



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 two targets of “Enhancement of Environmental Management System” and “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 and 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.

We are 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.

The KITZ Group will work in unison to undertake environment-responsive management to attain these two 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 for overseas manufacturing operations
- Construction of a management system for data related to the environment

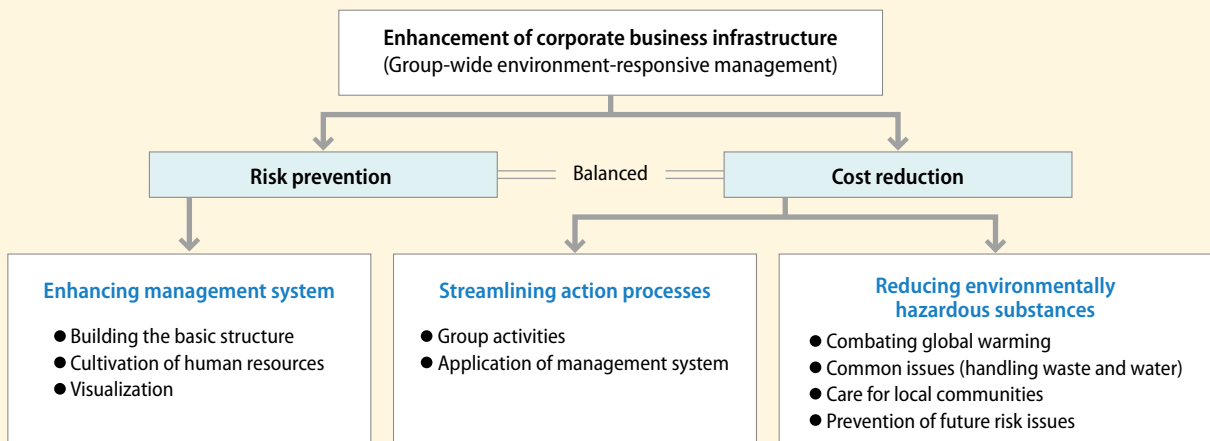
2. Reduction in Environmental Impact and Compliance with Environment-Related Laws and Regulations

Items to control:

- CO₂ emissions
Reduce CO₂ emission volume per unit of production (t/100 million yen) by 10% in 2020 from the figure in 2013. (Emission volume per unit of production: 58.81 in 2013 -> 52.71 in 2020)



Environmental Management Agenda Needed to Accomplish Targets



Environmental Target and Results in FY2015

Mid-term Management Plan: Action Plan Sheets

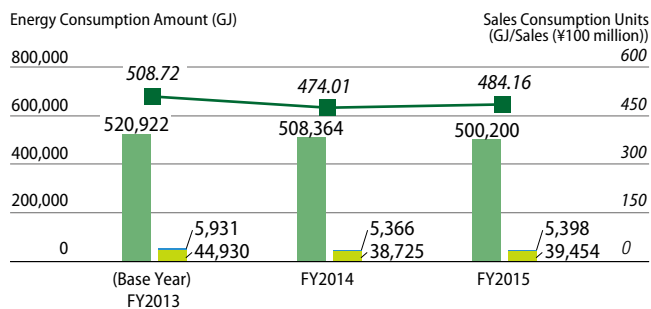
| Forcused subject | Actions planned | Target for FY2015 | Results in FY2015 |
|--|---|---|---|
| Enhancement of Environmental Management System | 1. Strengthening environmental management system | | |
| | (1) Building the basic structure for group-wide environmental management system | (1) Revise to integrated ISO 14001. (2) Implement environmental results management at overseas production bases (energy, waste materials, others). | (1) Completed the Group review in October 2015. (2) Metalúrgica Golden Art's Ltda. (Brazil) carried out environmental audit. |
| Reduction in Environmental Impact | 2. Establishment of a recycling-oriented society | | |
| | (1) Reducing discharged waste | Sales consumption units 7.07t/¥100 million | 6.81t/¥100 million (*) |
| | (2) Reducing finally disposed waste | Sales consumption units 0.30t/¥100 million | 0.31t/¥100 million (*) |
| | (3) Reducing consumed water resource | Sales consumption units 414.71 m³/¥100 million | 438.75 m³/¥100 million (*) |
| | 3. Reduce hazardous chemical substances | | |
| | (4) Reducing discharged PRTR Class-1 chemicals | Sales consumption units 0.24t/¥100 million | 0.24t/¥100 million (*) |
| | 4. Prevent global warming | | |
| (5) Reducing energy consumption | Sales consumption units 469.27GJ/¥100 million | 484.16GJ/¥100 million (*) | |
| (6) Reducing CO ₂ emission | Sales consumption units 54.57t-CO ₂ /¥100 million | 53.57t-CO ₂ /¥100 million (*) | |
| Compliance with Environment-Related Laws and Regulations | 5. Visualization of environmental risk and responses | | |
| | (1) Legal compliance | (1) Enhanced structure for gathering information about law revisions and made responses. | Responded to revised fluorocarbons law |
| | (2) PCB | (2) Disposal of PCB waste materials at the KITZ Group in Japan | Completed disposal of three of high-concentration PCB and six of low-concentration PCB. |

