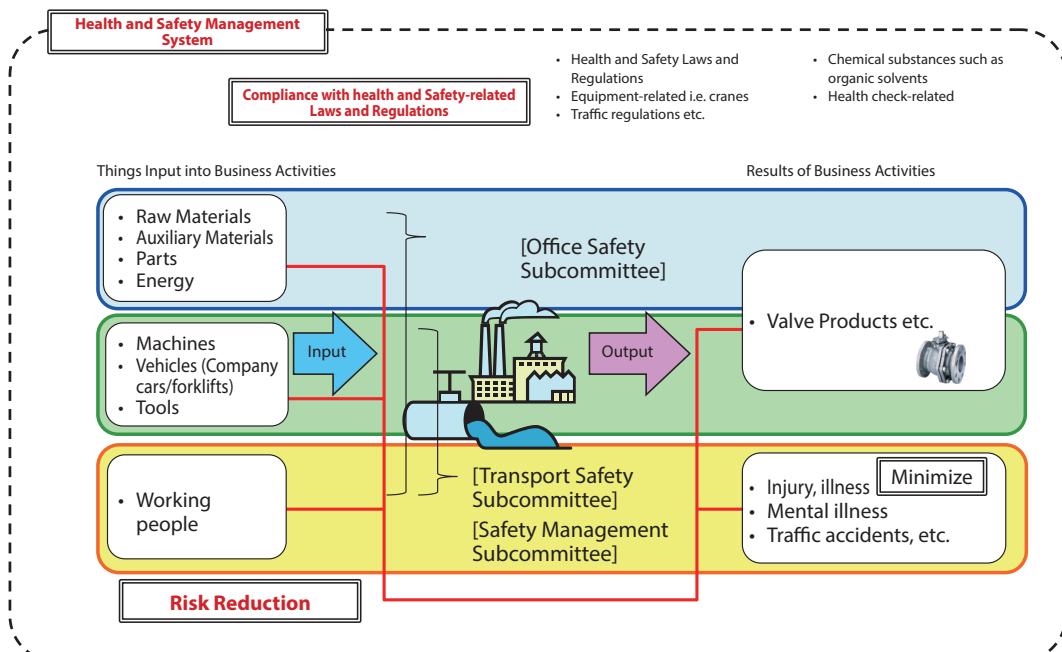
Promotion of Environmental Health and Safety within the KITZ Group is done by the KITZ Group Environment, Health and Safety Committee, which includes group company presidents and executive officers as members, and chaired by the Environmental Health and Safety Director. In addition to confirming the 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



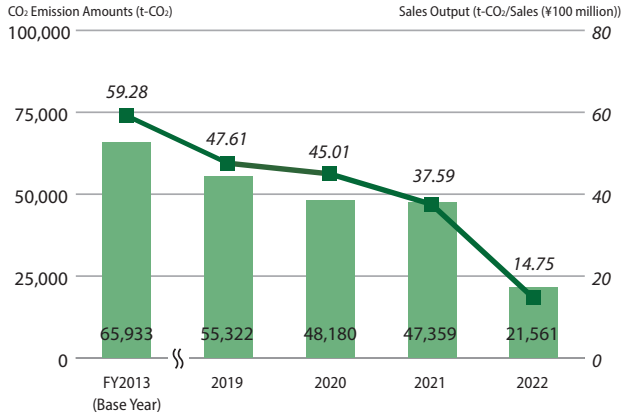
## KITZ Group Health and Safety Activities Visual Representation



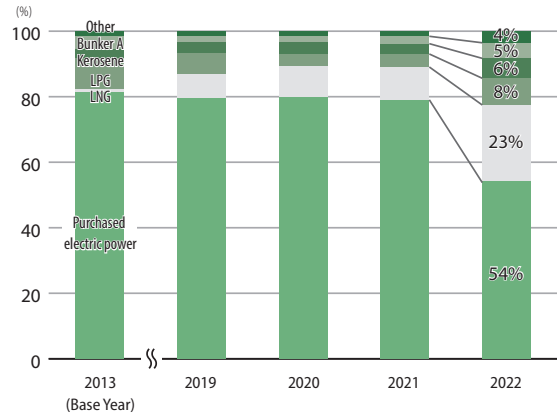
## Main environmental and health/safety data

■ KITZ and domestic group companies (including sales offices)  
 ■ Basic Sales Unit

