

2017

Safety & Environmental Report



TAIYO YUDEN

CONTENTS

Building Safety and Environmental Foundation

Safety and Environmental Management System 2-1	.....02
Safety and Environmental Management System 2-2	.....03
Safety and Environmental Audits	.....04
Safety and Environmental Risk Management	.....05
Employee Enrichment through Safety and Environmental Training	.....06
Environmental Accounting	.....07

Our Efforts toward Improving the Environment

Determining Environmental Impact of Corporate Activities	.....08
Achievement Levels for Medium-Term Environmental Targets	.....09
Curbing Global Warming	.....10
Reducing Waste / Preserving Water Resources 2-1	.....11
Reducing Waste / Preserving Water Resources 2-2	.....12
Our Efforts	.....13
Appropriate Management of Chemical Substances	.....14

Approach to Health and Safety Efforts

Achievement Levels for Medium-Term Occupational Health and Safety Targets	.....15
Efforts and Status 2-1	.....16
Efforts and Status 2-2	.....17

Editorial Policy

Why this Report was Published	The Taiyo Yuden Group strives for perpetual growth while fulfilling its corporate social responsibilities. Making efforts toward improving safety and the environment is an important social responsibility at Taiyo Yuden, so we promote such activities on a global scale. Every fiscal year, we publish a Safety and Environmental Report presenting our goals, our efforts, major results, and other details in a comprehensive yet easy to understand format.
Intended Readership	This publication assumes a target readership consisting not just of customers and clients, but also local communities in the vicinity of our sites, stockholders, investors, people involved in environmental activities or occupational health and safety, NGOs, students, group employees, and a wide range of other stakeholders. We also publish this English version to make the contents available to readers overseas.
Referenced Guidelines	This report follows the Environmental Reporting Guidelines (2012 edition) issued by the Japanese Ministry of the Environment. We have listed the core indicators of environmental performance with reference to GRI's "Sustainability Reporting Guidelines (4th edition)". Mixing in charts and figures, it outlines Taiyo Yuden Group's environmental impact describes our management systems, spotlights current issues and reports on specific measures for improving that impact.
Publication on our Website	This report is published on the Taiyo Yuden website, in consideration of effective use of resources, etc. We hope that this report will help you gain a deeper understanding of our environmental, health, and safety activities, and be used as a reference for making an objective judgment of the Group. Reference: The Taiyo Yuden website http://www.ty-top.com/

Scope of Disclosure

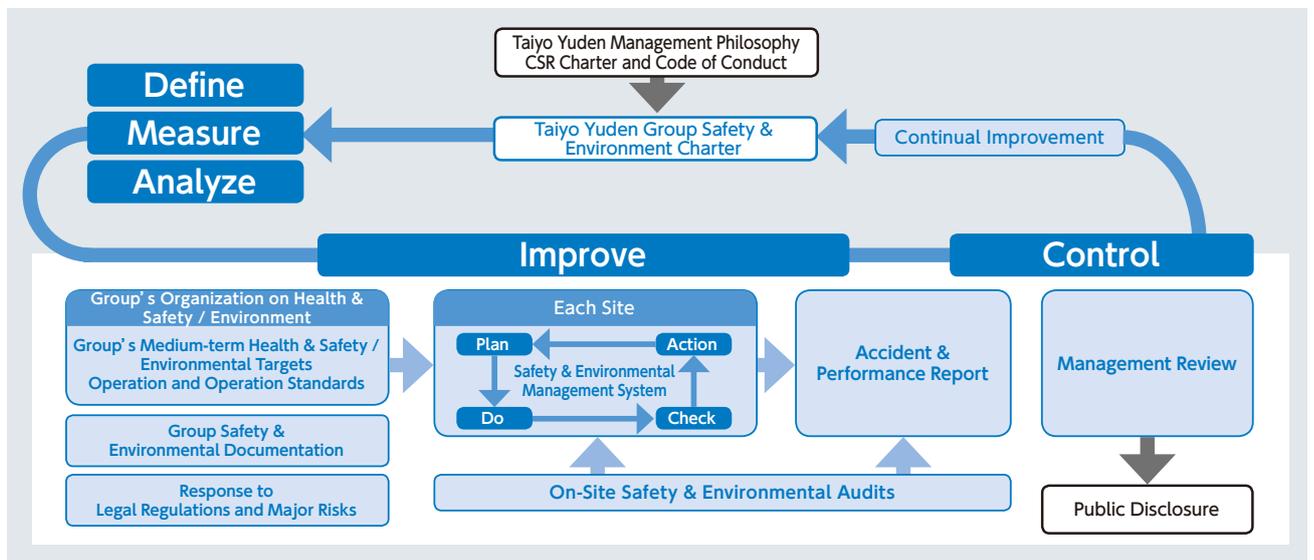
Organizations Covered by this Report	This report covers TAIYO YUDEN CO., LTD. and its domestic and overseas subsidiaries and affiliates. Safety and environment data covers the following Taiyo Yuden Group members: six domestic sites, eight domestic group companies, and six overseas group companies. [Within Japan] TAIYO YUDEN CO., LTD. Takasaki Global Center / Haruna Plant / Nakanojo Plant / Tamamura Plant / Yawatabara Plant / R&D Center Consolidated Subsidiaries TAIYO YUDEN CHEMICAL TECHNOLOGY CO., LTD. / TAIYO YUDEN TECHNO SOLUTIONS CO., LTD. / FUKUSHIMA TAIYO YUDEN CO., LTD. / NIIGATA TAIYO YUDEN CO., LTD. / TAIYO YUDEN ENERGY DEVICE CO., LTD. / WAKAYAMA TAIYO YUDEN CO., LTD. / TAIYO YUDEN MOBILE TECHNOLOGY CO., LTD. / KANKYO ASSIST CO., LTD. [Outside Japan] Consolidated Subsidiaries South Korea: KOREA TAIYO YUDEN CO., LTD. / KOREA TONG YANG YUJUN CO., LTD. / China: TAIYO YUDEN (GUANGDONG) CO., LTD. / TAIYO YUDEN (TIANJIN) ELECTRONICS CO., LTD. Philippines: TAIYO YUDEN (PHILIPPINES), INC. Malaysia: TAIYO YUDEN (SARAWAK) SDN. BHD.
Period Covered by this Report	This Report focuses on our performance from April 1, 2016 to March 31, 2017 (Date of any activities which have taken place outside this period are specified).
Date of Issue	July 2017 (Previous Issue: July 2016; Next issue scheduled for July 2018)

Safety and Environmental Management System 2-1

Our group-wide Safety and Environmental Management System keeps individual activities proceeding toward common goals under a common philosophy.