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

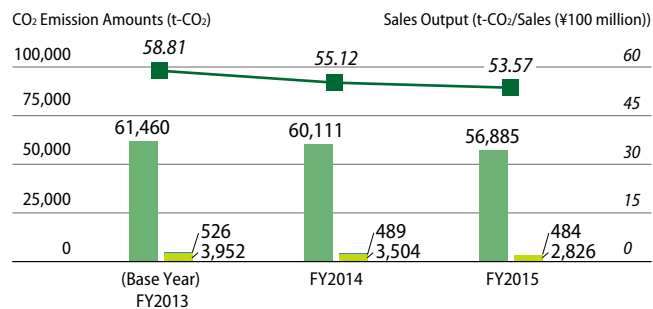
Environmental Data

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

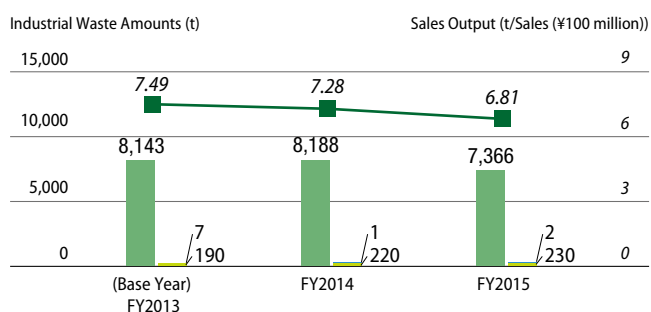
Energy Consumption (GJ)



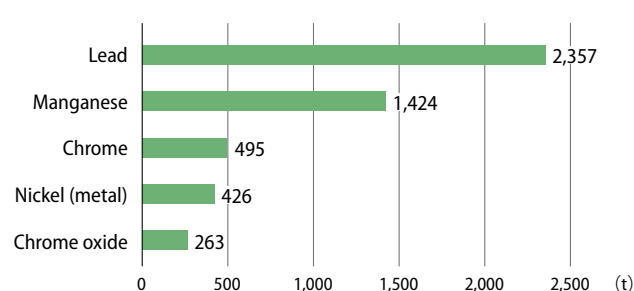
CO₂ Emission (ton-CO₂)



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 | | Manufacturers | (Sales offices) | Service companies | Main Raw Materials | | Manufacturers |
|----------------------------|-------------------------|---------------|-----------------|-------------------|---------------------------------|-----|---------------|
| Major Energies | | | | | ● Lead | (t) | 2,357 |
| ● Electricity | | | | | ● Nickel | (t) | 425 |
| ● Purchased electric power | (1,000 kWh) | 93,920 | 407 | 4,010 | ● Manganese | (t) | 1,424 |
| ● Solar power generation | (1,000 kWh) | 44 | | | ● Chrome | (t) | 495 |
| ● City gas | (1,000 m ³) | 9 | | 283 | ● Copper | (t) | 42,460 |
| ● LNG | (t) | 145 | | | ● Zinc | (t) | 20,047 |
| ● Bunker A | (kl) | 640 | | 65 | Main Auxiliary Materials | | |
| ● LPG | (t) | 1,889 | 15 | 161 | ● Sand for cores and castings | (t) | 4,841 |
| ● Kerosene | (kl) | 629 | 24 | 25 | ● Paint and thinner | (t) | 176 |
| ● Cold and hot water | (GJ) | 3,146 | | | ● Oil solution | (t) | 183 |
| Water | | | | | | | |
| ● Clean water | (1,000 m ³) | 135 | 1 | 101 | | | |
| ● Underground water | (1,000 m ³) | 252 | | | | | |



