# **Initiatives for the Environment**

The Furukawa Electric Group is striving to reduce its environmental impact throughout the product lifecycle.





# **Basic Environmental Policy**

The Furukawa Electric Group established its basic environmental philosophy and action guidelines to unite environmental action across the Group.

#### **Basic Philosophy**

The Furukawa Electric Group recognizes that the preservation of the global environment is a critical issue for society and takes the environment into consideration in every aspect of its corporate activities to help create a sustainable, happy and prosperous society.

#### **Action Guidelines**

- We shall maintain a constant awareness of the impact of our corporate activities on the environment, with each and every employee involved in environmental preservation activities.
- In addition to complying with environmental laws and regulations and with requirements from our customers and other sources, we shall also set out voluntary standards to establish greater levels of control.
- We shall set out environmental targets and objectives and systematically carry out activities accordingly to continuously improve our efforts to protect the environment.
- Environmental concerns shall be taken into consideration at every phase of our work, from the R&D and design stages onwards, to supply environmentally sound products.
- We shall strive to reduce consumption of resources and energy, to promote recycling, to reduce waste and to minimize environmental impact at every stage of our activities, from procurement and manufacturing to distribution and customer service.
- We shall conduct environmental audits and review our environmental management system and environmental preservation activities to make continuous improvements.
- We shall raise employee awareness through environmental education.
- We shall promote the disclosure of information and communication with the public and play an active part in community activities.

### List of companies participating in the liaison meeting for consolidated environmental management

Company name	Environmental accounting	Company name	Environmental accounting	Company name	Environmental accounting
Access Cable Company	<b>✓</b>	Shodensha Co., Ltd.	✓	Furukawa Precision Engineering Co., Ltd.	
Asahi Electric Works Co., Ltd.	<b>✓</b>	Seiwa Giken Inc.	✓	Furukawa Techno Material Co., Ltd.	<b>✓</b>
Inoue Manufacturing Co., Ltd	<b>√</b>	Totoku Electric Co., Ltd.	✓	Furukawa Electric Advanced Engineering Service Co., Ltd.	
NTEC Ltd.	✓	FITEC Corporation		Furukawa Electric Industrial Cable Co., Ltd.	✓
FCM Co., Ltd.		Furukawa Automotive Systems Inc.		The Furukawa Battery Co. Ltd.	<b>✓</b>
Okano Electric Wire Co., Ltd.		Furukawa Sangyo Kaisha Ltd.		Furukawa Logistics Corporation	
Okumura Metals Co., Ltd.	✓	Furukawa C&B Co., Ltd.		Furukawa Life Service Inc.	
Kyowa Electric Wire Co., Ltd.		Furukawa Industrial Plastics Co., Ltd.	<b>✓</b>	Miharu Communications Inc.	<b>✓</b>
Furukawa Electric Ecotec Co., Ltd.		Furukawa-Sky Aluminum Corporation	<b>✓</b>	Riken Electric Wire Co., Ltd.	

Companies marked with "
" in the Environmental Accounting column implement environmental accounting.

<sup>\*1</sup> Furukawa Circuit Foil Co., Ltd. became the Copper Foil Division of the Metals Company of Furukawa Electric Co., Ltd. in October 2008.

<sup>\*2</sup> F-CO Co., Ltd. became the F-CO Products Department of the Energy and Industrial Products Division of Furukawa Electric Co., Ltd. in April 2009.

<sup>\*3</sup> Furukawa Electric Engineering Service Co., Ltd. merged with FI-Techno Co., Ltd. and became Furukawa Electric Advanced Engineering Service Co., Ltd. in April 2009.

<sup>\*4</sup> Furukawa Engineering & Construction Inc. was merged with Fuji Furukawa Engineering & Construction Co., Ltd. in October 2009.



## **Environmental Management**

The Furukawa Electric Group has developed a system of centralized control for Group-wide environmental activities based on the Furukawa Electric Group Basic Environmental Policy.

## **Environmental Management Promotion Organization**

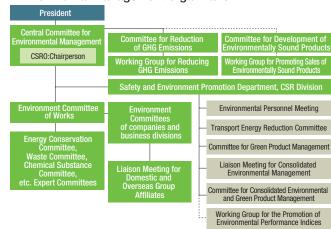


The Furukawa Electric Group has established the Central Committee for Environmental Management. This committee formulates the environmental management targets for the entire Group and conducts quarterly follow-ups on the status of implementation.

The Company adopted the life cycle assessment (LCA) method as an initiative to "visualize the amount of CO2 emitted throughout the lifecycle of its products" from fiscal 2009. The Working Group for the Promotion of Environmental Performance Indices was then newly established to develop indices that measure the environmental contribution of products across their entire lifecycle from raw material procurement through manufacture to disposal. This working group was reorganized as the Central Committee for Environmental Management, with plans to operate and manage established index policies and guidelines. The Company's seven works and domestic affiliates participating in consolidated environmental management have obtained

ISO 14001 certification. We are also promoting environmental management and initiatives at our overseas affiliates as part of the related activities undertaken by each business division.

### Environmental management organization



### **Environmental Education**



In fiscal 2009, the Company held two ISO 14001-related internal environmental auditor training sessions attended by 39 participants. In addition, 18 employees took part in FGMS\*

training seminars.

