



Global Environment Conservation

The SWS Group recognizes its significant impact on the environment and will continue working toward realizing a sustainable society in harmony with the environment by operating clean factories that contribute to a brighter future.



Nguyen thi Hue
Assistant Manager, Safety & Environment Group, General Affairs Department, Sumidensu Vietnam Co., Ltd. (SDVN) (Vietnam)

Aiming to Successfully Balance Environmental Conservation and Economic Development

I have been in charge of the safety and environment business at SDVN for the past 12 years. In recent years, Vietnam has made remarkable economic progress; however, the country is now faced with serious issues related to environmental consequences. Under these circumstances we are working together to save energy and resources and also placing priority on environmental protection training for stakeholders. Through the activities for raising the environmental awareness of our employees and by collaboratively working with those who are in charge of environment management at each SWS Group company in Vietnam, I'd like to contribute to the growth of our company.

Environmental Management

Environmental Preservation Principles

Basic Principles

The SWS Group shall implement business activities to create an affluent society with full consideration for environmental preservation.

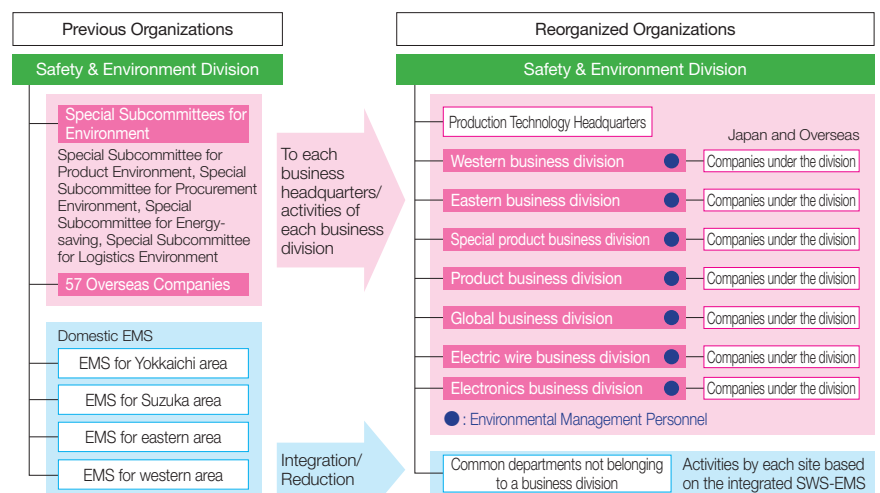
Environmental Preservation Action Guidelines

- 1 Make efforts to develop and improve eco-technology (also known as "green engineering") in every field of product planning, development, design, manufacturing methods, production, logistics, usage and disposal aiming at product manufacturing, with consideration given to influence on ecosystems and protection of resources.
- 2 Determine self-imposed restraints to reduce impact on the environment, in addition to observing environmental regulations by the government, local public bodies and other organizations.
- 3 Conduct an environmental audit to check the progress of environmental preservation plans and job performance levels in order to maintain and improve the level of environmental management.
- 4 Improve environmental awareness in the SWS Group, including overseas sites, and promote environmental preservation activities through communication with local communities.

» Environmental Management System

In Japan, we will review our four-area environmental management system (EMS) and respond to the ISO 14001 2015 revised edition. This system has been reorganized from one centered on an environmental subcommittee, overseas companies and four domestic areas into one led by business departments and where each department assigns its environmental management officer. We will also ensure coordination with overseas companies to establish an internal audit system based on the international environmental standard. The entire SWS Group will make concerted efforts toward its implementation from fiscal 2017.

» Environmental Management System Chart



» SWS Group Environmental Action Plan

The SWS Group has sought to cultivate stronger relationships with the global community toward reducing environmental impact at every stage of the product life cycle, from development to disposal. In fiscal 2013, we introduced the Action ECO-21 campaign of Sumitomo Electric Industries, Ltd. to implement environmentally sound activities through our business. The campaign entered Phase VI in fiscal 2015.