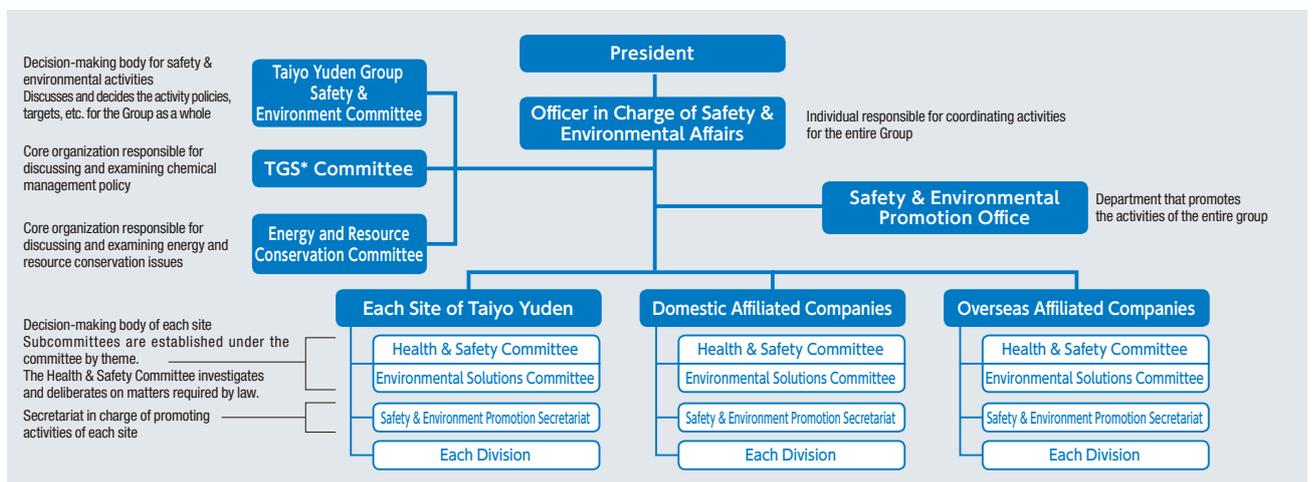
System Overview

This management system consists of long- and short-cycle activities. In the long-cycle activities, which are designed for the entire group, we are making continuous improvements based on common goals and criteria by checking achievements based on reports about site audits and from sites and by reviewing the management system. For short-cycle activities, which are specific to each site, we are making efforts based on management systems established according to ISO14001 and OHSAS18001.



Promotion Structure

The officer in charge of safety and environmental affairs appointed by the President has overall responsibility for building and managing the promotion structure for Taiyo Yuden's Safety and Environmental Management System. The Taiyo Yuden Group Safety and Environment Committee, the Taiyo Green Strategy (TGS) Committee, and the Energy and Resource Conservation Committee debate and decide policies and issues to be addressed. Each manager of sites then converts his/her decisions into actual plans matching the characteristics of each site, and takes charge of publicizing, enforcing and promoting these concrete targets.



* TGS: Taiyo Green Strategy

Safety and Environmental Management System 2-2

03

Certification Acquisition Status

Taiyo Yuden Group has obtained ISO14001 certification for all production sites and development centers. Most sites of the Group have also obtained OHSAS18001 certification.

List of Certifications Acquired

Location	Name of Sites	Acquired ISO14001 Certification	Certification authorities	Acquired OHSAS18001 Certification	Certification authorities
Japan	TAIYO YUDEN CO., LTD. Takasaki Global Center, Yawatabara Plant, Tamamura Plant, Haruna Plant, Nakanojo Plant, R&D Center	3532082 (as of Oct. 1998) Collectively certified in Japan		3531737 (as of May 2001) Collectively certified in Japan (Except TAIYO YUDEN ENERGY DEVICE CO., LTD., KANKYO ASSIST CO., LTD.)	
	TAIYO YUDEN ENERGY DEVICE CO., LTD.				
	TAIYO YUDEN CHEMICAL TECHNOLOGY CO., LTD.				
	TAIYO YUDEN TECHNO SOLUTIONS CO., LTD.				
	WAKAYAMA TAIYO YUDEN CO., LTD				
	KANKYO ASSIST CO., LTD.				
	NIIGATA TAIYO YUDEN CO., LTD.				
TAIYO YUDEN MOBILE TECHNOLOGY CO., LTD.					
FUKUSHIMA TAIYO YUDEN CO., LTD.			BV		BV
South Korea	KOREA TAIYO YUDEN CO., LTD.	20BK00267-UK (as of Mar. 2002)		BK50172 (as of Oct. 2002)	
	KOREA KYONG NAM TAIYO YUDEN CO., LTD.	20BK00256-UK (as of Mar. 2002)	BV	BK50173 (as of Oct. 2002)	BV
China	TAIYO YUDEN (GUANGDONG) CO., LTD.	CNGZ301353-UK (as of Dec. 2001)	BV	OH1419GZ (as of Jan. 2003)	BV
	TAIYO YUDEN (TIANJIN) ELECTRONICS CO., LTD.	CN08/10665 (as of Aug. 2008)	SGS	CN16/10165 (as of Jan. 2016)	SGS
Philippines	TAIYO YUDEN (PHILIPPINES), INC.	PH13/0920.00 (as of Nov. 2001)	SGS	CH14/1329.00 (as of Nov. 2002)	SGS
Malaysia	TAIYO YUDEN (SARAWAK)SDN. BHD.	ER0280 (as of Oct. 2002)	SIRIM	SR0198 (as of Sep. 2004)	SIRIM

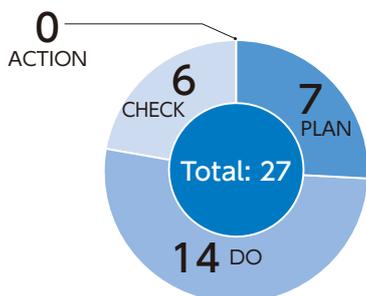
Safety and Environmental Audits

Triple audits evaluate each site's compliance, accident risk management, and the environmental impact situation aimed at producing continuous improvement.

External Audits ISO14001 and OHSAS18001 certification audits by certification authorities

Sites with ISO14001 or OHSAS18001 certification underwent the audits required to update or maintain such certification. These audits uncovered 27 nonconformities. The root causes were analyzed and corrective action was promptly taken in response to each issue. The nonconformities were minor issues relating to our management systems, and were not directly linked with environmental pollution or occupational accidents.

Number of Nonconformity Instances Found with External Audits



Nonconformity Examples

Nonconformity Examples and Details

Hazard sources are not identified or risks are not assessed in association with the storage management of structural components, which we just started.

Some of the chemical substances stored in the storage/handling space for small amounts of hazardous materials are stored in excess of the voluntarily set maximum allowable amounts. With regard to measurement of the quality of wastewater defined by the operation standards, some of the substances to be measured that we voluntarily defined are not being measured.

Corrective/Improvement Measures

We have identified hazard sources and assessed risks that are associated with the storage management of structural components, which we just started. We have also trained personnel to ensure that risks associated with the new operations are assessed.

To prevent the amount of any stored chemical substance from exceeding the maximum allowable amount, we have modified the system so that a given quantity of any chemical substance will be ordered when the amount in stock decreases below a predefined level. We have retrained the relevant personnel on the operation standards. In addition, to ensure all objects are measured, we have established rules for evaluating and verifying implementation of measurement.

Internal Site Audits Audits of site safety and environmental activities at regularly scheduled intervals allow us to compare sites.

Domestic sites: Once every two years
Overseas sites: Once every three years

In fiscal 2016, we audited nine sites to verify their conformance to the EICC code of conduct and to the customer code of conduct. In the audit process, we checked the documents and work sites in association with the preparations for and responses to emergencies, and control of chemical substances, waste materials and wastewater, among other things.

This revealed nonconformities such as imperfect measures against leaks of chemical substances and improper danger warnings about hazardous wastes. We subsequently implemented new countermeasures.

By incorporating global social requirements and benchmarking products from all sites to share the results, we are increasing the level of the safety, health, and environmental activities of the entire group.

Issue Examples

The drugs in the first-aid boxes are not regularly checked; some drugs had expired.

No secondary container was arranged in preparation for leaks from liquid-waste containers.

In the hazardous-material warehouse, no danger warnings were indicated for hazardous wastes (such as waste ink and oil).

Internal Audits Audits targeting site departments on observance of safety and environment laws, target achievement, and performance.

Between once and twice a year

All sites conducted internal audits of their departments in accordance with their management systems. Priority areas were determined for each site, and 39 non-conformities were uncovered as a result of conducting internal audits (for the Group in Japan). Corrective action was completed in all cases without delay, and after a follow-up check, it was reported to the managers that the management system has been effective in complying with the Taiyo Yuden Group's policies and goals.

Other Audits

On-site inspection of waste disposal contractors (Sites in Japan)

In fiscal 2016, we inspected and audited 16 companies (nine collection, delivery and intermediate processing companies and seven intermediate processing companies). As a result, it was confirmed that all inspected operators are processing and disposing of waste in an appropriate fashion. The operators have been classified into three ranks from the results of these inspections, with the frequency of future inspections varying depending on the rank of the operator.