\* FGMS is the acronym for the Furukawa branding Green product Management System.

## Environmental education program

Category of educational training	Content	New recruits	General employees	Mid-career employees	Management
Education for new recruits (once a year, mandatory)	General environmental protection activities	Training for new recruits			
EMS activities (as needed, mandatory)	Environmental Policy and purpose, goals and general knowledge pertaining to the environment	$\longleftrightarrow$	<del></del>		<del></del>
ISO 14001-related education (two-day course) (twice a year, voluntary)	Requirements of ISO standards, environmental regulations, procedures for internal environmental audits, various drills		<del></del>		<del></del>
One-day brush-up course (once a year, mandatory)	One-day brush-up course (once a year, mandatory)  Trends in environmental regulations, various drills to brush up auditing skills		<del>-</del>	<del></del>	
	Environmentally sound design		<del></del>	$\longrightarrow$	
Environmental subjects (as needed, voluntary)	Environmental regulations		<del></del>		$\longrightarrow$
	Control of chemical substances contained in products		-		$\longrightarrow$
Consolidated environmental management seminars	Seminars by experts on priority issues				$\longleftrightarrow$

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### Participation in the Challenge 25 Campaign

Promoted by Japan's Ministry of the Environment, Team Minus 6%, a national movement aimed at preventing global warming was recast as the Challenge 25 Campaign. Furukawa Electric re-launched its activities on April 1, 2010 under the revised Challenge 25 name. Encouraged by the keywords "universal"

practice," the Company is proposing low CO<sub>2</sub> emission lifestyles both at home and in the office. Through such measures as the provision of Challenge 25-related policy data, Furukawa Electric is committed to further boosting its in-house campaign.



## **Environmental Management**

## **Initiating Biodiversity Measures**

## Participation in the Japan Business Initiative for Conservation and Sustainable Use of Biodiversity (JBIB)

Taking into consideration the tenth meeting of the Conference of the Parties (COP 10) held in Nagoya, Aichi Prefecture, in October, 2010 represents a most important year during which steps must be taken to review the level of achievement with respect to targets adopted at COP 6 in April 2002, and to deliberate on the setting of new targets in the post 2010 era.

Furukawa Electric joined JBIB\* as a network member from July 2009. While engaging in research and the collation of information relating to biodiversity activities, the Company's policy is to draw on the knowledge gained through its network as well as trends following the conclusion of COP 10 to proactively address the issue of biodiversity conservation.

\* JBIB, an organization comprised of Japan's leading private companies, is dedicated to the promotion of activities that facilitate biodiversity conservation. Engaged in joint research that takes into account international perspectives, JBIB draws on the results of studies to initiate dialogue with other companies and stakeholders in an effort to ensure a genuine contribution. Totaling 34 members as of May 2010, JBIB is attracting attention through its ability to ignite new momentum in biodiversity conservation.

## Seminars on Biodiversity Initiatives Held

To improve the skills of employees, a series of half-day seminars on biodiversity were held in fiscal 2009. The seminar was divided into two parts, beginning with an explanation on the basics of biodiversity by external experts followed by presentations focusing on group sessions. Drawing mainly from the EMS Office, a total of 24 employees from nine Group companies attended. Introduced as a new theme to group sessions, discussions were held on the relationship between and the impact of the Group's business activities on biodiversity. Participants commented that they were aware of biodiversity, but were unclear as to how and where it figures in their individual company activities. Participation in the seminar therefore served to highlight the importance of obtaining a proper understanding. The fruits of seminar discussions will be shared among as many employees as possible with plans to reflect relevant aspects in future business activities.







## Furukawa Electric Group Technology Exchange Meeting Held

Over a two-day period from June 11 to 12, 2009, the Furukawa Electric Group held its sixth Technology Exchange meeting at the Company's Yokohama Works. 198 Furukawa Electric and 155 affiliated company employees attended. The first day was taken up with several themes that transcend the Group including the use of simulation testing, analytical techniques, innovative technologies designed to curtail CO2 emissions and the application of intellectual property rights. which were discussed among small groups. Supplementing the day's activities, participants were asked to dismantle commercially sold environmental products and to assess each product from both the sales and development perspectives. The second day focused more on the sharing of initiatives and information relating to the environment and energy utilizing a seminar format. Each division and affiliated company also conducted presentations as well as exhibitions. During small group meetings, discussions among administrative departments within the Group were lively, The two-day event was also an excellent forum through which Group companies and divisions were able to deepen exchange.





Furukawa Electric Group technology exchange meeting



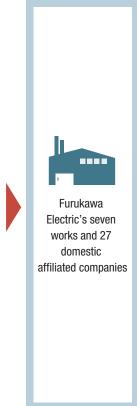
## **Material Flow**

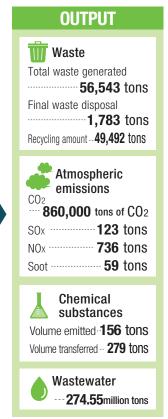
We purchase raw materials and chemical substances and use fuel and electricity energy as well as water resources to provide our products and services while endeavoring to reduce their environmental impact.