| OUTPUT in FY2014 | | Manufacturers | (Sales offices) | Service companies | Discharge of Waste | | Manufacturers | (Sales offices) | Service companies |
|------------------------|-----|---------------|-----------------|-------------------|---|-----|---------------|-----------------|-------------------|
| Emission in Air | | | | | ● Industrial waste | (t) | 7,203 | 1 | 91 |
| ● CO ₂ | (t) | 56,885 | 484 | 2,826 | ● Non-industrial waste | (t) | 163 | 2 | 139 |
| ● Dust | (t) | 4.4 | | 0.1 | ● Valuable substances | (t) | 6,200 | | 57 |
| ● NO _x | (t) | 4.9 | | 2.1 | ● Final disposal | (t) | 307 | | 43 |
| ● SO _x | (t) | 3.7 | | | Discharge of PRTR Target Chemicals | | | | |
| | | | | | ● Air | (t) | 64 | | |
| | | | | | ● Waste | (t) | 201 | | |
| | | | | | ● Public water | (t) | 0.1 | | |

Environmental Accounting in FY2015

Environmental Conservation Costs

(Thousand of yen)

| Category | | Main actions | Capital investment | Expenditures |
|------------------------------|-------------------------------|--|--------------------|--------------|
| Cost for premises | | | 576,358 | 453,003 |
| Breakdown | Pollution control | Introduction, purchasing and maintenance of facilities | 284,739 | 144,698 |
| | Global environment protection | Introduction of facilities and equipment | 290,249 | 122,361 |
| | Resource circulation | Reduction, recycling and outsourced disposal of waste | 1,369 | 185,944 |
| Product recycling | | Collection and recycling of used goods | 0 | 6,961 |
| Administrative duties | | ISO-related works, environmental measurement and disclosure of environmental information | 0 | 66,195 |
| Research and development | | Development of lead-free and other environmentally friendly products | 0 | 85,345 |
| Social activities | | Promotion of greening activities | 0 | 2,363 |
| Damaged environment recovery | | Purification of underground water | 0 | 1,250 |
| Other costs | | | 0 | 0 |
| Total | | | 576,358 | 615,117 |

| Total costs | Costs for environmental conservation | Total operation costs (A) |
|--------------------------|--|---------------------------|
| Total capital investment | 10.1% against total operation cost (A) | 5,691,340 |
| Total R&D expenditures | 3.9% against total operation cost (A) | 2,182,474 |

Environmental Conservation Effects

| Category | Numerical targets (Unit) | Results in FY2014 | Results in FY2015 | FY2015 less FY2014 |
|--|--|-------------------|-------------------|--------------------|
| Effects related with input resources | Consumed total energies (GJ) | 547,090 | 539,654 | (7,436) |
| | Consumed PRTR materials (ton) | 4,876 | 4,995 | 119 |
| | Consumed clean water (m ³) | 231,029 | 236,619 | 5,590 |
| | Consumed underground water (m ³) | 252,455 | 252,411 | (44) |
| Effects related with output waste and pollutants | Greenhouse gas emission (ton-CO ₂) | 63,615 | 59,711 | (3,905) |
| | Discharged or displaced chemicals (ton) | 278 | 265 | (12) |
| | Discharged total waste (ton) | 8,407 | 7,595 | (812) |

Economic Effects of Environmental Conservation Activities

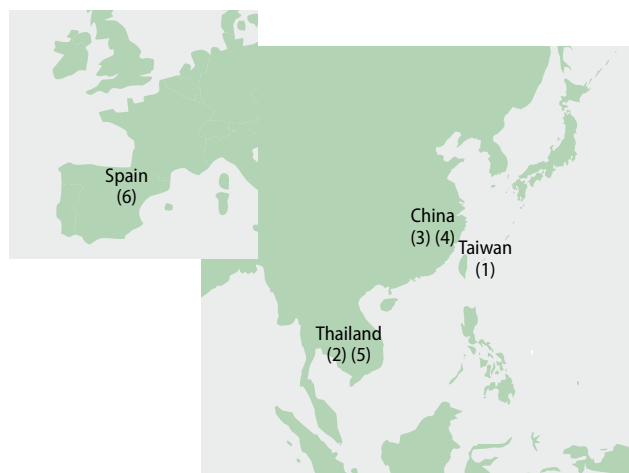
(Thousands of yen)