Safety and Environmental Risk Management

05

Various types of regularly scheduled training are implemented to respond to sudden accidents, disasters, and other risks, with the objectives of early discovery, rapid response, prevention and mitigation. The Taiyo Yuden Group reconfirms appropriate procedures and strives for continuous improvement.

Firefighting Training



TAIYO YUDEN MOBILE TECHNOLOGY
Conducted a water-discharge, firefighting exercise using an outdoor fire hydrant.



KOREA KYONG NAM TAIYO YUDEN
Conducted training on handling fire extinguishers under the guidance of the fire department.



TAIYO YUDEN (GUANGDONG)
Conducted an early-stage water-discharge exercise using dry chemical extinguishers.

Emergency Training for Spillage of Chemical Substances



TAIYO YUDEN CHEMICAL TECHNOLOGY
Conducted training on preventing a leak from spreading and collecting the leaked solvent for a scenario in which an organic solvent has leaked in a warehouse.



KOREA KYONG NAM TAIYO YUDEN
Conducted training on switching to a spare refrigerator and removing leaked oil for a scenario in which oil has leaked from a refrigerator.



TAIYO YUDEN (SARAWAK)
Conducted training on collecting a leaked chemical substance for a scenario in which a container fell over and leaked while in transport.

Evacuation and Medical Emergency Training



**Yawatabara Plant,
TAIYO YUDEN TECHNO SOLUTIONS**
The command and communication staff of the private firefighting team conducted monthly training on emergency broadcasting.



NIIGATA TAIYO YUDEN
Held a first-aid course for the employees to learn about cardio-pulmonary resuscitation and other lifesaving methods.



TAIYO YUDEN (PHILIPPINES)
Invited members of the bomb disposal squad of the city as instructors to hold a lecture about bomb disposal in preparation for acts of terrorism.

Removing Soil Contamination

We completed our soil and ground water contamination surveys and made clean-up efforts following the Japanese Ministry of the Environment guidelines in 2003. No surveys were conducted in FY2016.

Environmental Accidents

No accidents that could affect the surrounding environment have occurred.

Employee Enrichment through Safety and Environmental Training

We provide a variety of training programs covering both general and specialized knowledge to promote employees' awareness of preventing occupational injuries and work-related illness, as well as active participation in environmental conservation.

Training Structure

Name		Purpose	Main Subjects
General Training	Training for new recruits	Raising new recruits' awareness of occupational health & safety and environmental preservation, and ensuring they understand environmental problems pertinent to companies	General theory of Safety & Environment / Status of Safety & Environment at the Taiyo Yuden Group
	General training	Deepening all employees' understanding of the Taiyo Yuden Group Safety and Environment Charter and Course of Action and teaching them the skills to act accordingly	Management system (including the Safety and Environment Charter) / Mental health
	Workplace training	Understanding potential hazards and environmental impact with regard to divisional health and safety/environmental activities and work	Division activities / Matters for compliance in work
Health & Safety Training	Training for managers	Deepening understanding of the role of the duty for employee safety required by legal regulations	Role of the General Manager of Health and Safety / Role of management
	Training for instructors and supervisors	Teaching foremen skills to instruct their subordinates in health and safety	Role of foreman / Chemical substance management / Hazardous material management
	Training for specialists	Teaching of specialized skills to operators of forklifts, cranes, and other heavy equipment, as well as managers of processes that handle organic solvents and the like, and employees involved in these tasks	Workplace restricted duties / Training for specific tasks / Prevention of static electricity accidents
Environmental Training	Training for specialists	Teaching special skills to managers and relevant employees involved with equipment and facilities for which a legal notification is required	Management to prevent deterioration of water quality / Management to prevent air pollution / Waste management
	Specialized training	Training skills to integrate business activities with environmental activities in order to balance an improvement in our environmental impact with improved resource productivity	Chemical substances and their environmental impact / Environmental targets / Cases of environmental improvements / Causes of environmental accidents and their countermeasures

Training Examples

General Training

Holding of events associated with safety and health

At all sites, we hold various events associated with safety and health, providing employees with opportunities to raise their awareness. These events include a lecture on preventing heatstroke, a health class based on stretching, a health fair, driving aptitude assessment, and a lecture on traffic.



Lecture on prevention of heatstroke



Health class

Occupational Health and Safety Training

Education programs about chemical substances

We provided education programs about the dangers of chemical substances and preventive measures such as wearing protective equipment with the objective of preventing injuries and poisoning from chemical substances.



Education programs about chemical substances



Forklift training

Forklift training

We invited external instructors to provide a lecture on forklifts and practical techniques for inspecting forklifts.

Environmental Training

Training for the managers of wastewater treatment facilities

We provided the managers of wastewater treatment facilities with training on the control system for wastewater treatment and the procedure for responding to emergencies



Training for the managers of wastewater treatment facilities



Lecture on ISO14001: 2015

Lecture on ISO14001: 2015

TAIYO YUDEN (TIANJIN) invited a lecturer from an examination organization to have them explain the changes to the requirements in ISO14001: 2015.

Environmental Accounting

The Taiyo Yuden Group promotes an effective environmental management by adopting environmental accounting to make clear what resources our domestic sites apply to their environmental preservation activities.

Environment Maintenance Costs

Type of cost	Expenses (million yen)	Investment (million yen)	Main items	
Business unit area costs	742	464		
Breakdown	Pollution prevention	389	132	Monitoring and measurement of atmosphere, water quality, noise, and vibration; emergency preparedness and response
	Conservation of global environment	166	324	Curbing emission of greenhouse gases; curbing emission of ozone-depleting substances; improvements in water quality; exhaust gas cleaning; energy saving; resource saving
	Resource recycling costs	187	8	Waste management, and outsourcing of waste treatment; reduction of waste; recycling
Upstream / downstream business activities	4	—	Activities to improve the environmental impact of products, green procurement	
Management activity costs	238	—	Building and operating an EMS; surveillance audits; environmental training; costs for operating secretariat; department operations costs	
R&D	323	—	R&D costs to improve the environmental impact of product processes etc.	
Social activities	18	—	Donations to environmental groups; participation in communities' global environmental preservation events	
Response to environmental damage	0	—		
Total	1,325	464		

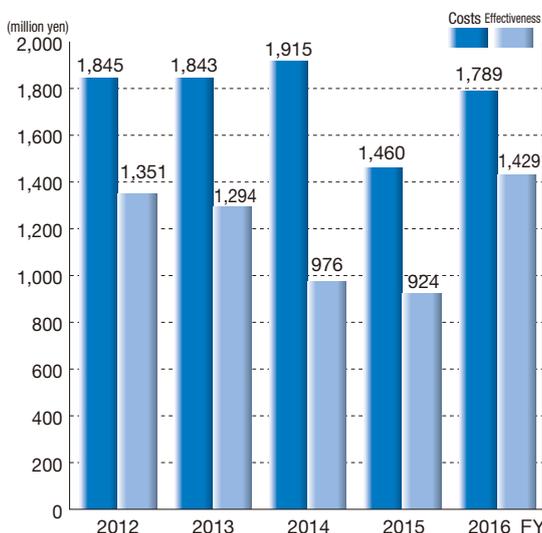
Environment Maintenance Effectiveness

We calculate the economic effects only for those activities clearly improving our environmental impact.

Type of effectiveness	Economic effect (million yen)	Effects on amounts*	Main items
Energy saving	215	4,109kL	Improvement in productivity; improvement in energy management method
Conservation of resources	5	12t	Reduction in amount of chemical substances used through improvement in process yield etc.
Reduction in waste, and recycling	1,209	2,399t	Improvement in recycling rate
Total	1,429		

Effects on amounts indicate the calculated difference with the case where no activities are conducted to improve our environmental impact.