## **Environmental Impact of the Furukawa Electric Group**



#### **INPUT** Raw materials Energy(crude oil equivalent) Copper ---- **221,809** tons Gross energy input **504,464** kl Aluminum ----- 231,023 tons Electricity(purchased electricity) Iron ---- **5,231 tons 287,311** kl Nickel ..... **965** tons Electricity (hydroelectric power) Chromium ----- 168 tons ----- **38,256** kl Manganese .....1,446 tons Electricity(solar power) ----- 3 kl Magnesium ---- 5,249 tons City gas ---- 47,335 kl Other metals ..... 9,119 tons LPG ----- **54.501** kl Glass ---- 157 tons Heavy fuel oil A ----- 12,967 kl Plastic ---- **30,873 tons** Kerosene ----- 17,150 kl Light oil ----- **570** kl Chemical substances Water Volume handled\*---56,324 tons Tap water ----- 1.03 million tons Industrial water - 23.45 million tons Groundwater -- 3.49 million tons

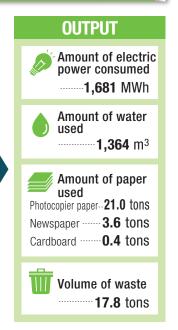




## **Environmental Impact of our Non-production Bases**

We have identified the environmental impact of activities at our non-production bases, namely Furukawa Electric's head office, six branch offices, three branches and one sales office. We promote power and resource saving measures at our head office and branch offices, the Company's non-production bases. Examples of such power saving measures include turning off lights in conference rooms not in use and adjusting air conditioning to appropriate temperatures. In terms of resource saving measures, we promote activities such as sorting waste and reusing resources such as photocopier paper and files.





<sup>\*</sup> PRTR targeted substances



## **Targets and Performance**

The Furukawa Electric Group sets medium-term targets every three years and also develops annual plans for promoting environmental protection efforts toward accomplishing the targets set out in these plans.

## Furukawa Electric Group Annual Targets and Performance for Fiscal 2009



The Furukawa Electric Group promotes its environmental protection activities by formulating Group-wide Environmental Preservation Activity Targets for fiscal 2009 based on medium-term targets laid out in the 2009 Medium-Term Plan for Environmental Preservation Activities. It applies them to environmental management systems at Furukawa Electric and affiliated companies.

Fiscal 2009 marked the final year of the Plan during which steps were taken to consolidate activities. On a non-consolidated basis, Furukawa Electric was unable to meet its established targets for waste reduction and zero emissions. From April 2010 the Company is redoubling its efforts to substantially reduce direct landfill disposal through recycling. Similarly, the Company did not achieve its greenhouse gas emission target due to the integration of businesses within the Group. The target for reduction in specific energy consumption for transportation on the other hand was met. While in overall terms the Company fell slightly short of its targets, every effort will be made to bolster activities to achieve newly established medium-term goals.

Affiliated companies did not quite reach their targets for waste reduction but successfully achieved established benchmarks for zero emissions and global warming prevention. Chlorinated organic compounds are still used at one company. Plans are place to totally eliminate its use during fiscal 2010.

#### Furukawa Electric Annual Targets and Performance for Fiscal 2009

Activities	Priority environmental preservation activity targets for fiscal 2009	Performance in fiscal 2009	Rating
Waste reduction activities	75% reduction in the volume of outsourced waste disposal compared with fiscal 2004 level 67% reduction		В
Zero emission activities	80% reduction in direct landfill disposal compared with fiscal 2004 level	67% reduction	В
	25% reduction in greenhouse gas emissions compared with fiscal 2000 level	21% reduction	В
Activities to prevent global warming	3% reduction in specific energy consumption for transportation compared with fiscal 2006 level	8% reduction	$A^{\scriptscriptstyle{+}}$
Chemical substance management activities	30% reduction in emissions of volatile organic compounds compared with fiscal 2004 level	45% reduction	$A^{+}$
Green activities	60 general-purpose green products—expansion target at affiliated companies: 5	52 products* (99.4%) Expanded to two companies	В
	Establishment of FGMS: regular audit for fiscal 2009	Audit scope: implemented at all eight works	Α
	Improvement in environmental performance of products		
Eco-design activities	Target for registration of environmentally sound products: 40	Target registration results: 36 of 40 (90%)	В
	Environmental performance indices for main products	Implemented LCA evaluation for four main products	А

#### Affiliated Group Company Annual Targets and Performance for Fiscal 2009

Activities	Priority environmental preservation activity targets for fiscal 2009	Performance in fiscal 2009	Rating
Waste reduction activities 50% reduction in the volume of outsourced waste disposal fiscal 2004 level		48% reduction	В
Zero emission activities	50% reduction in direct landfill disposal compared with fiscal 2004 level	61% reduction	A <sup>+</sup>
	10% reduction in greenhouse gas emissions compared with fiscal 2000 level	18% reduction	A <sup>+</sup>
Activities to prevent global warming	Specific energy consumption for transportation: ascertain current status	Status of specific energy consumption ascertained at 18 of 24 companies	В
Chemical substance management activities	30% reduction in emissions of volatile organic compounds compared with fiscal 2004 level	45% reduction	A <sup>+</sup>
onomical casciance management activates	Complete elimination of the use of chlorinated organic compounds	Use at one company	В
Green activities	100% procurement rate for 60 general purpose products	Achieved a 96.2% procurement rate for 52 items* subject to green procurement	В
dreen activities	Establishment of FGMS	Implementation completed at 26 company and nine supplier works	А
Eco-design activities	Improvement in environmental performance of products	e-Friendly mark registration of seven items	А

Evaluation ratings: A+: Greatly achieved A: Achieved B: Almost achieved -: Unachieved

<sup>\*</sup> Scope and evaluation limited to 52 items due to alleged issues relating to recycled wastepaper.