» Action ECO-21: Fiscal 2016 Targets and Results, and Fiscal 2017 Targets

○: Target met △: Target unmet (improved from previous year) ×: Target unmet (declined from previous year)

Action ECO-21 Phase VI Targets (FY2015–2017, base year: FY2012)		FY2016			FY2017 (last year of Phase VI)
		Targets	Results	Evaluation	Targets
Prevention of global warming (CO ₂ reduction)	Save energy globally (reduce consumption per unit of sales* ¹)	Reduce by 16%	Reduced by 11.1%	×	Reduce by 20%
	Save energy in offices (reduce consumption per unit of floor area* ²)	Reduce by 4%	Increased 3.5%	×	Reduce by 5%
	Reduce CO ₂ emissions from logistics per unit of sales (in Japan)	Reduce by 4%	Reduced by 15.5%	○	Reduce by 5%
Promotion of resource saving and recycling	Promote zero emissions* ³ (in Japan)	0.3% or less	0.01%	○	0.3% or less
	Reduce absolute volume of waste (in Japan)* ⁴	Reduce by 4%	Reduced by 4.3%	○	Reduce by 5%
	Promote zero emissions (overseas)	9% or less	9.2%	×	9% or less* ⁷
	Reduce water use per unit of sales* ⁵ (in Japan and overseas)	Reduce by 4%	Reduced by 8.9%	△	Reduce by 5%
Expansion of environmentally sound product range	“Eco Mind” registration ratio for new products	Register 100% of new products	66%	△	Register 100% of new products
	Increase ratio of environmentally sound products* ⁶ in sales	84% or more	80%	△	90% or more

*1 Consumption per unit of sales = Crude oil equivalent of energy use / sales

*2 Consumption per unit of floor area = Crude oil equivalent of energy use / floor area

*3 Zero emission rate = (landfill + incineration) / Volume of waste (including valuable resources)

*4 Waste (excluding valuable resources)

*5 Consumption per unit of sales = Water use / sales

*6 Environmentally sound products certified under the Eco Symbol Program of Sumitomo Electric Industries are also identified as “Eco-products.”

*7 Changed along with the new target for Sumitomo Electric Industries (5% or less → 9% or less)

» Material Balance (in Japan)

INPUT		OUTPUT	
Energy		Air	
Purchased electricity	172 GWh	CO ₂ emissions	95,000 t-CO ₂
City gas	215,000 m ³	SF ₆ * emissions (CO ₂ equivalent)	200 t-CO ₂
LPG	444 t	PRTR-regulated substances	1.7 t
Heavy oil A	172 kl	Effluents	
Kerosene oil	314 kl	Effluents	740,000 m ³
Water		PRTR-regulated substances	0.1 t
Water	740,000 m ³	Disposal	
Water supply	231,000 m ³	Wastes (exclude valuable resources)	1,500 t
Well water	317,000 m ³	Material recycling	400 t
Industrial water	191,000 m ³	Thermal recovery	1,100 t
Raw Materials		Landfill + incineration	1 t
Copper, aluminum	29,000 t	PRTR-regulated substances	2,700 t
Resins	31,000 t	Recycling	
Chemicals		Valuable resources (including copper, copper alloys)	17,000 t
PRTR-regulated substances	18.1 t	PRTR-regulated substances	600 t



Production



Recycling

* Sulfur hexafluoride

Prevention of Global Warming

» SWS Group Greenhouse Gas Emissions (in Japan and Overseas)

The SWS Group acknowledges the urgency of taking action to prevent global warming and is moving forward in a concerted effort to establish clean factories. In fiscal 2016, overall Group greenhouse gas emissions were 392,000 tonnes.

» Reduction in Per Unit Energy through Energy Saving (Manufacturing Companies in Japan and Overseas)

FY2016 target 16% reduction per unit sales from FY2012

FY2016 result 11.1% reduction per unit sales from FY2012

Consumption of per unit energy at our manufacturing companies in Japan fell 11.1% from fiscal 2012 as a result of energy saving, thereby meeting the target. In November of fiscal 2016, we launched an air leakage countermeasure project for molding machines at the Tsu Plant. We also globally distributed our second edition of "the collection of energy-saving case studies," which contains our investigations on overseas cases. For overseas sites, we implemented energy-saving self-inspections and formulated action plans to save energy.



» Reduction in Per Unit Energy through Energy Saving (Offices in Japan)

FY2016 target 4% reduction per floor area from FY2012

FY2016 result 3.5% reduction per floor area from FY2012

The target sites were the head office (operations began in May 2013) and several buildings of the Yokkaichi Plant. Consumption of per unit energy at our offices in Japan increased 3.5% from fiscal 2012, falling short of our target. We will continue to make efforts to achieve our targets through analyzing the current situation and implementing countermeasures.