Trends in Environmental Accounting



Environmental Accounting Standards

1. The sum total of the costs for complying with environment-related laws and regulations, the costs incurred purely for the purpose of improving our environmental impact, and the EMS operation costs are calculated. However, in cases where environmental preservation costs partially overlap the costs for other purposes, the latter shall be deducted and the balance shall be applied.
2. Depreciation costs shall be the current fiscal year's depreciation expenses at the environmental conservation facilities.
3. If a clear-cut distinction cannot be made between the environmental cost and that for other purposes, if 50% or more of the content is environment-related, the full amount can be counted as the environmental preservation cost.
4. The cost-effectiveness by saving energy is yielded from the reduction of either the rated dissipation or the operating time or both.
5. The cost-effectiveness by reducing and recycling waste is calculated as follows:

Lowered costs through reducing waste and recycling =

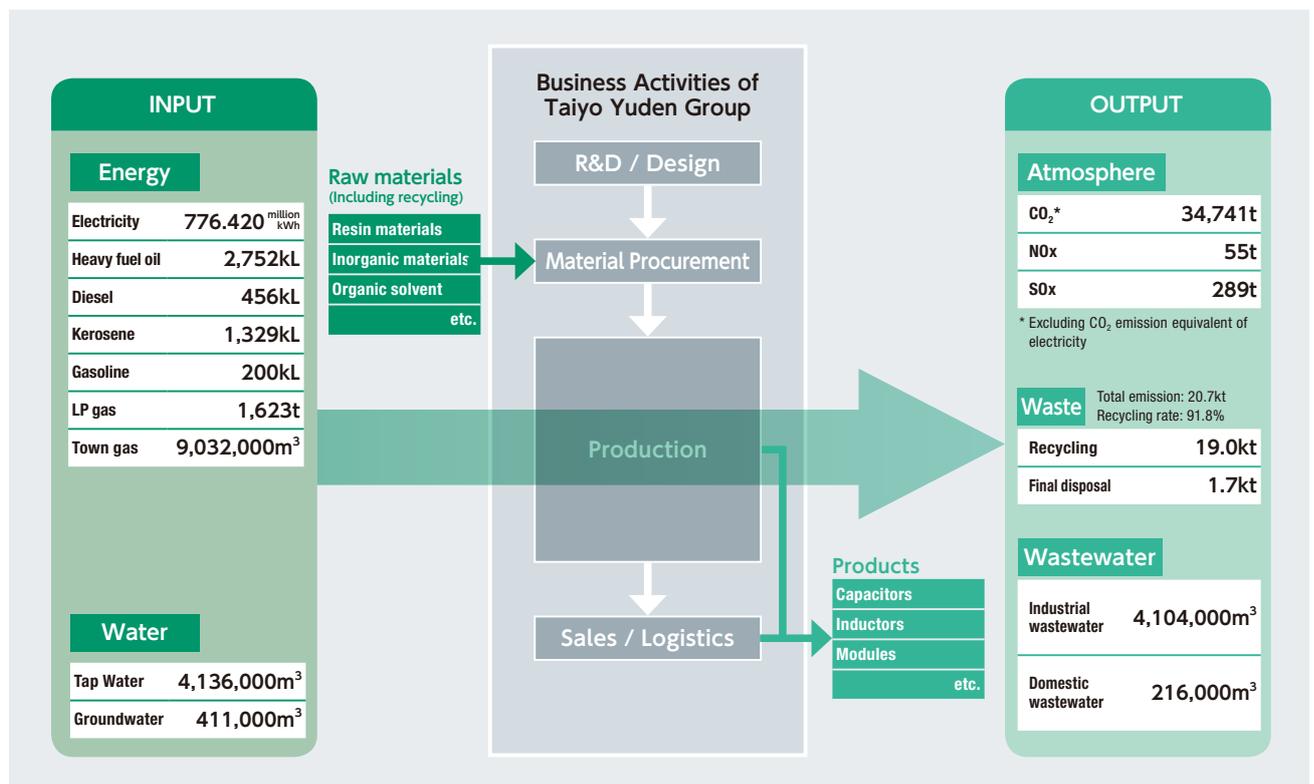
$$[\text{Unit cost of waste treatment in the prior fiscal year (JP¥/ton)} - \text{Unit cost of waste treatment in this fiscal year (JP¥/ton)}] \times \text{Amount of waste generated (tons)}$$

Determining Environmental Impact of Corporate Activities

Detailed understanding and analysis of the environmental impact of corporate activities is a prerequisite to devising various measures to improve this.

FY2016 Material Balance

The Taiyo Yuden Group primarily produces electronic components for delivery to our customers, set manufacturers. These electronic components have a life cycle with only a small environmental impact during use. The bulk is during production, with the main environmental impact arising from energy and water consumption, emissions (including CO₂) in the course of manufacture, waste and waste water. The Taiyo Yuden Group is striving to improve our environmental impact by first identifying and analyzing in detail this environmental impact and then taking such measures as minimizing the resources applied and conserving other energy and resources by improving production processes. Taiyo Yuden Group products are used in electrical and electronic equipment, automobiles, and other products which become waste once their product lifetime is over. We are therefore also striving to remove toxic substances from these products.



Reasons for Changes from FY2015

In fiscal 2016, city gas usage increased in association with a new building built on the grounds of the NIIGATA TAIYO YUDEN plant.

Achievement Levels for Medium-Term Environmental Targets

09

We set medium-term environmental targets for the Group overall.
Our environmental impact improvement efforts are implemented over all sites.

Taiyo Yuden Group Environmental Targets and Results

We are aiming to reduce our environmental impact over the five-year period from fiscal 2016 to 2020. We first set medium-term environmental goals on a per-project basis, and then set sub-goals on a per-site basis and then on a per-department basis so that each business unit can actually work on specific activities.

Medium-Term (FY2016 to FY2020) Environmental Targets			Achievements	Evaluation
Environmental risk management	Global	Compliance with applicable environmental laws and regulations	All applicable legal requirements are satisfied	○
		Maintain zero accidents that affect the ecosystem and carry out ongoing training	No accident has occurred that may affect an ecosystem. We are regularly conducting emergency training.	○
Contributing through environmentally friendly products	Global	Develop "smart products"	We are continuously developing downsized products and other smart products that help alleviate environmental impacts.	○
		Reduce environmental impact per each product	We have reviewed the production conditions, methods, and equipment to reduce the environmental load per product.	○
		Regulatory compliance for chemicals contained in products (RoHS, ELV, REACH)	Requirements for the amounts of chemicals contained in products are satisfied.	○
Curbing global warming	Global	5% improvement in "average energy consumption per unit" (weighted average by business unit) over FY2016-FY2020 compared with FY2011-FY2015	In fiscal 2016 alone, we achieved a 17.3% increase over the target 5%.	○
Preserving biodiversity Effective use of resources by "Reducing" consumption	Global	5% improvement in "average waste generation per unit" (weighted average by business unit) over FY2016-FY2020 compared with FY2011-FY2015	In fiscal 2016 alone, we achieved a 7.4% increase over the target 5%.	○
		5% improvement in "average water use per unit" (weighted average by business unit) over FY2016-FY2020 compared with FY2011-FY2015	In fiscal 2016 alone, we achieved a 16.7% increase over the target 5%.	○
Preserving biodiversity Effective use of resources by "Reuse" and "Recycling"	Global	10% improvement in "average final disposal volume per unit" (weighted average by business unit) over FY2016-FY2020 compared with FY2011-FY2015	In fiscal 2016 alone, we achieved a 36.2% increase over the target 10%.	○
	Japan	Recycle 99.5% of waste or more	In fiscal 2016 alone, we achieved a 99.9% increase over the target 99.5%.	○
Preserving biodiversity Nature conservation in local area	Global	Continue to carry out nature conservation activities in local area (in forests etc.)	We have continuously carried out activities for planting trees and preserving the Taiyo no Mori forest and Taiyoyama Mountain.	○

* Weighted average: An average in which each quantity to be averaged is assigned a weight.

