Targets and Performance of Environmental Management

Furukawa Electric has set the Medium-Term Plan for Environmental Preservation Activities 2005 and implemented environmental preservation activities from fiscal 2003 to fiscal 2005. In addition, Furukawa Electric and its group have set common activity targets for consolidated environmental management to promote these activities. For the performance for fiscal 2005, the final fiscal year of the plan, although the targets for the reduction of the emission of greenhouse gases were not satisfied, we were able to attain the general targets. Building upon these, we have formulated the Medium-Term Plan for Environmental Preservation Activities 2009 as our next medium-term targets.

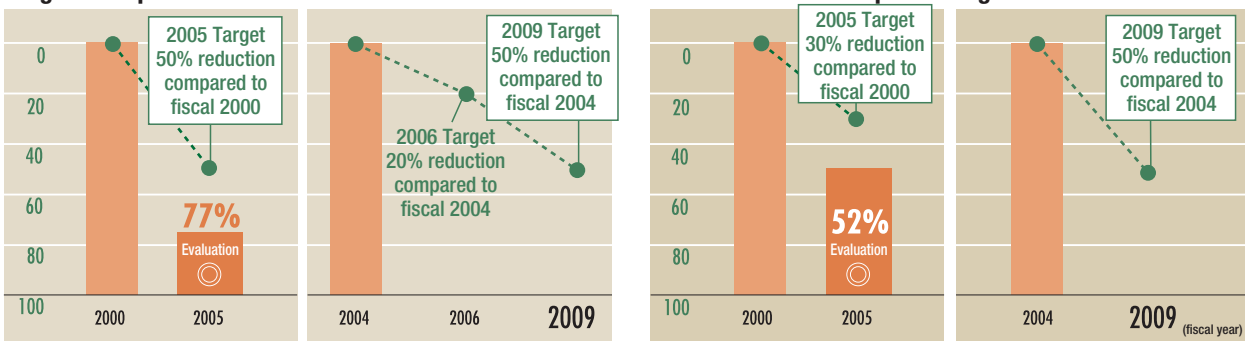
Target Performance

Targets and Performance of Furukawa Electric	Targets and Performance of Consolidated Environmental Management

Waste reduction activities

(→ P9)

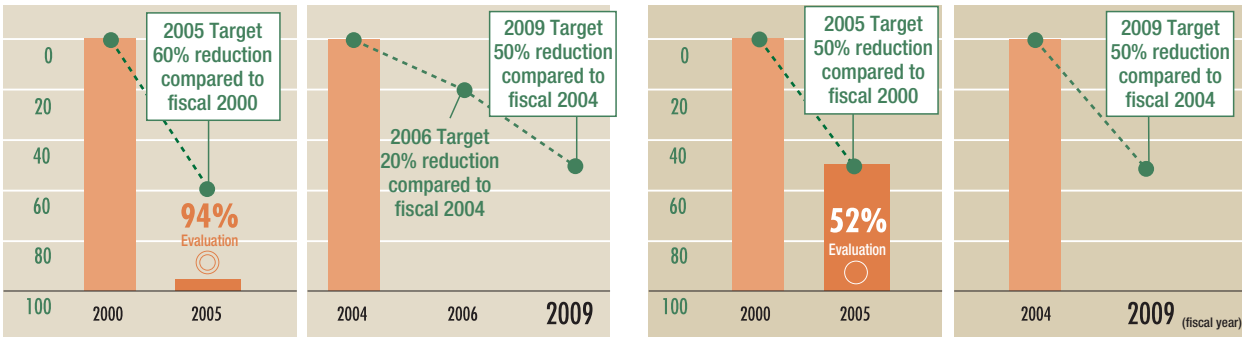
Targets and performance for the reduction of the amount of waste outsourced for processing



Zero-emission activities

(→ P9)

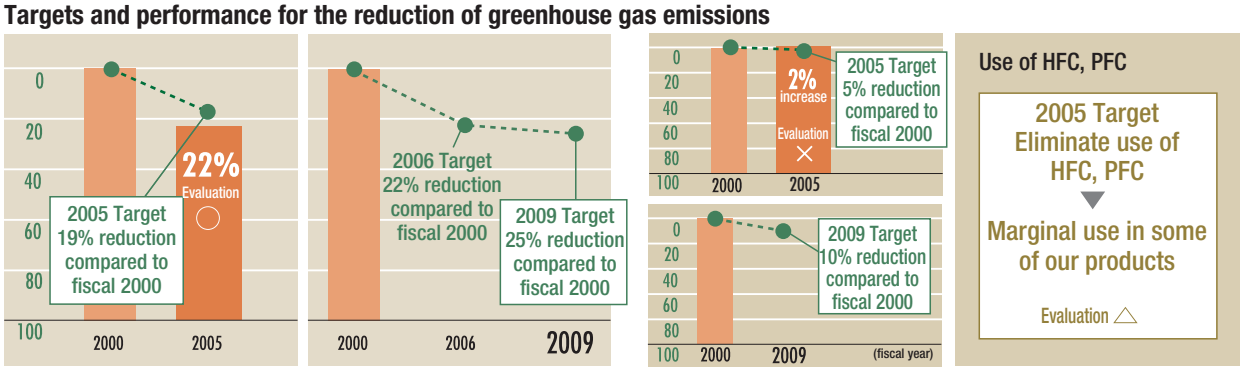
Targets and performance for the reduction of the amount of direct landfill processing



Activities to prevent global warming

(→ P10)

Targets and performance for the reduction of greenhouse gas emissions



Use of HFC, PFC

2005 Target
Eliminate use of HFC, PFC

▼

Marginal use in some of our products

Evaluation △

Fiscal Year Targets

Furukawa Electric set the annual target of "Priority Environmental Preservation Activity Targets," and these targets were employed in the objective, targets and implementation programs under the environmental management system for the individual business bases to promote these activities. Our affiliated companies also set their unique targets with respect to the common activity targets of the consolidated environmental management and promoted their activities.