## Medium-Term Targets of the Furukawa Electric Group



Steps have been taken to unify the Group's targets under the 2012 Medium-Term Plan for Environmental Preservation Activities. While incorporating the additional theme of biodiversity, the Group has consolidated indices for the existing activity themes of zero emission and waste reduction. At the same time, a new recycling rate index has been established. The Furukawa Electric Group is unified in its commitment to achieving the targets of the Medium-Term Plan.

#### The Furukawa Electric Group's 2012 Medium-Term and 2010 Targets

Activities	2012 Medium-Term Plan for Environmental Preservation Activities	Environmental preservation activity targets for fiscal 2010
Waste reduction activities	99% or more recycling rate	95% or more recycling rate
	15% reduction in greenhouse gas emissions compared with fiscal 2000 level	13% reduction in greenhouse gas emissions compared with fiscal 2000 level
	5% reduction in energy consumption compared with fiscal 2007 level	3% reduction in energy consumption compared with fiscal 2007 level
Zero emission activities Activities to prevent global warming	1% reductions in specific energy consumption for production and transportation	1% reductions in specific energy consumption for production and transportation 4% reduction in specific energy consumption for transportation compared with fiscal 2006 level (Applicable to Furukawa Electric only. 1% reduction compared with fiscal 2009 level for the Group)
Chemical substance management activities	Optimal management of the quantity of chemical substances consumed	36% reduction in emissions of volatile organic compounds compared with fiscal 2004 level
Green activities	Expansion of general purpose green products	60 general-purpose products—expansion target at Group companies: 5
Eco-design activities  Increase in the development and sale of environmentally sound products Improvement in product environmental performance indices and increase in sales		Sales percentage of environmentally sound products: 20% or more (Applicable to Furukawa Electric only)
Biodiversity preservation	Formulation of guidelines and establishments of systems	Formulation of the Furukawa Electric Group policy Development of a Companywide activity system and formulation of guidelines

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## Response to the Revised Energy Conservation Law

In estimating the CO<sub>2</sub> emission equivalent of electricity consumed, the Furukawa Electric Group has historically applied a fixed emission factor value of 0.378kg CO<sub>2</sub>/ kWh. This is the nationwide fiscal 2000 average coefficient for Japan's 10 major utility companies. The rationale behind adopting a fixed value can be attributed to the difficulties involved in evaluating the energy conservation effects of the Group's activities. This reflects the impact of changes in utility company emissions factors when CO<sub>2</sub> emissions are calculated using factors for each utility company at each works.

However, with the revision to the Energy Conservation Law, the Company has decided to apply the emission factors of each utility company in line with the generally accepted evaluation practice. In formulating the 2012 Medium-Term Plan, we have reviewed CO<sub>2</sub> emission going back to fiscal 2000 using individual utility company emission factors for each year. On this basis, a 2012 Medium-Term Plan reduction target of 15% has been set compared with fiscal 2000 level.

#### CO<sub>2</sub> emission



- 1. The emission factors of each utility company have been used in the conversion of power consumption.
- 2. CO2 emissions attributable to hydroelectric power are identified as zero.
- 3. Group-wide hydroelectric power consumption totaled 148,700MWh in fiscal 2009 (12% of total power consumption).



# **Environmentally Sound Products**

The Furukawa Electric Group develops environmentally friendly products that help to reduce environmental impact while promoting their increased use through the e-Friendly accreditation system.

## e-Friendly Accreditation System

The criteria for an environmentally sound product is met when it offers an overall improvement from an environmental standpoint when compared with existing products and based on predetermined standards at each stage, from the purchasing of raw materials and components, manufacturing and use to distribution and disposal.

The e-Friendly mark has been introduced to indicate that a product is environmentally sound. The mark is displayed on external packaging and used as a sales promotional tool.

Targeting 40 or more items, Furukawa Electric registered 36 environmentally sound products on a non-consolidated basis in fiscal 2009. This represented an achievement rate of 90%.

Turning to the Group as whole, 40 items were registered for a cumulative total of 56 items.

Plans are in place to adopt an easier-to-understand index and to target an environmentally sound product to total sales ratio of 20% or more in fiscal 2010.



## Category of Environmentally Sound **Products**

The Furukawa Electric Group's environmentally sound products belong to one of four categories described below.