» Reduction of CO₂ Emissions from Logistics (in Japan)

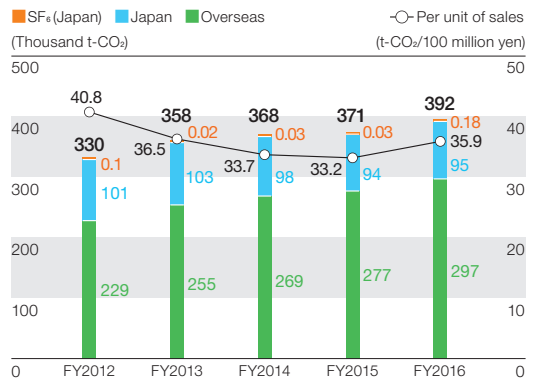
FY2016 target 4% reduction per unit sales from FY2012

FY2016 result 15.5% reduction per unit sales from FY2012

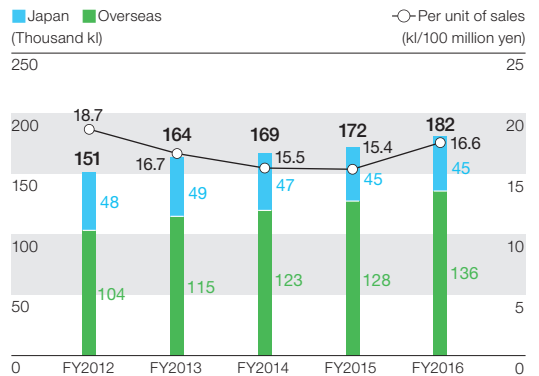
Emissions of CO₂ from logistics in Japan were reduced by 15.5% per unit of sales from fiscal 2012, thereby meeting the target.

We shortened the transportation distance by changing the shipping base from Yokkaichi to Yamato for automobile sales in Kanto and improved the Yamagata route from Yamagata to Yokkaichi. Also, we successfully implemented numerous modal shift initiatives, and we switched to ferry transportation between Yokkaichi and Marukawa.

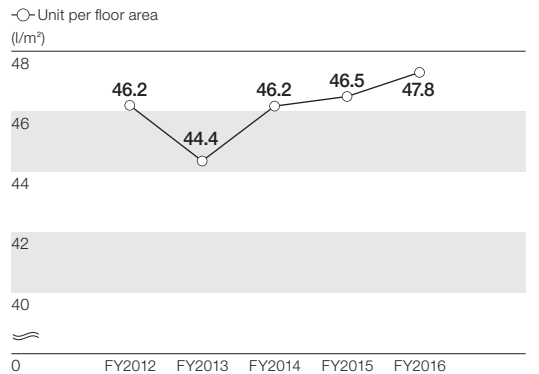
» Greenhouse Gas Emissions in Japan and Overseas



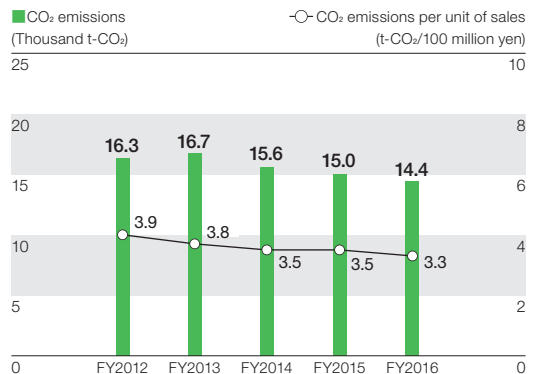
» Per Unit Energy through Energy Saving (Manufacturing Companies in Japan and Overseas)



» Per Unit Energy through Energy Saving (Offices in Japan)



» CO₂ Emissions from Logistics (in Japan)



Resource Recycling and Control and Reduction of Substances of Concern

» Reduction of Waste (in Japan)

FY2016 target Zero emission rate: below **0.3%**
Absolute volume of waste: **4%** reduction from FY2012

FY2016 result Zero emission rate: below **0.01%**
Absolute volume of waste: **4.3%** reduction from FY2012

To ensure the effective use of resources, we strive for zero emissions (no landfill waste) at all sites. In fiscal 2015 the zero emission rate was 0.01%, thereby meeting the target. We reduced the amount of waste (excluding valuable resources) through various approaches such as by using resin containing metal as a valuable resource and beginning to operate equipment for reducing the volume of wire drawing lubricant, and we achieved our target for absolute volume of waste.