| Details of effects | | Amount |
|--------------------|---|----------|
| Profits | Earned from recycling waste and used products | 334,280 |
| Saved expenditures | Saved by energy saving activities | (37,393) |
| | Reduced recycling expenditures | 210,373 |
| | Saved by waste reduction | 9,257 |
| Total | | 516,517 |

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 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 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 FY2015)

| Environmental performance index | Unit | Calculation method | | | | | | | | | | | |
|---------------------------------|--|---------------------|---|---|--|--|--|---------------------------------------|--|--|--|---|--|
| INPUT | Total energy input amount | GJ | Energy amount consumed in business activities (GJ) : $\sum [\text{Each energy annual use amount} \times \text{each unit calorific value}] \times 10^{-3}$ * Source: Energy supply and demand results in 2014 (final) (published on April 15, 2016) Resources and Energy Agency | | | | | | | | | | |
| | | 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 | | | | | | | | | |
| | | | kg-CO ₂ /kWh | Electric power (kg-CO ₂ /kWh) | <table border="1"> <tr> <td>Tokyo Electric Power Company, Incorporated: 0.505</td> <td>Kansai Electric Power Company Co., Ltd.: 0.531</td> <td>Chubu Electric Power Co., Inc.: 0.497</td> <td>Hokkaido Electric Power Co., Inc.: 0.683</td> </tr> <tr> <td>Tohoku Electric Power Co., Inc.: 0.571</td> <td>Hokuriku Electric Power Company, Incorporated: 0.647</td> <td>Chugoku Electric Power Co., Inc.: 0.706</td> <td>Kyushu Electric Power Co., Inc.: 0.584</td> </tr> </table> | Tokyo Electric Power Company, Incorporated: 0.505 | Kansai Electric Power Company Co., Ltd.: 0.531 | Chubu Electric Power Co., Inc.: 0.497 | Hokkaido Electric Power Co., Inc.: 0.683 | Tohoku Electric Power Co., Inc.: 0.571 | Hokuriku Electric Power Company, Incorporated: 0.647 | Chugoku Electric Power Co., Inc.: 0.706 | Kyushu Electric Power Co., Inc.: 0.584 |
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| | | | Tohoku Electric Power Co., Inc.: 0.571 | Hokuriku Electric Power Company, Incorporated: 0.647 | Chugoku Electric Power Co., Inc.: 0.706 | Kyushu Electric Power Co., Inc.: 0.584 | | | | | | | |
| | | | kg-CO ₂ /kg | Bunker A: 2.70 kg-CO ₂ /ℓ | Kerosene: 2.48 kg-CO ₂ /ℓ | Light Oil: 2.61 kg-CO ₂ /ℓ | | | | | | | |
| | | | kg-CO ₂ /kg | LPG: 2.96 kg-CO ₂ /kg | City Gas: 2.12 kg-CO ₂ /m ³ | Tokyo Gas: 2.19 kg-CO ₂ /m ³ Osaka/Kita Gas: 2.29 kg-CO ₂ /m ³ | | | | | | | |
| | | | kg-CO ₂ /MJ | Cold/Hot Water: 0.057 kg-CO ₂ /MJ | Gasoline: 2.24 kg-CO ₂ /ℓ | LNG: 2.70 kg-CO ₂ /kg | | | | | | | |
| | | | t | 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 | | | | | | | | | |
| | | | t | 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 | | | | | | | | | |
| | | | t | 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: 10.3% quoted from the Ministry of the Environment, “Status of Discharge and Disposal of General Waste, etc. (Results in fiscal 2014)” Industrial Waste: figures obtained from intermediate waste disposal service responses | | | | | | | | | | | | |
| | Waste | | | | | | | | | | | | |

Target Period: Target period was FY2015 (April 1, 2015 ~ March 31, 2016) 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)*

Published: July 2016

Next publication: July 2017 (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)