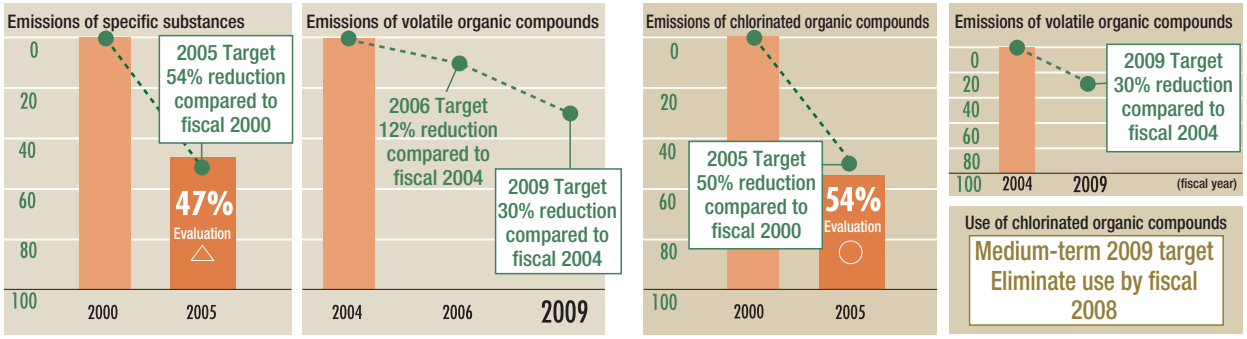
Evaluation Standards : ◎Substantially achieved ○Achieved △Slightly underachieved ×Underachieved

Targets and Performance of Furukawa Electric | **Targets and Performance of Consolidated Environmental Management**

Chemical substance control activities

(→ P11)

Targets and performance for the reduction of chemical substance emissions



Green activities

(→ P12)

2005	2006	2009	2009
Target Make procurement rate to 100% for 23 general purpose items including office supplies	**Target** 1. Make procurement rate 100% for 50 general purpose items 2. Build the FGM system for all factories subject to RoHS Directive	**Target** Expansion of the number of items under green procurement (general purpose items) and roll out to the Group Companies Strengthen promotion of green product management Build FGM system and roll out to the supply chain by the end of 2007, establish by the end of 2008	**Target** Make procurement rate to 100% for items under green procurement (general purpose items) Strengthen promotion of green product management Build FGM system by the end of 2007, establish by the end of 2008
Performance Evaluation ○ 100%			

*The FGM system is a mechanism to manage the content of regulated hazardous substances for Furukawa Electric products.

Eco-design activities

(→ P13)

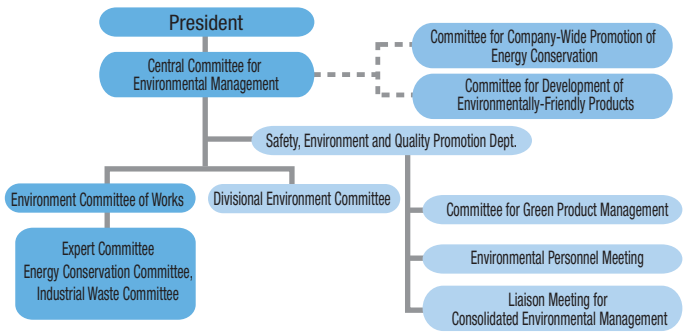
2005	2006	2009	2009
Target Create models in preparation for the introduction of LCA	**Target** Make the sales percentage of environmentally friendly products among new products to 100%	**Target** Promote the increased environmental performance of products Increase the percentage of environmentally friendly products among new products Introduce environmental performance indices	**Target** Promote the increased environmental performance of products Make the sales percentage of environmentally friendly products to 100%
Performance Evaluation △ Implement evaluation of telecommunication cables, power cables and automotive parts at the production stage			

Environmental Management System

Environmental Management Organization

At Furukawa Electric, the Director in charge of the environment acts as the Chairman of the Central Committee for Environmental Management, which has been set up to promote environmental preservation activities for the entire company. In addition, Furukawa Electric is promoting the Group's environmental preservation activities in conjunction with its affiliated companies at the Liaison Meeting for Consolidated Environmental Management. As we believe that schemes based on ISO14001 would be effective for carrying out environmental preservation activities at the individual business bases of Furukawa Electric and its affiliated companies, we have been working towards acquiring certification. Of our affiliated companies, two companies newly acquired certification (Sunsunny Industry in December 2005 and Furukawa Precision Engineering in July 2006), and all of Furukawa Electric's business bases and consolidated environmental companies have acquired ISO14001 certification.

Organization Chart for Company-Wide Environmental Management



Conducting Environment Related Education

The Furukawa Electric Group is conducting a variety of educational sessions to heighten awareness of the environment among our employees.

ISO14001 Related Education

Two seminars were conducted by the company's instructors to train internal environmental auditors, which included participants from our affiliated companies. 45 internal auditors were trained at these seminars. We also held two instructional seminars on the revised version of ISO14001. In addition, we held a seminar on positive environmental aspects conducted by external instructors. There were 27 participants at this seminar, mainly from the EMS Office of the individual business bases and affiliated companies. Brush-up seminars for internal auditors aimed at our affiliated companies were also held.

Environment-related Education

We conducted education sessions on environmental problems in general for a total of 50 of our new employees and second-year employees. In addition, at each works and workplace, we conducted as necessary a general environmental education session at the time when employees are assigned to a division, and conducted special education sessions relating to specific work.

Environmental Seminar for Managers

In order to further promote awareness among managers about environmental activities, we held an environmental seminar for managers of consolidated companies (the third such seminar). As instructors, we invited the managers of the environmental divisions of major domestic companies to lecture on the topic of "Environmental Management of Leading Global Companies." A total of 85 top officials, including the President, executive directors, members of the Central Committee for Environmental Management and personnel in charge of environmental management at works of Furukawa Electric, and presidents and other managers of affiliated companies participated in this lecture.

Business Activities and Their Impact on the Environment

Furukawa Electric provides products by purchasing a variety of parts and raw materials, and by using energy, including water and electric power, and chemical substances. We are working on reducing the adverse impact on the environment produced by these activities.

Impact on the environment by the six production base works

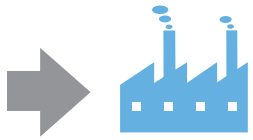
INPUT

Raw materials
Copper → 186,000 t

Energy(*1) → 124,000 kl

Water → 17 million t

Chemical substances(*2) → 1,516 t



OUTPUT

Emissions into the atmosphere

CO_2	212,000 t–CO_2
NOx	126 t
SOx	12 t
Soot	11 t

Wastewater → 15.8 million t

Waste

Industrial waste(*3)	2,119 t
Recycled materials	15,851 t

Chemical substances(*2)

Emitted volume	188 t
Transferred volume	295 t

(*1)Amount of electric power, fuel oil and fuel gas used
(*2)PRTR targeted substances
(*3)Outsourced industrial waste disposal, excluding recycled materials

Impact on the environment by non-production bases

Furukawa Electric has grasped the impact on the environment caused by the non-production bases of its Head Office and three Branch Offices.

Amount of electric power → 1,070,651 kWh

Amount of water used → 273 m^3

Amount of paper used

Photocopier paper	28,836 kg
Newspaper	4,044 kg

The non-production bases of our Head Office and Branch Offices are promoting power savings and resource savings. As power saving measures, lights in rooms such as unused conference rooms are turned off and air conditioning units are set at an appropriate temperature. As resource saving measures, we promote the sorting of waste and the reuse of items such as photocopier paper and files, but due to the heightening of operations this year, the amount of paper used has increased from the previous year.