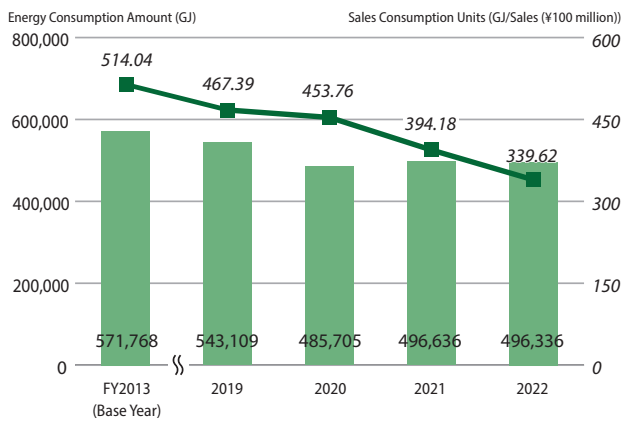
### CO<sub>2</sub> Emission (ton- CO<sub>2</sub>)



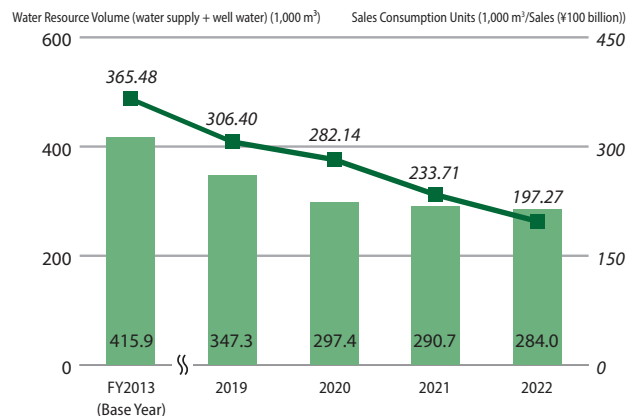
### Changes in CO<sub>2</sub> Emission Rates by Energy Type