#### Environmentally sound product categories

Category	Content
Prevention of global warming	Products with functions that help in the reduction of emissions as well as the absorption and stabilizing of greenhouse gases
Zero emission	Products made from recycled materials, products designed with easy-to-recycle components, products made from materials or with design facilitating volume reduction for lowering waste volume, products designed to share common components with other products or products designed as common components.
Elimination materials that have an impact on the environment	Products that do not lead to an increase in the use of ozone- depletive substances during the manufacturing process, do not contain harmful substances above regulatory limits and do not generate harmful substances above these limits during use or disposal.
Energy savings	Products that result in overall energy savings by such means as reducing the use of raw materials and components as well as scarce resources, featuring enhanced longevity, allowing easier product and component maintenance, and reducing the use for resources in packaging.

## Application and Registration of **Environmentally Sound Products**



Following application and screening by the business division, products that pass the screening conducted by the Committee for Development of Environmentally Sound Products, a crossfunctional organization of the Furukawa Electric Group, are registered as environmentally sound products.

#### Registration process for environmentally sound products



### **Environmental Performance Index and LCA**



Furukawa Electric took steps to apply environmental performance indices to its products from fiscal 2009.

The environmental performance index quantifies product improvement against a standard model and expresses a product's environmental contribution by comparing its functional index (for example intensity etc.) and environmental impact (including CO<sub>2</sub> emissions) over its life cycle.

We will compile index guidelines and an evaluation system for 16 or more products for each business division in the current fiscal year. In fiscal 2011, we will formulate proprietary product category rules (PCRs), from the following fiscal year and beyond. In addition to their use as a management index and display on product catalogues, we will incorporate PCRs into the next medium-term plan as well as R&D activities.

#### List of products subject to LCA in fiscal 2010

Company business division	Products subject to PCRs		
Energy and Industrial Products Company	Green troughs     EFLEX     EFCELL     AT tapes		
Telecommunications Company	Optical cables • Fusion splicers Optical amplifiers • Optical delay devices Optical connectors Semiconductor laser modules Optical network equipment		
Electronics and Automotive Systems Company	Enameled wires		
Metals Company	Copper foil products		



## **Environmentally Conscious Production**

The Furukawa Electric Group is pursuing various environmental protection efforts to reduce the environmental impact of its production and distribution processes.

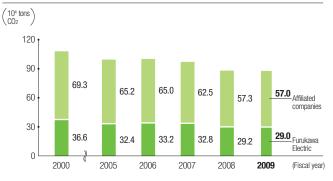
## **Reducing Greenhouse Gas Emissions**



#### **Initiatives at Works**

The majority of the Group's greenhouse gas emissions consist of CO<sub>2</sub> generated from electricity, fuel and other energy sources. As emissions from manufacturing processes account for a large proportion, we work on reducing emissions by increasing the efficiency of production processes, switching fuels, replacing equipment with more efficient alternatives, meticulously turning off lights when not in use, insulating hot areas and other measures. Total Group GHG emissions came to 860,000 tons of CO<sub>2</sub> in fiscal 2009, a reduction of 19% against fiscal 2000 levels. On a non-consolidated basis, we achieved an equivalent of 290,000 tons of CO2, a reduction of 21% compared to fiscal 2000.

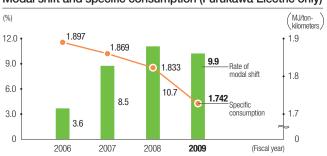
#### Greenhouse gas emission



## **Initiatives in Logistics**

In fiscal 2009, total transportation volume for Group fell 5.6% year on year to 442 million ton-kilometers. Of this total, Furukawa Electric accounts for 135 million ton-kilometers. While this is 7% higher than the fiscal 2008 level, the Company held the increase in CO<sub>2</sub> emission to 2.5% due largely to enhancements in loading rates. In addition, Furukawa Electric achieved a reduction of 8% in specific consumption (denominator: ton-kilometers) from fiscal 2006. We will continue to promote a modal shift, increase loading rates and promote joint deliveries to reduce transportation energy consumption.

## Modal shift and specific consumption (Furukawa Electric only)



### **Green Procurement**



## Increasing purchasing rates and expanding efforts at affiliated companies

The main components that go into the manufacture of the Company's products are purchased in accordance with the Furukawa Electric Group Green Procurement Guidelines. In this manner, steps are taken to ensure that components meet certain predetermined requirements with respect to chemical content. Furukawa Electric will systematically extend this process to cover all components. Turning to office supplies and related products, the number of items compliant with the criteria for specified procurement stipulated under the Law on Promoting Green Purchasing totaled 52 as of the end of fiscal 2009. We will continue to expand the number of certified items and extend activities to cover affiliated companies.

## Developing a green product management system supply chain

The Furukawa Electric Group strives to collect information on environmental regulatory requirements in a timely manner. At the same time, the Group is working to establish a green product management system for Furukawa Electric brand products and to improve activities prerequisite to plant as well as principal supply chain management including procurement oversight, the prevention of pollution attributable to processes and the control of loss during shipment. All 12 eligible plants renewed their qualifications as green partners in fiscal 2009 under Sony Corporation's environmentally friendly system and material procurement campaign. Moreover, we conduct regular audits from a sampling of eight plants, 26 affiliated company and nine supplier plants.

#### Adopting a Green Product Management System

The Fitel Products Division of Furukawa Electric's Telecommunications Company has adopted a green product management system in order to comply with EU-RoHS directives and REACH regulations and to better secure a supply chain that remains conducive to the smooth dissemination of chemical substance information in tune with changes to regulatory requirements.