Zero-Emission Activities

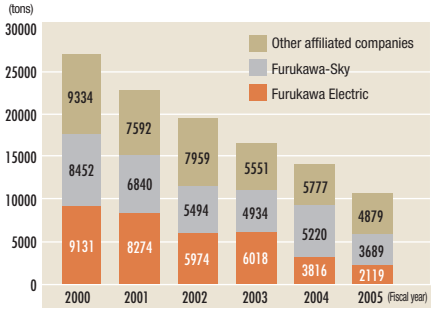
The Furukawa Electric Group has started its activities to reduce outsourced industrial waste disposal from 1993, and has promoted zero-emission activities of waste since 2001. At the Furukawa Electric Group, zero-emission activities are defined as "activities to reduce the industrial waste commissioned to outsourced disposal that is transported from plants directly to landfill spots for final disposal." We have promoted the recycling of waste acid and sewage as well as the reuse of cleaning liquids.

●Performance in Fiscal 2005

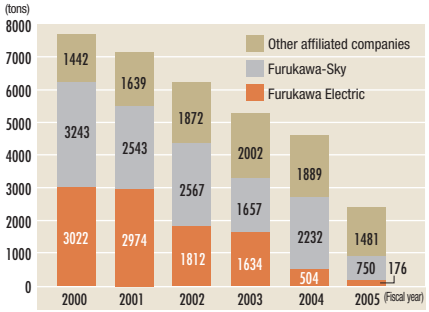
Furukawa Electric We reduced outsourced industrial waste disposal by 77% compared to fiscal 2000, attaining the fiscal target of a 50% reduction. In addition, we reduced the volume of direct land disposal by 94% compared to fiscal 2000, substantially exceeding the fiscal target of a 60% reduction.

Affiliated Companies We reduced outsourced industrial waste disposal by 52% compared to fiscal 2000, attaining the fiscal target of a 30% reduction. In addition, we reduced the volume of direct land disposal by 52% compared to fiscal 2000, attaining the fiscal target of a 50% reduction.

Outsourced Disposal of Industrial Waste



Direct Landfill Disposal



Activities of QC Circle

At the production sites, we have made environmental efforts as one of our objectives through our QC Circle activities. The circle at the Mie Optical Fiber Plant has undertaken to increase the percentage of bobbin reuse and have seen a positive effect. In the past, bobbins have been discarded, and they pinpointed the cause to develop appropriate measures. In uncovering the cause, they utilized the " Repetitive why analytical Method," and all of the members of the circle put their heads together. As a result of their efforts, the percentage of reuse increased to approximately 80% from approximately 20%. This effort was awarded the gold prize at the company-wide QC Circle presentation.

Reducing Waste Disposal Costs

As part of the Furukawa Survival Plan, we consider it crucial that environmental preservation activities directly contribute to management, and we have taken the reduction of waste disposal costs as an activity target. In fiscal 2001, there was an expenditure of over 300 million yen for landfill and intermediate disposal. While decreasing the volume of waste itself by promoting reuse and eliminating wastefulness on the line, we emphasized the thorough sorting of waste to create value, making it possible to sell it for value. We saw a profit of 43 million yen due in part to the influence of the heightened price of scrap copper in addition to these effects.

Waste Disposal Costs

Reducing the Percentage of Final Disposal

At the Chiba Works, we have undertaken a five-year plan from fiscal 2002 with the target of "achieving zero-emission by reducing landfill waste." Zero-emission is defined as the state where "the percentage of waste for final disposal (final disposal percentage) to the total waste volume is less than 1%." We have thoroughly implemented simple and steady measures such as promoting the through management of waste sorting, promoting the creation of value, reducing the amount of office paper (going paperless, using backing paper) and campaigns to encourage employees to take home their personal garbage. As a result, the final disposal percentage dropped to 0.2%, and the target was achieved one year ahead of the original schedule.

Efforts to Prevent Global Warming

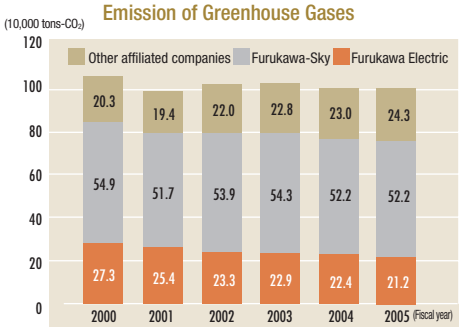
The Furukawa Electric Group has been taking part in energy conservation activities for some time in order to prevent global warming. At our plants, we have been reevaluating lighting, installing energy conservation equipment and switching fuels. We have also been turning off unnecessary lighting and reevaluating the temperature settings for our air conditioning and heating systems in our offices.

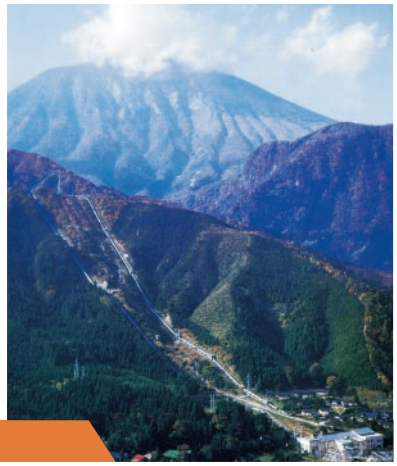
●Performance in Fiscal 2005

Furukawa Electric Emissions of greenhouse gases were reduced by 22% compared to fiscal 2000, attaining the target of a 19% reduction.

Affiliated Companies Emissions of greenhouse gases were increased by 2% compared to fiscal 2000, failing to attain the target of a 5% reduction.

Emission of Greenhouse Gases





Reducing the Amount of Heavy Oil Used

Furukawa Nikko Power Generation Inc., one of our consolidated companies, uses hydraulic power to generate electricity, supplying it to the Nikko Works. Furukawa Nikko Power Generation was handed over from Furukawa Co., Ltd. in September 2003. Prior to the handover, the Nikko Works were supplied with electricity from this electric power plant, but they were also using electricity purchased from Tokyo Electric Power Company and diesel generators within the works. On the occasion of the handover in 2003, the mode of electricity being used was reviewed, and it was decided that external sources of electricity would be used during periods of water shortage; diesel generators would be used in emergency situations; and only the electricity from the hydraulic power of Furukawa Nikko Power Generation would be used under normal circumstances. As diesel generators were discontinued, the heavy oil necessary to operate them were no longer used, and the resulting reduction in CO_2 emissions amounted to a reduction of 16,000 tons per year. Further, we also began supplying electricity to Furukawa-Sky's Nikko plant, which has not been supplied with this electricity prior to the handover, newly laying down power lines.

*Values calculated by multiplying the total amount of electricity including this amount due to hydraulic power generation by the CO_2 conversion factor are used as indicators of the volume of greenhouse gas emissions.