### Energy Consumption (GJ)

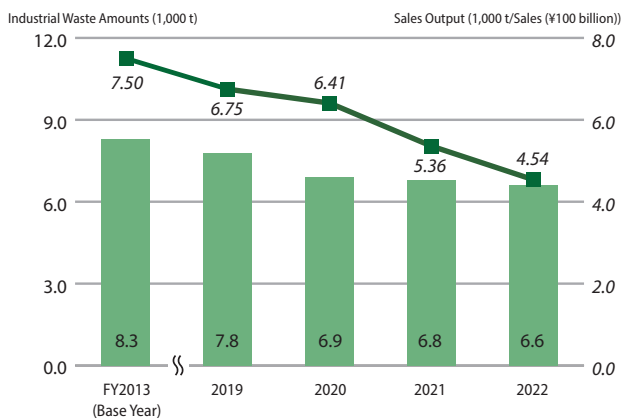


### Changes in volume of water resources

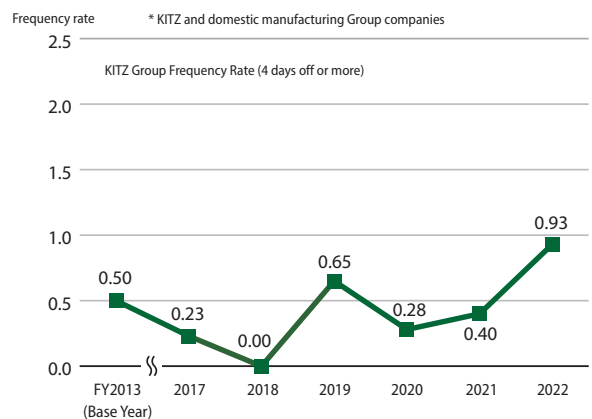


\*Process water used in the manufacture of valves, etc

### Discharge of Industrial Waste (ton)



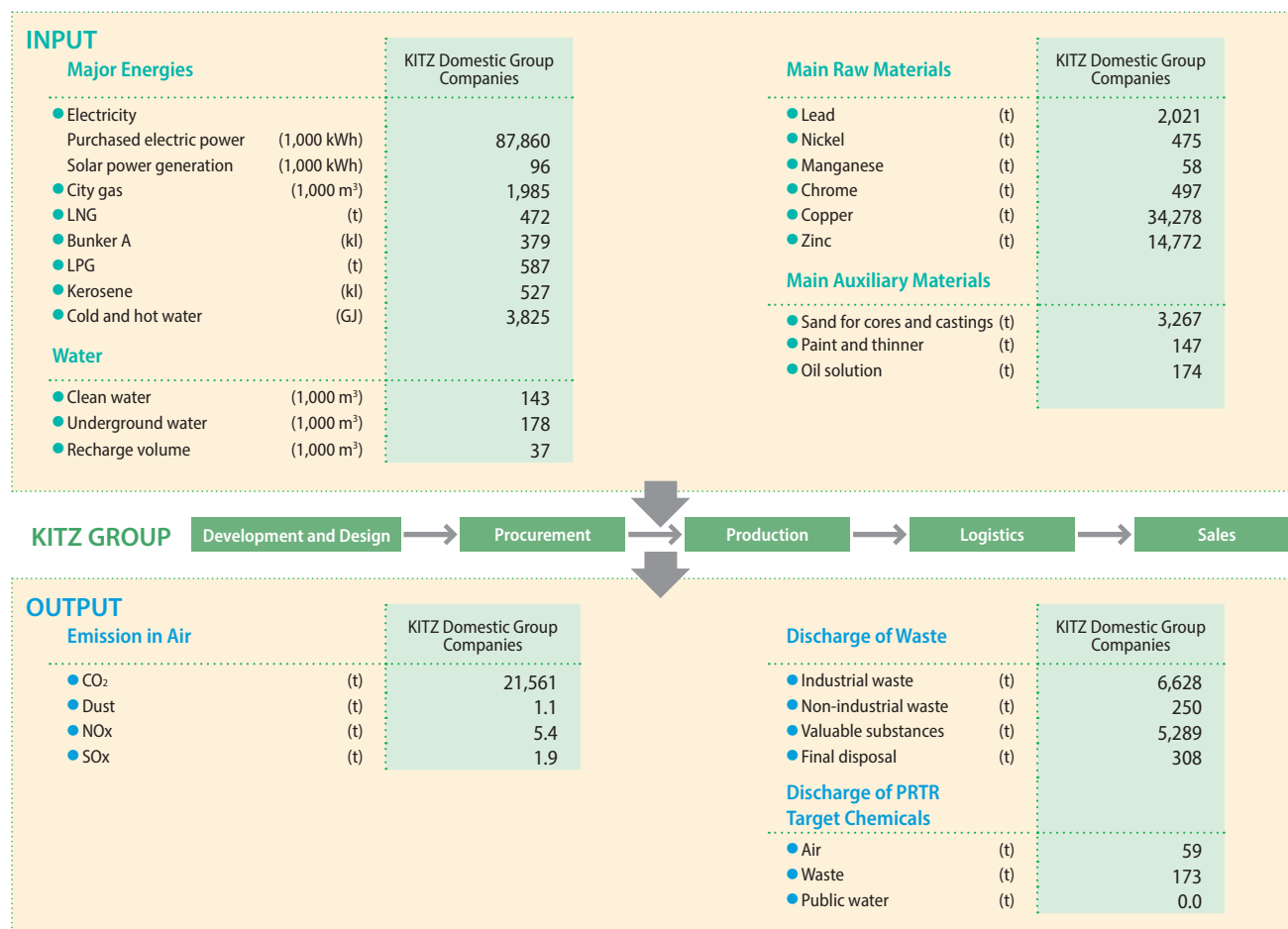
### Trends in frequency rate



\*Aggregated from January to December 2020 due to the change in the accounting period

\*CO<sub>2</sub> emissions (t-CO<sub>2</sub>) are calculated using unadjusted coefficients.

## Overall Image of Environmental Impact



## Environmental Accounting

## ■ Environmental Conservation Costs

(Thousand of yen)

Category	Main actions	Capital investment	Expenditures
Cost for premises		40,658	566,157
Breakdown	Pollution control	17,552	194,673
	Global environment protection	14,864	184,318
	Resource circulation	8,242	187,166
Product recycling	Collection and recycling of used goods	0	7,895
Administrative duties	ISO-related works, environmental measurement and disclosure of environmental information	999	65,025
Research and development	Development of lead-free and other environmentally friendly products	0	24,123
Social activities	Promotion of greening activities	0	1,716
Damaged environment recovery	Purification of underground water	0	0
Other costs		0	11
<b>Total</b>		<b>41,657</b>	<b>664,927</b>

Total costs	Costs for environmental conservation	Total operation costs (A)
Total capital investment	0.9% against total operation cost (A)	4,576,704
Total R&D expenditures	0.9% against total operation cost (A)	2,648,951