In employing this system together with the Company's assessment sheet, which corresponds to JAMP\*1 and JGPSSI\*2 information distribution specifications and standards, Furukawa Electric is efficiently managing the collection of information and historical records. We are selecting products that comply with regulations at the early stages of design and endeavoring to enhance product environmental risk management.

- \*1 Joint Article Management Promotion consortium
- \*2 Japan Green Procurement Survey Standardization Initiative



## **Environmentally Conscious Production**

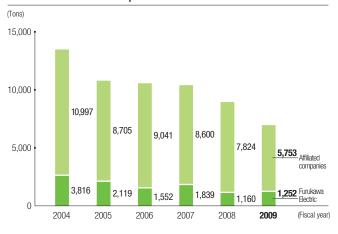
## Green product management system



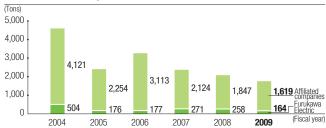
## **Zero Emission Activities**

The Furukawa Electric Group began taking action to reduce outsourced waste disposal in 1993, and launched zero emission efforts in 2001 for reducing the volume of final disposal to less than 1% of the total volume of waste by directly transporting waste from each works to final disposal sites. As a result of our efforts to meticulously sort waste and recycle waste acid and sludge into useful resources, the overall level of outsourced waste disposal for the Group for fiscal 2009 fell by 53% compared with fiscal 2004 to 7,005 tons. Furukawa Electric achieved an equivalent reduction of 67% on a standalone basis and our affiliated companies a reduction of 48% (both compared with fiscal 2004 levels). The overall level of direct landfill disposal for the Group also fell by 61.4% compared with fiscal 2004 to 1,783 tons. Furukawa Electric achieved an equivalent reduction of 67% on a standalone basis and our affiliated companies a reduction of 61% (both compared with fiscal 2004 levels).

#### Outsourced waste disposal



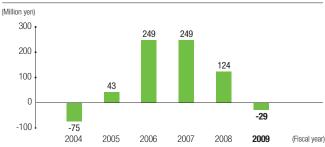
#### Direct landfill disposal



## **Reducing Waste Disposal Costs**

In fiscal 2001, spending on landfill and intermediate disposal cost more than 300 million ven. Since then, we have promoted reuse, reduced the levels of waste and carefully sorted waste to generate value from it. As a result, the Company maintained positive benefits from 120 million yen to around 250 million yen between fiscal 2006 and 2008 on the back of soaring copper prices. In fiscal 2009, however, we incurred a negative impact of 29 million yen due to the decline in copper prices, recycling market saturation and other factors.

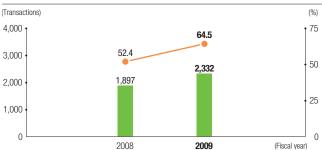
#### Trends in waste disposal costs



#### **Introduction of the Electronic Manifest System**

Furukawa Electric has also introduced the electronic manifest system. We commenced operations at our Hiratsuka and Mie Works in April 2008. Operations began at Nikko Works in February 2009, followed by Chiba Works in July 2009. In 2009, the annual rate of usage of the electronic manifest for all companies was 64.5% (total manifest transactions: 3,616; electronic manifest transactions: 2,332). We intend to focus on expanding its use to all our works in the future.

#### Electronic manifest transactions and transaction ratios





# **Chemical Substance Management**

The Furukawa Electric Group promotes efforts to appropriately manage and reduce the use of harmful chemical substances.

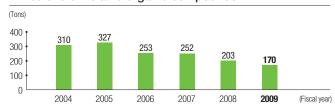
## **Chemical Substance Management**



(Linit: ton)

The Furukawa Electric Group promotes efforts to reduce the use of harmful chemical substances. In particular, we make every effort to actively reduce emissions of volatile organic compounds, which are regarded as one of the causes of photochemical smog. Furukawa Electric's emissions have fallen 45% compared to levels in fiscal 2004. Three of the four affiliated companies that were using organic chlorine compounds completely phased out their use during fiscal 2008.

#### Emissions of volatile organic compounds



## Appropriate Management of Chemical Substances

At Furukawa Electric, we confirm the properties and applicable laws and regulations regarding all chemical substances we use during the manufacturing process on their Material Safety Data Sheets and administrate them. We also monitor the volumes of each substance used and report the relevant details in accordance with the PRTR Law\*.

#### List of PRTR substances (Furukawa Electric only)

Zinc and its compounds 77 0.1 0.7 0.0 31 Antimony and its compounds 0.0 0.0 53 Ethylbenzene 6.7 0.0 0.0 6.7 80 Xvlene 17.7 8.0 0.9 8.6 82 Silver and its water-soluble compounds 2.4 0.0 0.0 0.0 86 Cresol 177.1 0.0 0.0 176.7 2.1 88 Hexavalent chromium compounds 9.9 0.0 7.8 144 Inorganic cyanide compounds 47 0.0 47 0.0 N,N-dimethylformamide 53.3 0.0 0.0 52.9 232 15 913 7 272 Copper salts (water-soluble) 0.4398 52 300 86.6 106.4 Toluene 246.2 52.1 304 Lead 1.5 0.0 0.0 0.1 305 Lead compounds 3.7 0.0 0.1 0.0 308 Nickel 2.2 0.0 0.0 2.2 309 0.0 1.2 332 1.2 0.0 0.1 0.0 Arsenic and its inorganic compounds 333 10.6 0.0 0.0 10.6 Hydrazine 349 0.1 121.4 Bis (2-ethylhexyl) phthalate 3.8 0.4 0.2 0.0 355 374 Hydrogen fluoride and its water-soluble 2.2 0.0 2.2 0.0 compounds