Switching to City Gas

At the Hiratsuka Works, we had traditionally been using liquefied petroleum gas (LPG). LPG was supplied by a tank lorry and then sent to the production facilities from a storage tank set up within the works. This required consideration for safety and environmental issues under the regulations of the High Pressure Gas Safety Law. Meanwhile, city gas (liquefied natural gas) has the benefit of producing less carbon dioxide than LPG when it is burned. If it is possible to get a supply of gas through pipes from Tokyo Gas Co., Ltd., it would be possible to safely change the fuel with only a slight investment, and we considered switching to city gas. We implemented the switching as city gas pipes had been set up close to the works and it was not necessary to make any major renovations in the production facilities. As a result, there has been a 448 ton reduction in carbon dioxide per year. In addition, we have seen benefits for managerial aspects, as there is no longer any need for storage tanks or vaporizers, there are no transfers from lorries, and we have been able to decrease the risk of leakage when the valves are not operating well.

Efforts in Logistics

The Furukawa Electric Group has worked to reduce the impact on the environment due to logistics-related matters, reducing the amount of packaging material, reusing and recycling cable drums and using joint transport.

Following upon fiscal 2004, we have continued to conduct activities to reduce the emissions coefficients per transported product ton kilo for automobile NOx emissions. We have attempted to reduce CO_2 and NOx emissions from vehicles by increasing the use of mixed loads and large vehicles and reducing the number of vehicles used.

With the revision of the Law Concerning the Rational Use of Energy, new responsibilities have been included for shippers. In preparation for the law taking effect from April 2006, we made preparations to get a grasp on our ton kilo data including our affiliated companies. At Furukawa Electric and Furukawa-Sky, we are proceeding with the task of computing the necessary volume of energy use, as they are designated as specified shippers with a transport volume of over 30 million ton kilos a year.

Chemical Substance Management

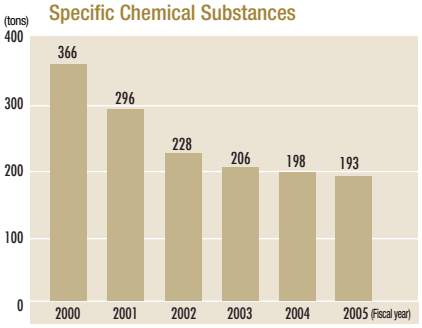
At the Furukawa Electric Group, we are aiming to eliminate the use of three substances among chlorinated organic compounds, tetrachloroethylene, trichloroethylene and dichloromethane. As Furukawa Electric has achieved excellent results, the Company is also working on reducing emissions of three substances (Furukawa Electric's specific chemical substances) that are volatile organic compounds: toluene, xylene, and ethylbenzene.

●Performance in Fiscal 2005

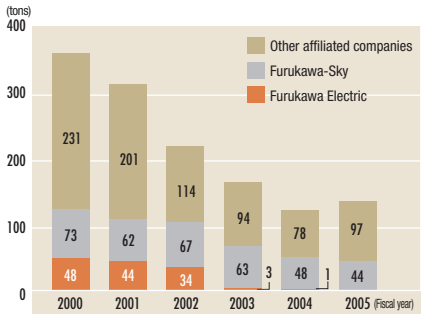
Furukawa Electric Emissions of Furukawa Electric's specific chemical substances were reduced by 47% compared to fiscal 2000, slightly less than the fiscal target of a 54% reduction.

Affiliated Companies Emissions of chlorinated organic compounds were reduced by 54% compared to fiscal 2000, achieving the fiscal target of a 50% reduction. At the start of fiscal 2005, eight companies were using these substances, but two companies eliminated their use of these substances during the year, presently leaving six companies.

Emission of Furukawa Electric's Specific Chemical Substances



Emission of Chlorinated Organic Compounds



Appropriate Management of Chemical Substances

For chemical substances used in the production process, we manage them according to their toxicity, checking the characteristics of the substances and applicable laws on the MSDS (Material Safety Data Sheet). We also get a grasp on the amount of these substances that is used and report these amounts in accordance with the PRTR Law *.

*Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management

Release and Transfer Volume of PRTR Substances

Unit: tons

Substance No.	Name of substance	Handling volume	Emitted volume	Transferred volume	Neutralized volume
25	Antimony and its compounds	66.4	0.0	4.8	0.0
40	Ethylbenzene	8.6	0.0	0.0	8.6
63	Xylene	22.5	5.7	2.5	14.3
64	Silver and its water-soluble compounds	1.2	0.0	0.0	0.0
67	Cresol	324.6	0.2	0.2	323.8
108	Inorganic cyanide compounds	19.9	0.0	0.0	19.9
172	N, N-dimethylformamide	86.8	0.6	0.2	85.3
197	Decabromodiphenyl ether	199.6	0.0	14.4	0.0
207	Copper salts (water-soluble)	13.0	0.0	0.3	0.0
227	Toluene	538.4	181.1	269.3	85.6
230	Lead and its compounds	14.2	0.0	0.0	0.0
231	Nickel	3.2	0.0	0.0	0.0
232	Nickel compounds	8.7	0.0	0.1	5.2
253	Hydrazine	5.2	0.0	0.0	5.2
266	Phenol	196.7	0.0	0.1	196.1
272	bis (2-ethylhexyl) phthalate	3.0	0.1	0.1	0.0
283	Hydrogen fluoride and its water-soluble salts	2.4	0.0	2.1	0.1

*Targeting substances with a handling volume of 1 ton or more at the Furukawa Electric works (0.5 tons or more for specific first category chemical substances)

Responding to Regulations Concerning the Emissions of Volatile Organic Compounds

Furukawa Electric has conducted activities to reduce the volume of emissions of Furukawa Electric's specific chemical substances since fiscal 2003. Toluene accounts for 95% of these targeted substances, and is used as a product cleanser and in floor paints. As reduction measures, we have implemented a review of the content of cleaning agents, improved our washing tanks, and switched to using water-soluble paints. In addition, improvements in quality have reduced the number of times that repeated cleansing has been needed. Meanwhile, Air Pollution Control Law was revised in August 2005, and new regulations concerning all volatile organic compounds (hereinafter VOC) were incorporated. These were put into effect from April 2006. Furukawa Electric does not currently have any facilities that fall under these legal regulations, but we will conduct reduction activities in accordance with the self-imposed regulations of The Japanese Electric Wire & Cable Makers' Association and the Japan Copper and Brass Association with which we are affiliated. When we surveyed the use of VOC, we found that toluene emissions, which we have traditionally set as the target of our efforts, account for 59% of the total VOC emissions, and emissions of isopropyl alcohol, which were not targeted, account for a large percentage at 33%. As these two substances combined account for 92%, we drew up a plan to conduct measures particularly centered on the processes that handle these two substances and incorporated it into our mid-term targets (please refer to page 6 for target values).