Curbing Global Warming

There are three categories for greenhouse gases emitted during the course of business activities: Direct emissions from use of energy (SCOPE 1), Indirect emissions from energy use (SCOPE 2) and Indirect emissions other than from energy use (SCOPE 3). Greenhouse gas emissions cannot be easily measured, so we concentrate on energy use and reducing energy consumption.

Results of efforts to reduce greenhouse gases and energy consumption

In fiscal 2016, the amount of GHG emitted by the entire group increased by 5,000 tons-CO₂e compared with fiscal 2015. Specifically, the sites inside Japan increased their emissions to 197,000 tons-CO₂e from 195,000 tons-CO₂e in fiscal 2015 and the sites outside Japan, to 296,000 tons-CO₂e from 293,000 tons-CO₂e in fiscal 2015 (see G1).

The amount of energy used by the entire group increased by 2,000 kL compared with fiscal 2015. Specifically, the sites inside Japan increased their usage to 88,000 kL from 87,000 kL in fiscal 2015 and the sites outside Japan, to 126,000 kL from 125,000 kL in fiscal 2015 (see G2).

Energy usage is broken down into 92% for SCOPE2 and 8% for SCOPE1 (see G3).

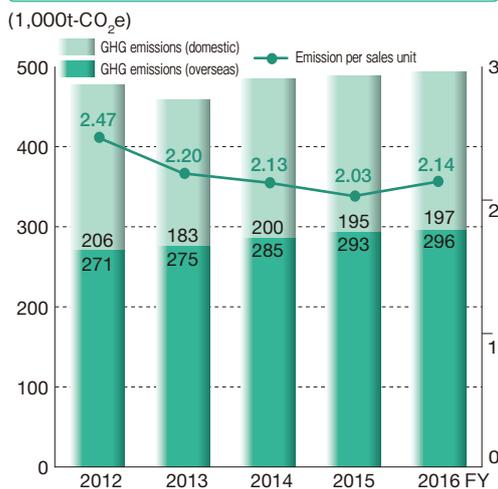
Improvement in energy intensity, which we aim to achieve in the medium term, was 17.3% in fiscal 2016 (see G4).

We will continue to review production processes with a focus on core products to further improve the production efficiency for lower energy usage.

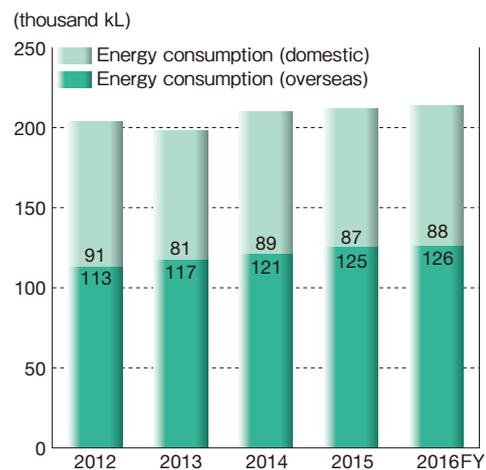
Note: Changes in the conversion factor have a major impact on greenhouse gas calculations, so the medium environmental targets were set according to energy consumption (crude oil equivalent), a factor that has measure able results.

Note: Greenhouse gas emissions are calculated using GHG Protocol factors (electricity by country).

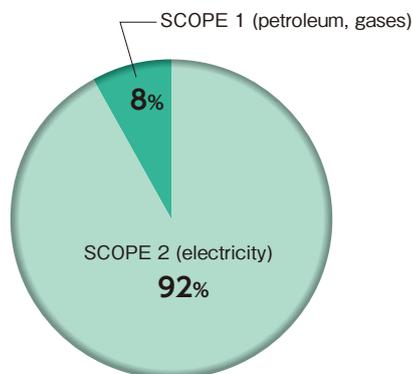
G1: Greenhouse Gas Emissions (calculated from total energy consumption)



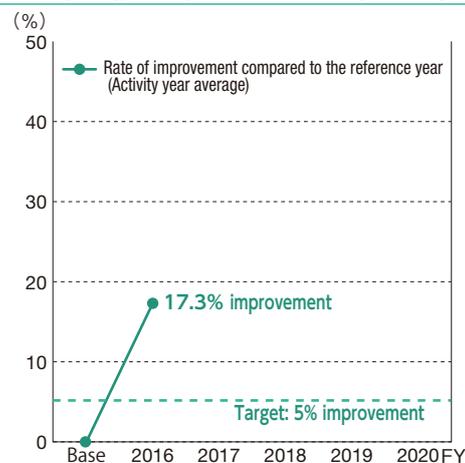
G2: Energy Consumption (crude oil equivalent)



G3: Breakdown of Energy Consumption (crude oil equivalent)



G4: Average Energy Consumption Per Unit (results compared to target)



Efforts on Indirect Emissions Other than from Energy Use (SCOPE 3)

We have ascertained that our greenhouse gas emissions from purchased goods/services were 295 kilotons-CO₂e (group), 7,136 tons-CO₂e (domestic sites) from commutes, 532 tons-CO₂e from business trips (domestic sites), 4,627 tons-CO₂e from disposal and processing of waste (domestic sites) and 30,200 tons-CO₂e from transporting products (group).

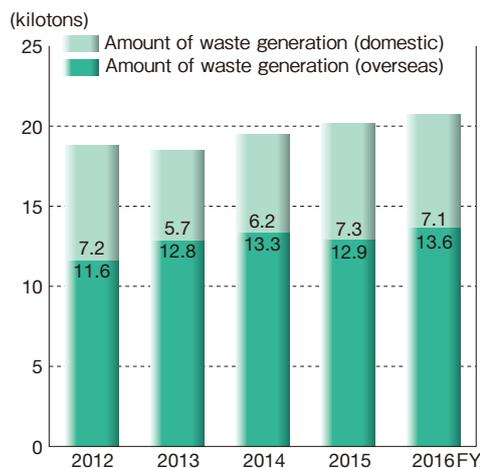
Reducing Waste / Preserving Water Resources 2-1

We strive to reduce environmental effect on biodiversity while coexisting with nature, and we use the 3Rs (reduce, reuse, recycle) to reduce waste and make effective use of water resources.

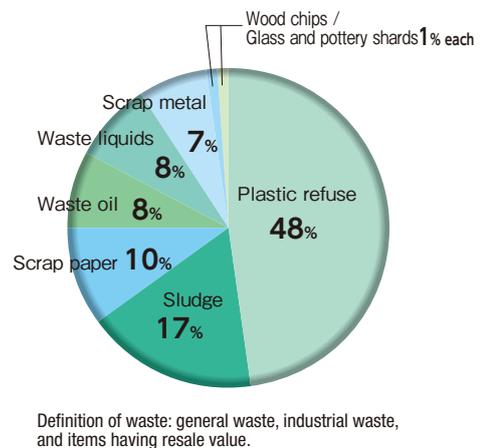
Results of Reducing Waste

The amount of waste generated in fiscal 2016 by the entire group increased to 20,700 tons from 20,200 tons in fiscal 2015. This increase was caused by an increase in production volume and other factors (see G1). The waste (including valuables) mainly consists of waste plastic, sludge, and paper scraps (see G2). The final amount of waste disposed of inside Japan decreased to 6 tons from 18 tons in fiscal 2015. The waste recycling rate, which we aim to improve in the medium term, was 99.9%, which was increased from 99.8% (see G3). The total amount of waste disposed of outside Japan was 1,700 tons, the same level as in fiscal 2015 (see G4). Improvement in waste generation per unit of production, which we aim to achieve as a medium-term environmental goal, was 7.4% in fiscal 2016 (see G5). The final amount of waste disposed of per unit of production was improved by 36.2% in fiscal 2016 alone (see G6). We will continue working to reduce waste volumes, boost in-house recycling rates, and recycle waste into resources at our overseas sites.