37

16,620.4

0.8

0.0

96.3

0.1

0.2

106.0

0.0

0.0

503.4

405

453

Boron compounds

Molybdenum and its compounds

Total

## Activities for Reducing Emission of Volatile Organic Compounds

Although Furukawa Electric does not currently own any facilities that fall under regulations set out in accordance with the Air Pollution Control Law, we are nonetheless working to reduce emissions. The main types of volatile organic compounds (VOC) that we handle are toluene and isopropyl alcohol (IPA). We switched from toluene to a hydrocarbon-based detergent in the degreasing of copper strips and installed recovery apparatus for IPA, which is used to reduce copper wire when it comes out of the melting furnace, in efforts to achieve reductions. Moreover, we are considering process improvement to further reduce emissions.

#### Column

## Developing analytical techniques that lead to further advancements in eco wires

Furukawa Electric sells such environmentally sound products as ECOACEPLUS, an eco wire that does not use either harmful heavy metals or halogen as sheathing materials. At each lifecycle stage, from receipt of raw materials to product shipment, high levels of management are required in product inspection to avoid quality deficiencies attributable to harmful element contamination. While nondestructive fluorescent X-ray (XRF) inspection methods are employed, standard sampling of similarly composed products is critical to ensuring accurate measurements. We have already developed proprietary standard sampling techniques for such heavy metals as lead, cadmium and hexavalent chromium and halogens including chlorine and bromine, substances prohibited under RoHS directives.

Moving forward, we established standard sampling techniques for heavy metals that could shortly be expected to fall within the scope of regulation. These included arsenic, bismuth, selenium and antimony. Through these means, we have implemented systems for the management of harmful substances that extend beyond the scope of current regulation. Looking ahead, we will engage in strict eco wire quality management and inspection to ensure higher levels of product safety and reliability.



ECOACEPLUS®

<sup>\*</sup> Law Concerning Reporting, Etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management



# **Environmental Risk Management**

The Furukawa Electric Group recognizes the environmental risks associated with its business operations and therefore develops and implements countermeasures for each risk.

## **Preventing Soil and Groundwater Pollution**

The Furukawa Electric Group conducts strong risk management recognizing that soil and groundwater pollution are vital health and safety concerns for local residents and employees. We take prompt action upon the discovery of any soil or groundwater pollution. Every effort is made to secure the health and safety of local residents. We report to local authorities on the status of any pollution and actions to prevent its spread, and we release information to local residents. related organizations and the media as necessary. We implement a range of actions to protect the local environment from soil or groundwater pollution, including regularly inspecting for leakages of specific harmful substances, preventing leakages and using alternative substances.

In fiscal 2009, we conducted remedial work on land we own in the Yokohama area, developed a slag treatment plan for the Oyama area (a plant site of the former Furukawa Magnesium Co., Ltd.) and undertook an examination of slag deposit volume and ground pollution. Having confirmed the presence of groundwater in excess of standards at a portion of the site, work is being undertaken to prevent its spread. Running parallel with this work, we are pursuing the appropriate treatment of slag together with soil remedial work. Turning to affiliated companies, soil remedial work for removing Kyowa Electric Wire's former Osaka Plant from the list of contaminated areas under the Soil Contamination Countermeasures Law and at the Ibaraki Plant owned by Aoyama Kinsho Co., Ltd. has been completed.

## Effort to Prevent Atmospheric and **Wastewater Pollution**

Every Furukawa Electric works maintains voluntary control limits and manages operations to avoid exceeding regulatory limits for atmospheric and wastewater quality.

Atmospheric and wastewater quality data was all managed within regulatory limits at each works in fiscal 2009.

\* See our website for detailed data for the Chiba, Nikko, Mie works as well as the Copper Tube and Copper Foil divisions.

#### Management status at works

√: within regulatory limits

	Measured item	Chiba Works	Nikko Works	Mie Works	Copper Tube Div.	Copper Foil Div.
Atmospheric data	NOx,SOx, dust	<b>✓</b>	<b>✓</b>	✓	✓	<b>✓</b>
Wastewater quality data	pH,BOD,n-h (mineral oil)	<b>✓</b>	<b>✓</b>	✓	✓	<b>✓</b>
	SS	<b>✓</b>	<b>✓</b>	<b>✓</b>	<b>✓</b>	<b>✓</b>

## **PCB Management**

The number of instruments containing PCB is monitored at each affiliated company to facilitate effective storage and management operations. Steps are being taken to pursue early registration with the Japan Environmental Safety Corporation and the commissioning of PCB waste processing on an ongoing basis in accordance with plans.

Condensers and transformers removed from our facilities are examined for PCB content on a case-by-case basis. As was the case in the previous fiscal year, the number of instruments containing PCB under storage was also confirmed in fiscal 2009. Regulatory authorities were notified and appropriate storage established.