Creating Environmentally Friendly Products

Aiming for the creation of environmentally friendly products, Furukawa Electric is carrying out the green procurement of purchases, green product management, and the development of environmentally friendly products.

Green Product Management Activities

With the strengthening of environmental laws and regulations regarding toxic and harmful substances, customers not only are demanding a guarantee that we do not use regulated harmful substances or use products that contain them, but also are strongly requesting that we would establish a control system to oversee the chemical substances included in products as well as the presentation of evidence based on analyzed data. Furukawa Electric established the Committee for Green Product Management in February 2005, conducting the cross development of customer requests to each business division, and furthering the sharing of information across divisions. Each committee member took on a central role in the effort to construct a management system.

In fiscal 2005, we studied the content of regulated harmful substances for all Furukawa Electric brand products, and created a "Registration Master for all Green Products and Plants." Each business division developed an execution plan for constructing a management system, and it was decided that these would move forward in phases starting with plant divisions that produce high priority regulated products.

At plant divisions, the mechanisms of the existing ISO9001 and ISO14001 were utilized and improvements were made such as the introduction of tests using analytical instruments to ensure that regulated harmful substances were not mixed in or distributed at the respective stages from the receiving of raw materials and parts, assembly and production, and product shipment. We also received requests from our main customers to check the control system via document examination, and we conducted an internal audit of target plants for three business divisions and two companies. For the other business divisions, we conducted individual informative sessions and interviews to increase the awareness of the importance of controlling the chemical substances included in products and the thorough application of company-wide targets.

In the future, we will continue to fully respond to customer audits and conduct internal audits of Furukawa Electric's individual business divisions. We will also continuously conduct information sessions, instruction, and audits for constructing a management system in order to develop it for our affiliated companies and business clients.

Activities of the Automotive Products Division

The Automotive Products Division of the Electronics and Automotive Systems Company is continuously working on establishing an environmental impact substance management system in response to requests from automotive manufacturers.

In order to meet customer needs that are increasing yearly, we must respond promptly with increased accuracy, and we have been undertaking the development of an "Environmental Management System" with the objective of making operations more efficient within the company.

We have created a mechanism to conduct environmental assessments at the respective stages of vehicle development from development, design, to mass production. In addition, we have collected the material data and analytical data for the products of our respective suppliers as well as that used in our production process, and we have strengthened our activities to eliminate or reduce the environmental impact substances according to requests from automotive manufacturers.

Measurement using fluorescent X-ray analysis

In order to verify the absence of lead, mercury, cadmium, and hexavalent chromium as commissioned in EU's Directive on End of Life Vehicles, we have installed analytical instruments in all of our plants and have started to analyze the products and materials for on-going and under-development products.

Environmental management system screen

Green Procurement

23 items were selected from office supplies and materials for general use (general purpose items), and we decided to purchase green products for the subject items. After strict evaluation by the purchasing division, we registered only green products into our company purchasing system. It became possible for purchase originators to easily purchase green products, and by the end of fiscal 2005, the rate of procurement was 100%. In the future, in addition to increasing the number of items that fall under green products, we will expand our purchasing system to our affiliated companies.

Our company's green products are products recommended by the Green Purchasing Network and products with environmental labels.

Examples of the environmental labels used

For products and materials (purchased products) involved with the manufacturing process, we are conducting surveys on the state of environmental management of our suppliers and whether their products contain environmentally regulated substances. We are also checking for the level of environmentally regulated substances in products using MSDS, ingredient charts, and in certain cases using analyzed data.

Environmentally Friendly Products

At Furukawa Electric, we call products that are harmless at the respective stages from production, use, distribution, and disposal and that have a minimal impact on the environment "environmentally friendly products." We use our own unique environmental label for these products. Further, we have designated the percentage of sales from environmentally friendly products out of the total sales from new products as the environmentally friendly product percentage. The percentage for fiscal 2005 was 69%.

ECOLINK
未来の地球にリンク

For specifics on environmentally friendly products, please refer to the following page on the Furukawa Electric website.
http://www.furukawa.co.jp/enviro/pro/index.htm

Halogen-free electric wires with major increases in strength due to new cross-linking technology

A new type of halogen-free electric wire
The Eco-Ace Plus Series

We have developed a new cross-linking technique in order to meet the customer needs and demands for a major increase in strength while still maintaining a high level of flame retardant and processing capabilities. With this cross-linking technique, we have created an even stronger bond than before between the base resin and the metal hydrate flame retardant material. While continuing to maintain the flexibility and flame retardant capabilities, we were able to give it a high power that was not possible with prior technology.

In terms of the pressure welding and crimping to the connector when it is used as a wire harness, we have confirmed that it has an equal finish and is on par with PVC electric wires, which have superior processing capabilities.

Characteristics

- They are highly resistant to external damage.
- They are as easy to process as PVC electric wires.
- They do not contain the six substances specified in RoHS Directive, halogen substances, antimony, nor phosphorous.
- They meet UL standards and CSA standards.

Developing Environmentally Friendly Products

Eco-design is a design that minimizes the environmental impact of products at all stages, from the raw materials to production, use, and final disposal. Specifically, it is conducted according to the concept and methods of LCA (Life Cycle Assessment).

In addition to designing materials that satisfy the various regulations that have recently been spreading (like the RoHS Directive), we are promoting development of environmentally friendly products with the following points.

- For electric wires and cables, we are implementing designs that have a minimal environmental impact while reflecting customer demands. Specifically, we are creating them to meet various international regulations and designing them so that they are functionally easy to recycle and reuse. By designing electric wires and cables collected from the market so that they can be disassembled, sorted, and reused with the least impact on the environment, we are contributing to the evaluation at the final stage of LCA.
- The cycle of collection and effective use for conductors (copper, aluminum) has already been established. For the accompanying resin materials, however, after first considering their use for their former purposes, if these are inappropriate, we will develop the optimal purpose and application and attempt to put them to effective use.
- In the future, we will seek to develop materials derived from plants to replace materials derived from petroleum that is expected to be exhausted in the future. We will also seek to integrate our unique technology that we have developed and accumulated until now, contributing in a real sense to reducing the impact on the earth's environment.
- We will promote the development of products and technologies that meet the requirements for the suppression of gas emissions that lead to global warming based on the Kyoto Protocol as a top priority in all areas. We have actively cooperated with our works (plants) and affiliated companies in their energy conservation, rainwater use, and heat island measures. After establishing the measures on our ground, we will proceed to make proposals to our customers.

Voices of the development staff
Yusuke Kuwasaki
Eco-Products Department,
Ecology & Energy Laboratory,
R&D Division

Since 2000, environmentally friendly products have been the focus of much attention, and most of these are related to energy conservation and are mainly products where the benefits are actually returned to the consumers. When I actually think from the perspective of a consumer, the reality is that I would make a purchase based more on price than the environment.