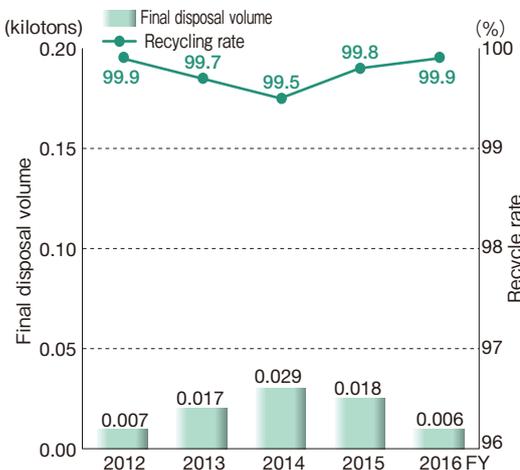
G1: Amount of Waste Generation



G2: Breakdown of Waste



G3: Domestic Final Disposal Volumes and Recycling Rates



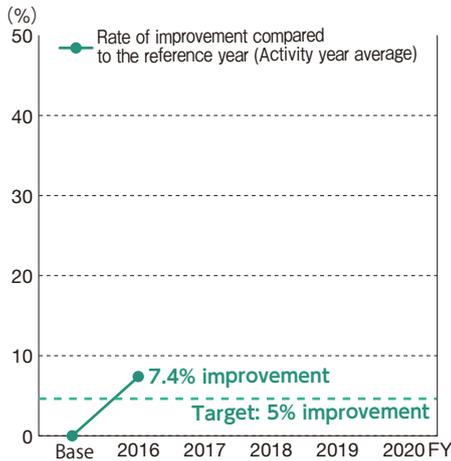
G4: Overseas Final Disposal Volumes and Recycling Rates



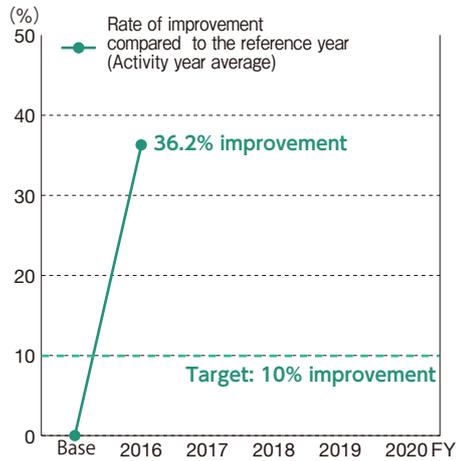
Reducing Waste / Preserving Water Resources 2-2

Results of Reducing Waste

G5: Average Waste Generation Per Unit (results compared to target)



G6: Average Final Disposal Volume Per Unit (results compared to target)



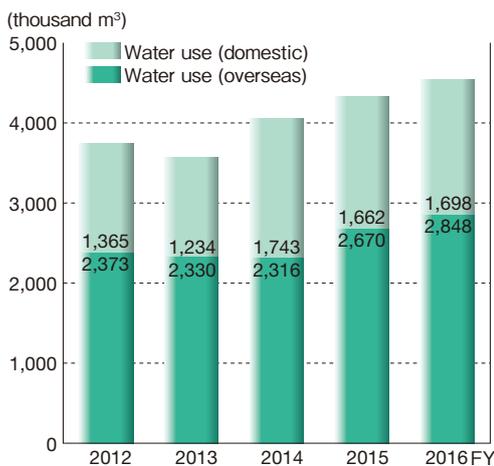
Results of Water Resource Efforts

The water usage of the entire group in fiscal 2016 increased to 4,546,000 m³ from 4,332,000 m³ in fiscal 2015. Specifically, the sites inside Japan increased their usage to 1,698,000 m³ from 1,662,000 m³ in fiscal 2015 and the sites outside Japan, to 2,848,000 m³ from 2,670,000 m³ in fiscal 2015 (see G7).

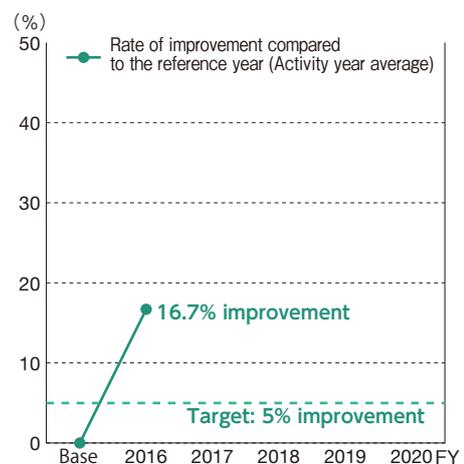
Improvement in water usage per unit of production, which we aim to achieve as a medium-term environmental goal, was 16.7% in fiscal 2016 (see G8).

The amount of recycled water was 492,000 m³.

G7: Water Use



G8: Average Water Use Per Unit (results compared to target)



Our Efforts

13

Reducing Greenhouse Gas Emissions

Improved compressor operation efficiency [TAIYO YUDEN CHEMICAL TECHNOLOGY]

We run more than one compressor to supply compressed air to production lines. The usage of compressed air depends on the operation status of each production line. To control the operation of compressors according to the required amount of compressed air, TAIYO YUDEN CHEMICAL TECHNOLOGY modified the system by introducing equipment such as a control board for controlling the number of compressors. This improvement has resulted in optimal operation of compressors, eliminating unnecessary electricity consumption. TAIYO YUDEN CHEMICAL TECHNOLOGY reduced GHG emissions 150 tons-CO₂e/year.



Compressors to supply compressed air

Power saving through a shift to LED lights [KOREA KYONG NAM TAIYO YUDEN and TAIYO YUDEN Mobile Technology]

KOREA KYONG NAM TAIYO YUDEN has replaced 265 mercury lamps installed in the wastewater treatment plant with LED lights and TAIYO YUDEN Mobile Technology did the same for 7,143 fluorescent lamps. Compared with mercury lamps, LED lights consume a very small amount of power, leading to reduced CO₂ emissions. They reduced GHG emissions by 400 tons-CO₂e/year.



Shift from mercury lamps to LED lights

Introduction of a solar power generation system [FUKUSHIMA TAIYO YUDEN and TAIYO YUDEN Mobile Technology]

FUKUSHIMA TAIYO YUDEN and TAIYO YUDEN Mobile Technology have introduced a solar power generation system, which is based on solar energy—a renewable energy. With a power generation capacity of 3,900 kW/month, FUKUSHIMA TAIYO YUDEN has reduced GHG emissions by 27 tons-CO₂e a year. TAIYO YUDEN Mobile Technology, with a power generation capacity of 18,000 kW/month, has reduced GHG emissions by 123 tons-CO₂e a year. Both companies use the power generated with this system.



TAIYO YUDEN MOBILE TECHNOLOGY CO., LTD.



FUKUSHIMA TAIYO YUDEN CO., LTD

Reducing Water Use

Water usage reduction based on inverter control [KOREA KYONG NAM TAIYO YUDEN]

KOREA KYONG NAM TAIYO YUDEN has introduced inverters to control the RPM of pumps that supply the water used in all facilities in the factory, including infrastructure and welfare facilities. This has enabled the company to make adjustments to achieve optimal flow rates and pressures, reducing its water usage. It has reduced water usage by 2,300 tons/year.