#### Number of instruments containing PCB

	Works		In use	Total
Chiba Works	Already processed	88	0	88
CHIDA WOLKS	Unprocessed	15	23	38
Nikko Works		385	12	397
Hiratsuka Works		883	10	893
Mie Works		131	3	134
Copper Tube Division		65	0	65
Yokohama Works		22	0	22
Copper Foil Division		16	2	18
Total		1,605	50	1,655

## **Response to Asbestos Concerns**

#### **Use of Asbestos in Products**

Although we no longer manufacture or import products containing asbestos, we have previously done so for industrial use. Relevant products include electric wires for use on ships and fire prevention products for electric wire installation for telecommunications and electricity.

## **Use of Asbestos in Buildings and Plant Facilities**

## Plants and buildings

A fiscal 2005 investigation to ascertain the extent to which asbestos spray materials discovered in Company-owned properties may have dispersed confirmed that asbestos was stable. Given the risk of future dispersal, we removed or contained the materials at plant buildings in fiscal 2006. Investigation is ongoing at one tenanted building. As old tenants vacate and new tenants enter the building, work is being undertaken to remove asbestos materials.

### Facilities and equipment

Insofar as possible, asbestos subject to dispersal has been replaced with viable alternatives. Where asbestos is not dispersed, we will later install non-asbestos containing materials during scheduled inspections.



# **Environmental Accounting**

The Furukawa Electric Group has introduced environmental accounting to gain a quantitative understanding of costs and proceed efficiently and effectively in its environmental activities.

## **Environmental Accounting**

We have compiled tables outlining our environmental conservation costs, economic benefits associated with environmental conservation activities and environmental conservation benefit (material benefit).

Furukawa Electric's environmental conservation costs for fiscal 2009 came to about 3.4 billion yen in expenses. Investment totaled around 1.1 billion yen of which more than 0.8 billion yen was largely allocated to such environmental pollution control

measures as the renewal of dust collectors at Mie works. Taking into account contributions to the reduction of energy costs, the economic benefit was around 1,960 million yen.

Environmental conservation costs for our affiliated companies came to 4.9 billion yen in expenses and about 900 million yen in investment. The economic benefit was approximately 4.4 billion yen due to cutbacks in energy costs.

#### **Environmental conservation costs**

(Unit: million yen)

Cotogory	Voy activity and the auteams	Total costs		
Category	Key activity and the outcome	Furukawa Electric (Year on year)	Affiliated companies	
(1) Business area cost	Pollution prevention (air pollution, etc.), energy conservation, waste disposal, etc.	1,382 (47)	2,030	
(2) Upstream/downstream cost	Recovery of packaging, drums, etc.	696 (59)	1,638	
(3) Administration cost	Environmental management system auditing, environmental impact monitoring, etc.	393 (–22)	598	
(4) Research and development cost	Development of environmentally sound products, research into alternatives for harmful substances	824 (–396)	620	
(5) Social activity cost	Tree planting, local community cleaning activities, donations, etc.	4 (-33)	4	
(6) Environmental remediation cost Environmental impact assessments, cleanup of polluted soil, etc.		130 (53)	25	
Total		3,429 (-292)	4,915	

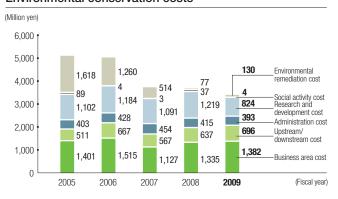
Note: All data has been compiled in accordance with environmental accounting guidelines published by the Ministry of the Environment. Data on affiliated companies was collected for a total of 14 companies. Year-on-year comparative data has not been provided due to changes in the scope of affiliated companies

### Environmental conservation benefit

Emissions causing environmental		Reduction		
impact	Unit	Furukawa Electric	Affiliated companies	
Volume of industrial waste disposal processed*1	tons	-98	1,666	
Energy consumption (crude oil equivalent)	1,000 kl	6	80	
Water consumption	1,000 tons	9,722	1,122	
Emissions of volatile organic chemical compounds	tons	33	48	
CO <sub>2</sub> emissions	1,000 tons-CO <sub>2</sub>	2	3	
S0x emissions	tons	-30	65	
NOx emissions	tons	-19	2	
Soot emissions	tons	5	78	

<sup>\*1</sup> Excluding recycled waste

## Environmental conservation costs



#### Economic benefit associated with environmental conservation activities

(Linit: million ven)

		(Unit: million yen)	
	Total benefit		
Details of benefits	Furukawa Electric	Affiliated companies	
Revenue from recycling	217	568	
Reduction in waste disposal costs	0	175	
Reduction in energy costs	1,715	3,721	
Reduction in water purchase costs	33	-2	
Total	1,964	4,462	

<sup>\*</sup> Minus figures indicate an increase

#### Investment and research costs

(Unit: million yen)

Investment and research costs	Total costs	
	Furukawa Electric	Affiliated companies
Environment-related investment	1,098	892
Total investment	6,753	6,079
Total research costs	9,457	3,454

#### Economic benefit



<sup>\*2</sup> Minus figures indicate an increase