In the future, in addition to promoting the development of environmentally friendly products where consumers can receive the benefits, I would like to devote my efforts to create a society where products that are made with the environment in mind can be appreciated as benefits in and of themselves.

Recycled bobbins using optical fiber cables scraps

Product characteristics

Recycled bobbins contain over 40% discarded polyethylene collected from removed optical fiber cables for environmental purposes. Normal plastic bobbins use new polypropylene materials, but recycled bobbins use discarded polyethylene to effectively utilize waste materials.

Further, in order to make it possible to reuse them, we have created them with the strength to withstand repeated use and a light weight (half the mass of wood drums) to make transport easier.

Bobbins that can no longer be used due to damage can be crushed and reused as recycled bobbins.

Recycled bobbin

Recycled duct guard

Traditionally, optical fiber cables have been disposed of as landfill waste after removal, but we discussed recycling discarded optical fiber cables jointly with Nippon Telegraph and Telephone East Corporation and Nippon Telegraph and Telephone West Corporation, making recycled duct guards into a product.

Generally, the recycling of optical fiber cables has not been promoted because of their compound nature with fibers, resin, and metals, making sorting difficult and expensive. We were able to simplify the sorting process, establishing a production method where raw materials with a variety of substances mixed in could still be molded, making them possible to recycle.

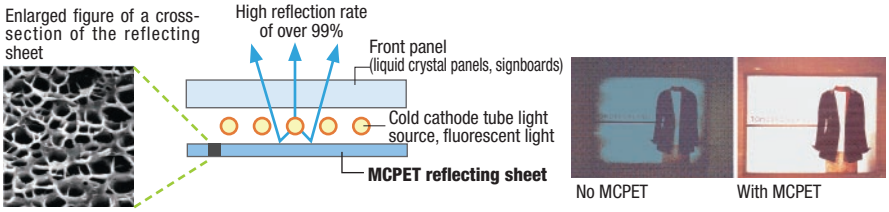
The recycled duct guard protects ducts from the weight of vehicles at the shallowest part of the buried ducts that contain cables. Conventionally, the ducts were guarded by laying concrete on the ducts. Yet it required a great deal of time to lay the concrete and age it, making the construction period long and causing problems such as traffic jams from being unable to free the roads. The recycled duct guard is a product that replaces this concrete guard, and as it can be guarded simply by covering the ducts with the guard, the construction period is greatly reduced as is the total cost.

Example of the construction of a recycled duct guard

Micro-cellular foamed light reflecting sheet "MCPET"

MCPET is a foam that includes numerous superfine bubbles of less than 10μm, and this structure makes it a plastic light reflecting sheet with an extremely high reflection rate for visible light of over 99%.

Making use of this high reflection rate, we have realized energy conserving effects such as increasing the average lighting intensity of electric signboards (increased by approximately 1.6 times), or maintaining the lighting intensity while decreasing the number of lamps. MCPET also has the property of highly diffusive reflectance and can contribute to thin and sleek lighting and to the improvement of uneven lighting in signs. Meanwhile, it also has the property of small wavelength dependence (it can recreate primary colors) and is being used in display showcases and optical displays. In recent years, it is also being used as a reflecting sheet for the backlight of LCD television sets. This is a product that is expected to contribute to meeting the demands for further energy conservation in the areas of lighting and signs.



Recycling Activities

The Furukawa Electric Group promotes the recycling of waste material by establishing a collection network and recycling system. Through the collection networks at nine bases throughout Japan, we collect removed electric wires and cables, recycling 100% of the conducting materials like copper and aluminum. Insulation materials are also recycled as recycled plastic and fuel. In addition, used plastic waste materials and plant loss materials are recycled on the recycling line, and the resulting recycled pellets are put to a wide variety of uses, from being recycled as products to being used as materials for injection molding and extrusion molding.

For specifics on our recycling technology, please refer to the following page on the Furukawa Electric website.
http://www.furukawa.co.jp/enviro/tech/index.htm

Synthetic resin trough (GreenTrough)

● Recycled products

Recycled electric wires (Telecommunication cables)

Recycled electric wires (Power cables)

Cable duct for underground laying (KOTA-KUN)

Environmental Risk Management

Countermeasures Regarding Pollution of Soil and Groundwater

The Furukawa Electric Group recognizes that the pollution of soil and groundwater is an important issue in terms of safety and health for local residents and employees, and we are working to grasp the state of pollution. This is not something that is required of us through legal regulations, but measures that we have undertaken voluntarily.

If the soil or groundwater is found to be polluted during investigations, we take a prompt action. We also report to the adiministrative organs about these polluted conditions and measures to be adopted to clean the environment, and disclose this information to the local residents, related institutions and media as necessary.

We are also conducting pollution risk avoidance activities at the works and business bases to implement appropriate cleaning measures so that soil pollution will not negatively affect surrounding areas. In fiscal 2005, we completed the harmful substance history review at the works and affiliated companies. Each of the works completed the risk assessment, and a portion of the works began investigations into the state of soil pollution based on this assessment.

Key Points of the Pollution Risk Avoidance Activities

- Prohibit the laying underground of new reservoir facilities and pipes for harmful substances.
- Inspect for the leakage of harmful substances, prevent leakages, and switch to substitute substances.
- Study the history of use of harmful substances, the records, and continue storage management.

Situation and Countermeasures Regarding Pollution of Soil and Groundwater

Situation of Furukawa Electric			
Name of Works	Location	Contaminant	Cleansing method
Nikko Works*	Nikko-shi, Tochigi Prefecture (Company owned areas in Uwanoshiro, Arasawa Uodome, Kiyotaki 4-chome, and the grounds of the former Mizusawa skating rink)	Selenium, arsenic, lead, cadmium, fluorine	Cleansing and recycling into cement materials, after the excavating and removal of contaminated soil
	We are also planning to conduct pollution investigations and cleansing measures in seven other company owned areas, expecting to complete them in fiscal 2006.		
Former Kambara Works	Shizuoka-shi, Shizuoka Prefecture	Lead, fluorine, arsenic, tetrachloroethylene	Cleansing and recycling into cement materials, after the excavating and removal of contaminated soil
Situation of Affiliated Companies			
Company Name	Location	Contaminant	Cleansing method
Totoku Electric	Nagawa-machi, Chiisagata-gun, Nagano Prefecture (Former Nagato Works)	PCB, dioxine	Storage and control after the excavating and removal of contaminated soil
Former Tochigi Metal	Nikko-shi, Tochigi Prefecture	Hexavalent chromium, lead, tetrachloroethylene	Excavating and removal of contaminated soil, replacing with clean soil, vapor suction, and cleaning of original site with a chemical treatment
Former Furukawa Altec	Hiratsuka-shi, Kanagawa Prefecture	Fluorine	Cleansing and recycling into cement materials, after the excavating and removal of contaminated soil
Kyowa Electric Wire*	Neyagawa-shi, Osaka Prefecture (Former Osaka Works)	Lead, cyanogens, boron, fluorine, dichloromethane	Pumping and cleansing of groundwater
Furukawa Color Aluminum*	Utsunomiya-shi, Tochigi Prefecture (Head Works)	Hexavalent chromium, fluorine	Pumping and cleansing of groundwater
Furukawa-Sky*	Oyama-shi, Tochigi Prefecture (Oyama Plant)	Tetrachloroethylene	Pumping and cleansing of groundwater

The * indicates a continuation from fiscal 2004

PCB Management

The quantity of PCB instruments is recognized on every works and appropriate storage management is conducted, and with the start of processing operations by Japan Environmental Safety Corporation, we will successively commission processing.