Control panel for water pressure



Inverter control board

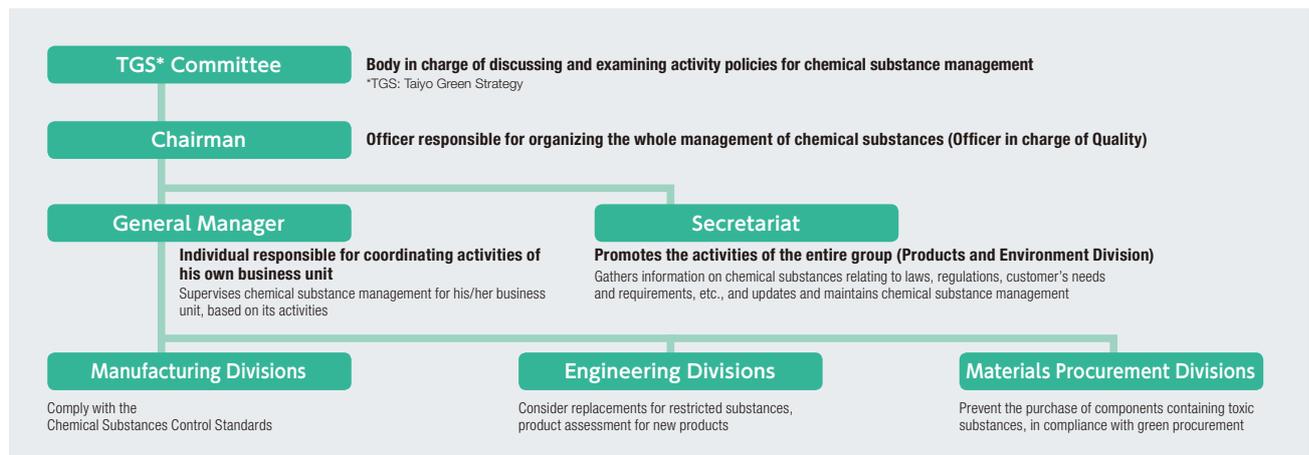
Appropriate Management of Chemical Substances

14

To ward off environment contamination with chemicals and adverse effects on human health, we have banned the use of forbidden substances, implemented a chemical management framework, and are working on reducing emission volumes.

Chemical Management Framework

The TAIYO YUDEN Group has its own standards in place for chemical substance management, which define chemical substances that must not be used, must only be used in limited situations, and must be managed.



Target Chemicals

Prohibited substances	Cadmium, compounds containing cadmium, mercury, compounds containing mercury, hexavalent chromium compounds, etc.
Substances to be restricted	Lead in ceramic/glass frit and piezoelectric bodies, tetrabromobisphenol A (TBBPA), polycyclic aromatic hydrocarbons (PAHs), and so on.
Substances to be managed	Toluene, REACH SVHC (substance of very high concern), xylene, etc.

PRTR Law Compliance

In order to reduce the risks that chemicals impose on the environment, the Taiyo Yuden Group reports to the government the amounts of chemicals released to the environment (air, water, and soil), and waste chemicals transported and recycled under the Japanese Law for Pollutant Release and Transfer Register (PRTR). The government publishes the records and a database of these quantities making them widely available to members of the general public.

PRTR Restricted Substances

Substance Number	Chemical Substance Name	Emission (ton/year)	Amount Transferred (ton/year)	Amount Recycled (ton/year)	Substance Number	Chemical Substance Name	Emission (ton/year)	Amount Transferred (ton/year)	Amount Recycled (ton/year)
71	Ferric chloride	0.0	25.0	0.0	308	Nickel	0.2	0.8	49.7
82	Silver and its water-soluble compounds	0.0	2.3	5.1	309	Nickel compounds	0.6	4.9	13.0
87	Chromium and trivalent chromium compounds	0.0	0.3	0.1	405	Boron compound	0.5	0.6	0.0
272	Water-soluble copper salt	0.0	0.3	0.2	438	Methylnaphthalene	0.1	0.0	0.0
300	Toluene	18.3	0.0	34.4					

Note: Target chemical substances and their incoming amount shown refer to substances for which their incoming amount exceeds 1 ton in compliance with the PRTR Law.

Emission: This refers to the total emission into the atmosphere, water, and soil.

Amount Transferred: This refers to the amount whose disposal is outsourced to an industrial waste contractor outside the business facility concerned.

Ozone-depleting Substances

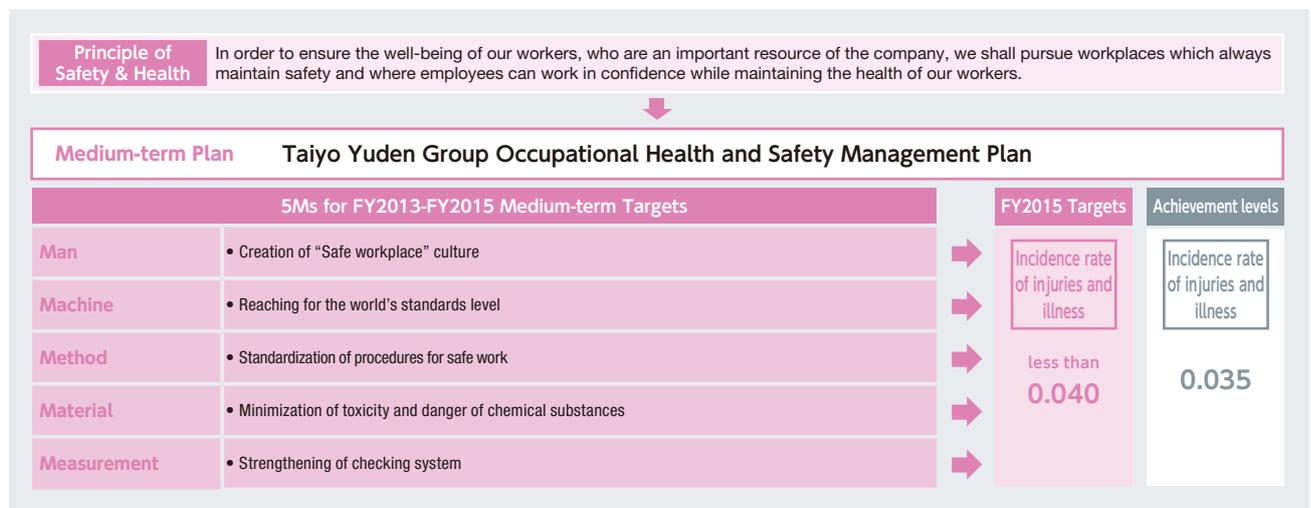
We do not use ozone-depleting substances in our production processes. Although we use HCFC as a coolant in air conditioners and other equipment, we carry out appropriate collection and disposal.

Achievement Levels for Medium-Term Occupational Health and Safety Targets

All employees participate in health and safety efforts based on the Fundamental Principle of Safety and Health outlined in the Taiyo Yuden Group Safety and Environment Charter and implemented according to OHSAS18001 specifications.

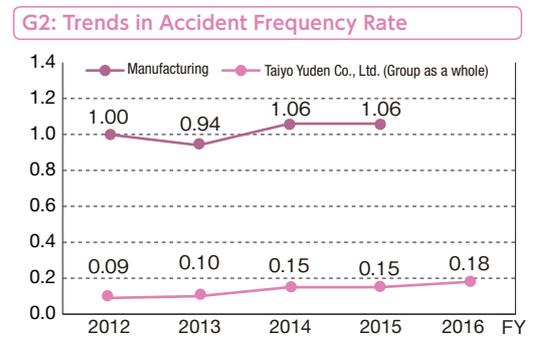
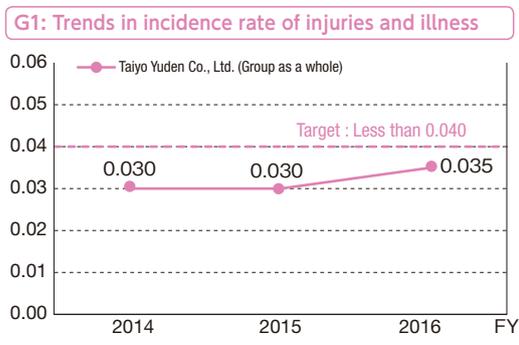
Fundamental Principle of Safety & Health and Targets

In order to realize our health and safety philosophy of “creating a workplace where employees can work without anxiety,” the Taiyo Yuden Group has drawn up group-wide medium-term plans. The medium-term plan is set to prevent industrial accidents by clarifying action targets for each 5Ms (Man, Machine, Method, Material, Measurement) and by setting a target incidence rate of injuries and illness for numerically evaluating the result of such efforts.