## ■ Environmental Conservation Effects

Category	Numerical targets (Unit)	Results in FY2021	Results in FY2022	FY2022 less FY2021
Effects related with input resources	Consumed total energies (GJ)	496,636	496,336	(300)
	Consumed PRTR materials (ton)	3,231	3,521	290
	Consumed clean water (m <sup>3</sup> )	182,077	201,098	19,021
	Consumed underground water (m <sup>3</sup> )	160,511	177,775	17,264
Effects related with output waste and pollutants	Greenhouse gas emission (ton-CO <sub>2</sub> )	47,359	21,561	(25,798)
	Discharged or displaced chemicals (ton)	215	243	28
	Discharged total waste (ton)	6,675	6,628	(48)

## ■ Economic Effects of Environmental Conservation Activities

(Net financial gain)

(Thousands of yen)

Details of effects		Amount
Profits	Earned from recycling waste and used products	665,903
Saved expenditures	Saved by energy saving activities	284,155
	Reduced recycling expenditures	224,963
	Saved by waste reduction	22,752
<b>Total</b>		<b>1,197,773</b>

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., KITZ Engineering Service Co., Ltd. and Hotel Beniya Co., Ltd., and Hokutoh Giken Kogyo Corporation.

## 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 and ISO 45001 Certification (Overseas)

Name of business office	Date of acquisition	
	ISO 14001	ISO 45001
(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*1	December 2010	November 2021
(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) Micro Pneumatics Pvt. Ltd.*2	August 2020	August 2020
(11) KITZ SCT Corporation of Kunshan	January 2021	-

\*1 ISO 45001 certification has been obtained in November 2021.

\*2 Acquired ISO 14001 and ISO 45001 certification in Aug. 2020.

## Calculation Standards (Results in FY2022)

Environmental performance index	Unit	Calculation method		
INPUT	Total energy input amount	GJ	Energy amount consumed in business activities (GJ) Σ[Each energy annual use amount x each unit calorific value] x 10 <sup>3</sup> *Source: FY2021 Energy Supply and Demand Report (Revised Report) (Released April 21, 2023) Agency for Natural Resources and Energy 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: 39.9 MJ/m <sup>3</sup> Gasoline: 33.4 MJ/ℓ    LNG: 54.7 MJ/kg	
		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 <sup>3</sup>	Annual use amount of clean water and underground water (m <sup>3</sup> )	
OUTPUT	Carbon dioxide (CO <sub>2</sub> ) emission amounts	Business activities	Ton	CO <sub>2</sub> 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 <sub>2</sub> /kWh) Bunker A: 2.71 kg-CO <sub>2</sub> /ℓ    Kerosene: 2.49 kg-CO <sub>2</sub> /ℓ    Light Oil: 2.58 kg-CO <sub>2</sub> /ℓ LPG: 3.00 kg-CO <sub>2</sub> /kg    City Gas    Tokyo Gas: 2.21 kg-CO <sub>2</sub> /m <sup>3</sup> Osaka/Kita Gas/Suwa Gas: 2.29 kg-CO <sub>2</sub> /m <sup>3</sup> Cold/Hot Water: 0.057 kg-CO <sub>2</sub> /MJ    Gasoline: 2.32 kg-CO <sub>2</sub> /ℓ    LNG: 2.70 kg-CO <sub>2</sub> /kg
			Dust amount (t) = dust density (g/m <sup>3</sup> N) x dry exhaust gas amount per unit hour (m <sup>3</sup> N/h) x annual operation hours (h/year) x 10 <sup>-6</sup>	
			SO <sub>x</sub> (t) = sulfur oxide density (ppm) x dry exhaust gas amount per unit hour (m <sup>3</sup> N/h) x annual operation hours (h/year) x 64/22.4 x 10 <sup>-9</sup>	
			NO <sub>x</sub> (t) = nitrogen oxide density (ppm) x dry exhaust gas amount per unit hour (m <sup>3</sup> N/h) x annual operation hours (h/year) x 46/22.4 x 10 <sup>-9</sup>	
			Final disposed amount: consigned waste amount (t) x final disposal rate *(%) * Municipal Solid Waste: 8.7% Quoted from: Ministry of the Environment "Municipal solid waste emissions and disposal (Results in fiscal year 2021)" Industrial Waste: Figures reported by intermediate processing companies.	
			Waste volume	

**Target Period:** The period covered is fiscal year 2022 (January 1, 2022 to December 31, 2022).

**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: September 2023

Next publication: September 2024 (to be issued every year)