Quantity of PCB Stored

Unit: item

Name of Works		In storage	In use	Total
Chiba Works	(Already processed)	86	0	86
	(Unprocessed)	39	0	39
Nikko Works		182	140	322
Hiratsuka Works		40	3	43
Mie Works		53	73	126
Osaka Works		55	11	66
Yokohama Works		9	0	9
Total		464	227	691

Compliance with Laws and Regulations and Other Items to be Observed

We are regularly confirming other items to be observed, and making efforts for compliance by patrolling our sites to check the implementation status.

We keep track of revisions of laws and regulations, by closely following the latest information in the Official Gazette.

Responding to the Asbestos Problem

The Furukawa Electric Group has established an "Asbestos Problem Task Force" with the CAO as its director to respond in this problem. We have investigated the health problems, its actual use in products, and the state of buildings and facilities owned by our company.

Actual Use in Products

We investigated the history of asbestos use including the products of affiliated companies. Currently, products containing asbestos are not manufactured nor imported, but there are products that were manufactured and sold for industrial use in the past. Targeted products include electric wires for ships and fire prevention products for use in construction to install electric wires for telecommunication and electricity. We are disclosing information on these issues through industry associations like The Japanese Electric Wire & Cable Makers' Association and Cable Firestop systems Association of Japan, and we are also responding to customers by providing information and responding to inquiries.

Actual Use in Buildings and Plant Facilities

1.Company housing, company-owned buildings and plant buildings

We did not discover any signs of asbestos use in company housing, but there was spray material in a portion of the company-owned buildings and plants. After investigating the state of diffusion of the asbestos, we confirmed that it was stable. In expectation of the risk of future scattering and diffusion, we decided to remove it. We are conducting these removal procedures in succession, and expect to complete them during fiscal 2006.

2.Facilities and equipment

Some of them contained asbestos, and for those where there were substitutes, we exchanged them. In cases where the asbestos was embedded in insulating materials, we confirmed that it had not scattered. For these, we will switch them with materials that do not contain asbestos in the future. Until then, we will oversee the safety conditions.

*For health problems, please refer to the hygiene column on page 24.

List of Products Containing Asbestos

(As of August 31, 2006)

Classification by Use	Product Name	Used regio	Production Period	Type of Asbestos Used	State of Countermeasures
Electric wires, cables, and accessories	Asbestos sheath	MI cable sheath	1969 to 1989	Chrysotile	Use glass wool after 1989
	Pipe flange packing	Water cooling equipment pipe joint	1977 to 1997	Chrysotile	Use non-asbestos product after 1997
	Braided asbestos thread	Cabtire cable sheathing	1977 to 1987	Chrysotile	Stop production in 1987
	Asbestos	Heat resistant layer of the rubber spacer for water cooled cables	1976 to 1983	Chrysotile	Stop production in 1983
	Asbestos tape	Assembly parts of the FRP spacer for water cooled cables	1976 to 1995	Chrysotile	Stop production in 1995
	Epoxy putty		1980 to 2004	Chrysotile	Stop production in 2004
	22/33 kV prefabricated joint	Waterproofed parts of the splice	to 1988	Chrysotile	Changed to non-asbestos product after 1988
	Pipe line waterproofing device	Waterproofed parts	to 1988	Chrysotile	Changed to non-asbestos product after 1988
	22/33kV air terminal box	Waterproofed parts of the joint	to 1988	Chrysotile	Changed to non-asbestos product after 1988
	Termination	Terminal parts (epoxy putty)	to 2004	Changed from chrysotile to tremolite in 2000	Changed to non-asbestos product after 2004
	Danseal P		1978 to 1984	Chrysotile	Non-asbestos after 1984
	Keikalite S, SG		1976 to 1985	Amosite	Non-asbestos after 1985
	Dannekka		1973 to 1982	Chrysotile	Non-asbestos after 1982
	Keikalite H		1976 to 1987	Amosite	Non-asbestos after 1987
Automobile related products	Wire harness for engines Asbestos sheet	Wound on the harness	1983 to 1989	Chrysotile	Stop production in 1989

Environmental Accounting

We compiled “environmental conservation cost,” “economic benefit associated with environmental conservation activities” and “environmental conservation benefit (material benefit)” to quantitatively grasp the results of environmental costs and benefits. This data is collected in conformity with the environmental accounting guidelines published by the Ministry of the Environment. For affiliated companies, the data is collected for the 21 companies listed on page 2.

Environmental conservation costs for Furukawa Electric were 5.1 billion yen for expenses and 400 million yen for capital expenditure. Expenses decreased by 200 million yen compared to the previous year (fiscal 2004). The financial benefit amounted to 320 million yen.

Data of 10 more affiliated companies were collected. Environmental conservation costs were 3.3 billion yen for expenses and 1 billion yen for expenditure. The financial benefit increased by 1.5 billion yen due to an increase in energy consumption accompanying heightened operations.

Environmental Conservation Cost

Unit: million yen

		Furukawa Electric		Affiliated companies
Category	Key activity and the outcome	Amount	Compared to the previous year	Amount
(1) Business area cost	Pollution prevention such as air pollution, energy conservation, waste disposal, etc.	1,401	−205	1,980
(2) Upstream / downstream cost	Retrieval of containers, drums, etc.	511	103	192
(3) Administration cost	Audit of environmental management system, monitoring of environmental impact, etc.	403	−67	276
(4) Research and development cost	Development of environmentally friendly products, research in substitutes for toxic substances, etc.	1,102	−32	713
(5) Social activity cost	Tree planting, cleaning in local communities, donations, etc.	89	85	22
(6) Environmental remediation cost	Assessment for environmental impact, cleanup of polluted soil, etc.	1,619	−65	149
	Total	5,125	−180	3,331

For affiliated companies, a comparison with the previous year has not been calculated as the target companies differ from the previous fiscal year.