FY2016 Work-related Accidents and Safety Indicators

In FY2016, the medium-term target regarding the incidence rate of injuries and illness for the entire Group was less than 0.040, and we were able to achieve this by resulting in 0.035 (see G1). In FY2016, the accident frequency rate for the entire Group was 0.18 (see G2), and the danger ratio was 0.0022. We are promoting countermeasures for occupational accidents and occupational disease by conducting risk assessments in all workplaces. We found no workplace with high-risks. We will continue to work on activities geared toward zero work-related accidents in terms of 5Ms based on the medium-term health and safety plan for the future.



<p>Incidence rate of injuries and illness</p> $= \frac{\left(\text{Number of the absentees due to industrial accident (at least one workday lost)} \right) + \left(\text{Number of the absentees due to occupational injury (at least one workday lost)} \right)}{\text{Total actual number of hours worked by registered workers}} \times 200,000$	<p>Accident Frequency Rate</p> $= \frac{\text{Number of the victims of industrial accident (at least one workday lost)}}{\text{Total actual number of hours worked by registered workers}} \times 1,000,000$
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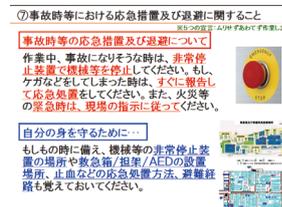
Efforts and Status 2-1

16

Man

Creation of "Safe workplace" culture

To create a safe worksite culture, we are carrying out activities that help employees increase their knowledge about safety and health and behave based on that knowledge with safety and health always borne in mind. In fiscal 2016, in-house experts on safety and health played a leading role in reviewing the training materials for employees reassigned to different business units. Reassigned employees are not familiar with their workplaces, so before starting to train them, we included information in the training materials that helps them enhance their sensitivity to risks and the safety rules that should be followed to prevent them from encountering accidents. We will continue to provide training programs to create a safe workplace culture.



Training material for employees reassigned to different business units

Machine

Global standardization of equipment safety activities (ISO and IEC)

With the objective of globally standardizing equipment safety activities (as ISO and IEC), we are reviewing the Safety Standards for Group Equipment, which define measures against risks common to production equipment to enhance the safety measures for equipment. In fiscal 2016, experts (qualified safety assessors and sub-assessors) in equipment safety played a leading role in modifying the standards defined based on domestic guidelines to make them standards that satisfy important requirements defined in international standards and we trained all employees involved in design and fabrication of equipment.

We will continue to refine the standards to increase the level of the safety measures for equipment.



Training of safety standards for equipment

Method

Standardization of procedures for safe work

We are upgrading and reviewing procedures to standardize consistent safe work procedures for employees to work more safely.

The TAIYO YUDEN Group has in place Lockout and Tagout Standards, group standards for securing safety in operating and maintaining facilities and equipment. However, since the specifications of the facilities and equipment and the methods for operating and maintaining them are different for each workplace, it was difficult to secure safety only by using standards.

Given these circumstances, in fiscal 2016, we developed work procedures that allow consistent lockout and tagout even if the specifications of the facilities and equipment and the operation and maintenance methods for them are different and we used these procedures to secure safety.

We will continue to standardize safe work procedures to achieve consistency to ensure that employees can work more safely.



Example of lockout and tagout

Material

Minimization of the harmfulness and danger of chemical substances

To minimize the harmfulness and danger of chemical substances, we are continuously taking measures against risks associated with tasks that require workers to handle chemical substances. In the past, we assessed risks associated with chemical substances in the same manner as for operations and equipment. In fiscal 2016, however, we revised the standards for risk assessment to introduce techniques specific to chemical substances. This has enabled us to assess risks with consideration given to the harmfulness and dangers specific to each chemical substance and hence take appropriate measures according to assessment results.

We will continue to work toward minimizing the harmfulness and danger of chemical substances.

Measurement

Enhancement of check levels

To provide safe, sanitary workplaces, we are working to make higher check levels by upgrading and improving the means and methods for identifying invisible hazards (or those that have gone unnoticed).

In fiscal 2016, we studied and analyzed advanced efforts being made in the electric and electronics industry and by our customers to identify potential dangers that had not been recognized and listed them as points to be checked. We used this list as a list for self-checks at sites and in audits.

This has identified dangers for which measures need to be taken and we have already done so, resulting in a higher workplace safety level.

We will continue to make efforts to enhance the level of checks to provide safe, sanitary workplaces.

Efforts and Status 2-2

Health

① Maintaining low incidence ratio for mental health problems

It has been over ten years since the group introduced a mental healthcare program. During this period, our mental healthcare system has advanced through support activities such as counseling, line care training, support for leaves of absence and returning to work, and stress checks using a Web system.

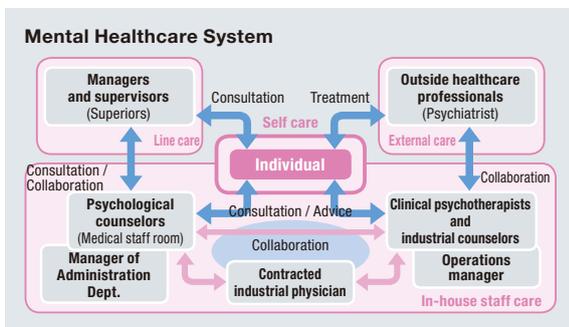
In fiscal 2016, we continuously held line-care courses with the objective of providing basic knowledge about mental health and preventing harassment as well as carried out activities for analyzing and improving workplaces in association with the enactment of legislation about stress checks.

To care for the staff, we have established a system that allows the industrial health staff, including counselors, hygienists, and nurses, to provide added care so that they can notice employees in a bad condition earlier and provide them appropriate support. In addition, we invite partner psychiatrists, industrial physicians, and clinical psychologists as lecturers to provide the industrial health staff with training sessions about mental health toward building a more substantial care system.

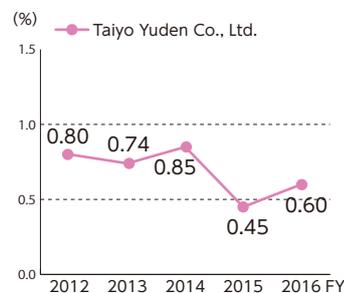
In fiscal 2016, the ratio of employees who suffered from an illness was 0.60%, which was slightly higher than that in the previous year, but is still low. The reason we are able to maintain this ratio at such a low level is probably because the industrial health staff members are working with each department to support employees returning to work who were on leave and to prevent diseases from recurring. We will continue to work on mental health care so that all employees can work comfortably.



Study meeting of the industrial healthcare staff



G1 : Incidence Rate



② Keeping down abnormal checkup findings

In TAIYO YUDEN GROUP, industrial physicians, nurses, and public health nurses provide health guidance to help each employee improve their ability to care for their health. So far, we have provided three types of guidance: (1) exercise guidance, (2) health guidance, and (3) nutritional guidance.

The ratio of employees with any kind of finding is 51.5%, which is slightly lower than the national average of 53.6%. In fiscal 2016, to improve or at least maintain this situation, we held lifestyle measurement meetings in more sites, which we had started in the previous fiscal year. In addition, after naming the activities for enhancing fitness (TYHP 21: TAIYO YUDEN G Health Plan 21), we developed goals and plans under the slogan of “Review and change your lifestyle with higher health consciousness” and started activities such as holding seminars for building health and quitting smoking.

We will continue to promote healthcare activities so that our employees can work in good health.



Seminar for building health



Seminar for quitting smoking