» Promotion of Zero Emissions (Overseas)

FY2016 target Zero emission rate: below **9%**

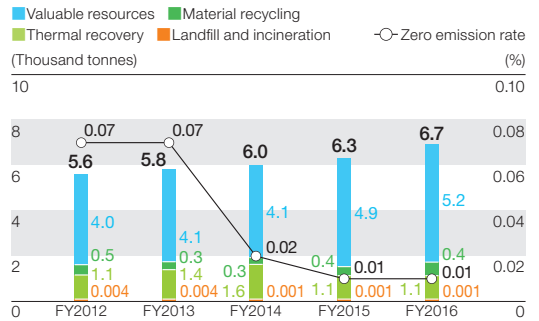
FY2016 result Zero emission rate: **9.2%**

Our overseas zero emission rate fell slightly short of the target despite efforts by each company, including the use of waste as a valuable resource and recycling. We will work to improve our zero emission rate through such initiatives as rolling out successful examples and the details of activities suitable for each region.

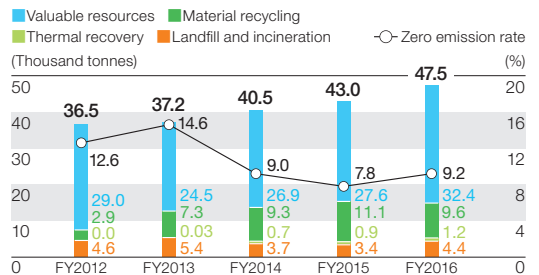
» Control and Reduction of Substances of Concern

With the intention of strengthening the management of substances of concern, we adopted the system of the Sumitomo Electric Industries Group. For our Group companies in Japan, the transaction amount of PRTR-regulated substances were reduced by 9% compared to the previous year. Substances subject to mandatory reporting included antimony and its compounds, methylnaphthalene and xylene. Moreover, in compliance with the Law Concerning Special Measures against PCB Waste, the SWS Group stores PCB-containing devices, provides the required notifications and follows through with disposal.

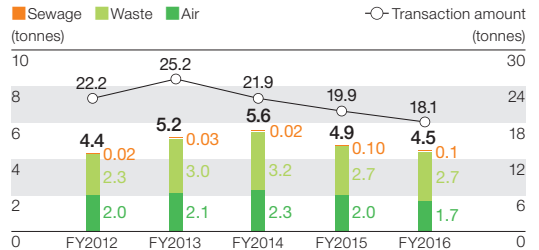
» Volume of Waste Disposed in Japan (Includes Valuable Resources)



» Volume of Waste Disposed Overseas (Includes Valuable Resources) PRTR-regulated Substances by Year (in Japan)



» PRTR-regulated Substances by Year (in Japan)



Environmentally Sound Products

The SWS Group launched the Eco Symbol Mark Certification System (environmentally sound product certification system) in compliance with ISO 14021 in May 2005 as a means for contributing to global environmental preservation through its products. A total of 54 products have been certified as of the end of fiscal 2016. The Eco Symbol Mark Certification Committee, chaired by the Corporate Environmental Management Officer, is responsible for the certification. In fiscal 2016, the ratio of certified products to sales was 80%, falling short of our target of 84%. When developing new products or undertaking major design changes, we conduct environmental assessments and register the products as Eco Mind Products. While the registration rate is currently at 66%, our goal is to raise the coverage to 100%. In addition, we recognize environmentally sound products that contribute to society, particularly by reducing CO₂ emissions, as Anti-Global Warming Products of the Sumitomo Electric Industries Group and calculate their contribution to reducing CO₂. In fiscal 2016 these products resulted in a 12,800 t-CO₂ reduction of CO₂ emissions. To boost the sales ratio of environmentally sound products as well as the registration rate of Eco Mind Products, we will continue to focus our efforts on environmental protection through our products.

» Products Certified as Environmentally Sound in Fiscal 2016