Environmental Conservation Benefit

		Furukawa Electric	Affiliated companies
Environmental impact emissions	Unit	Reduction	Reduction
Industrial waste disposal amount *	t	1,597	1,786
Energy consumed (crude oil basis)	1,000 kl	16	7
Water consumed	1,000 t	−300	266
Emission of volatile organic chemical compounds	t	1	−2
CO_2 emission	1,000 t-CO_2	11	−10
SOx emission	t	0	−21
NOx emission	t	33	9
Soot emission	t	−1	−1

* Amount excluding recycled industrial waste

* – (minus) represents an increase.

Economic Benefit Associated with Environmental Conservation Activities

Unit: million yen

	Furukawa Electric	Affiliated companies
Contents of Benefits	Amount	Amount
Revenues gained by recycling	228	396
Reduction in waste disposal costs	61	−21
Reduction in energy costs	30	−1,882
Reduction in water purchase costs	−2	−4
Total	317	−1,511

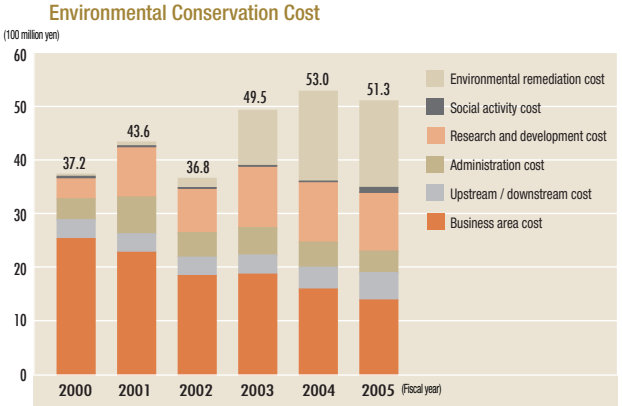
* – (minus) represents an increase.

Investment and Research Cost

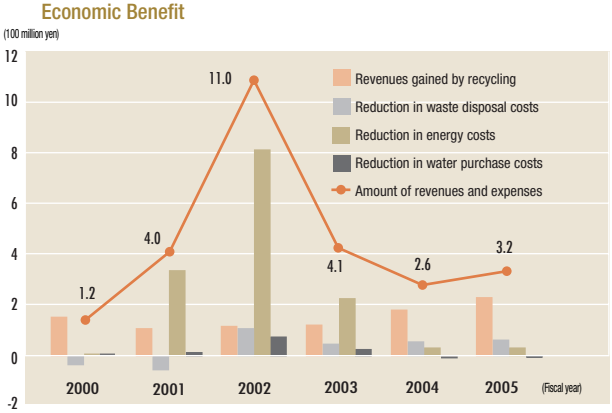
Unit: million yen

	Furukawa Electric	Affiliated companies
Investment and Research Cost	Amount	Amount
Environment-related investment	424	979
Total investment cost	8,826	17,699
Total research cost	9,480	5,612

Environmental Conservation Cost



Economic Benefit



Environmental Preservation Performance Indicators

Of the works of Furukawa Electric, the data for air and water quality of four Works that are registered as specialized plants are reported below.

Chiba Works

Atmospheric Indicators

Item	Unit	Equipment	Legal Standards	Self-Imposed Standards	Average Value	Maximum Value
NOx	(ppm)	Melting furnace	180	180	31	51
Soot	(g/Nm³)	Melting furnace	0.1	0.1	0.033	0.048

Wastewater quality indicators

Measurement Item	Unit	Legal Standards	Self-Imposed Standards	Average Value	Maximum Value
pH		5.0~9.0	5.0~9.0	7.8	8.3
COD	(mg/l)	15	15	4.6	9.6
SS	(mg/l)	20	20	3.9	10.9
n-h(mineral oil)	(mg/l)	2	2	0.2	0.4

Nikko Works

Atmospheric Indicators

Item	Unit	Equipment	Legal Standards	Self-Imposed Standards	Average Value	Maximum Value
NOx	(ppm)	Boiler	180	180	120	120
		Melting furnace	200	200	39	39
		Dryer furnace	300	250	47	47
SOx	(K value)	Boiler	17.5	17.5	0.39	0.39
		Melting furnace	17.5	17.5	0.26	0.26
		Dryer furnace	17.5	17.5	0.16	0.16
Soot	(g/Nm³)	Boiler	0.3	0.3	0.0	0.0
		Melting furnace	0.2	0.2	0.0	0.0
		Dryer furnace	0.5	0.2	0.0	0.0

Wastewater quality indicators

Measurement Item	Unit	Legal Standards	Self-Imposed Standards	Average Value	Maximum Value
pH		5.8~8.6	6.0~8.5	7.1	7.6
BOD	(mg/l)	25	16	5.0	5.1
SS	(mg/l)	50	20	1.2	3.2
n-h(mineral oil)	(mg/l)	5	0.5	0.2	0.2

Mie Works

Atmospheric Indicators

Item	Unit	Equipment	Legal Standards	Self-Imposed Standards	Average Value	Maximum Value
NOx	(ppm)	Boiler	180	140	54	54
		Melting furnace	180	140	17	17
SOx	(Nm³/Hr)	Boiler	0.6	0.5	0.00	0.00
		Melting furnace	41.6	33.3	0.13	0.13
Soot	(g/Nm³)	Boiler	0.3	0.24	0.005	0.005
		Melting furnace	0.3	0.24	0.004	0.004

Wastewater quality indicators

Measurement Item	Unit	Legal Standards	Self-Imposed Standards	Average Value	Maximum Value
pH		5.8~8.6	6.5~8.5	7.6	7.8
BOD	(mg/l)	10	4	3.0	5.0
SS	(mg/l)	25	6	1.5	2.1
n-h(mineral oil)	(mg/l)	1	0.7	0.10	0.15

Osaka Works

Atmospheric Indicators

Item	Unit	Equipment	Legal Standards	Self-Imposed Standards	Average Value	Maximum Value
NOx	(ppm)	Boiler	150	120	2.0	2.0
		Melting furnace	200	160	2.0	2.0
		Heating furnace	170	144	3.0	4.0
SOx	(K value)	Boiler	1.17	1.17	0.00	0.00
		Melting furnace	1.17	1.17	0.00	0.00
		Heating furnace	1.17	1.17	0.18	0.29
Soot	(g/Nm³)	Boiler	0.10	0.08	0.00	0.00
		Melting furnace	0.20	0.16	0.00	0.00
		Heating furnace	0.25	0.20	0.00	0.00

Wastewater quality indicators

Measurement Item	Unit	Legal Standards	Self-Imposed Standards	Average Value	Maximum Value
pH		5.7~8.7	5.7~8.7	7.6	7.9
BOD	(mg/l)	300	10	5.0	9.0
SS	(mg/l)	300	50	11.0	25.0
n-h(mineral oil)	(mg/l)	5	2	1.0	2.0