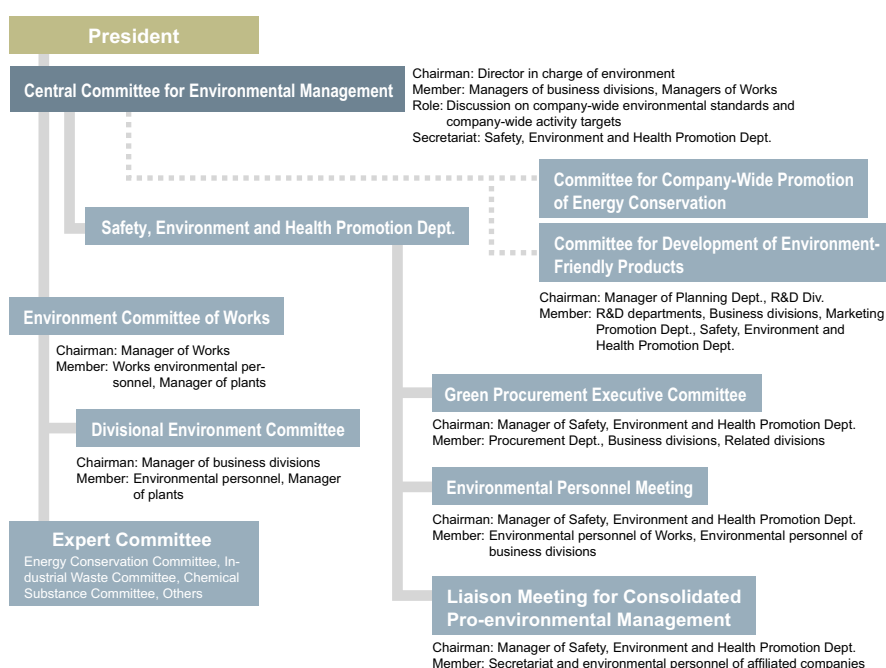


# IV Environmental Preservation Initiatives

## Environmental Management Activities

### Organization Chart for Company-Wide Environmental Management

The Chart here shows the environmental management organization of the company. Central Committee for Environmental Management, in which a Director in charge of the environment comes in as Chairman, has been set up to carry out pro-environmental management under direct control of President, thereby promoting environmental preservation activities of the entire company.



### ISO14001 Certification

Considering that ISO14001 would be a very effective scheme for environmental preservation, we have been pursuing certification acquisition since fiscal 1998, and all the Works achieved the aim in fiscal 2002.

Hereafter, we will proceed to improve environmental performance. Moreover, we will support the environmental management of affiliated companies, thus promoting preservation of the global environment from the standpoint of consolidated pro-environmental management.

Works	Date of acquisition	Certification agency	Certification No.
Chiba	June 18, 1998	DNV	EMSC-1208
Mie	November 24, 1998	JACO	EC98J1097
Hiratsuka	September 1, 2000	DNV	EMSC-1699
Osaka	December 19, 2000	DNV	EMSC-1114
Kambara	December 25, 2000	JSA	JSAE315
Shinagawa	November 2, 2001	DNV	00372-2001-AE-KOB-RvA
Nikko (Kiyotaki District)	March 14, 2002	DNV	1851-2002-AE-KOB-RvA/JAB
Fukui	April 19, 2002	DNV	00484-2002-AE-KOB-RvA
Yokohama	June 14, 2002	DNV	1849-2002-AE-KOB-RvA
Oyama	September 27, 2002	DNV	00583-2002-AE-KOB-RvA
Shiga			
Nikko (Sheet Plant)	March 14, 2003	DNV	Expansion of Nikko Works

### Education and Training

#### Education of Internal Auditor

An educational course for internal auditor was given twice at the Headquarters, and once in the Nikko, Yokohama and Hiratsuka Works to bring up 91 internal auditors.

#### Environmental Education

Company-wide education was given to 52 new recruits on April 4, and to 23 second-year administrative employees on June 30. Moreover, general and special environmental education is provided for all employees at their Works and worksites.

#### Education of Internal Auditor

Date	Place	Target	Turnout
April, 2002	Headquarters	Six Works of Furukawa Electric	24
May, 2002	Headquarters	Ten affiliated companies	14
August, 2002	Nikko	Nikko Works	18
October, 2002	Yokohama	Two Works of Furukawa Electric and one affiliated company	16
March, 2003	Hiratsuka	Two Works of Furukawa Electric	19
Total			91

## Stocked Material Pollution, Accidents, Disasters and Compliance with Laws and Regulations

### Situation and Countermeasures Regarding Pollution of Soil and Groundwater

We have been conducting soil and groundwater pollution investigations, which are aimed at those Works where heavy metals or organic chlorine compounds had been used before. Although some pollution exceeding environmental standards was identified in certain places, it has been confirmed that these places are within the premises of Works or company-owned lands and that the pollution has no influence on the surrounding areas. Moreover, voluntary countermeasures are being taken against the pollution giving due consideration to the results of investigations.

Two Works are taking such countermeasures as described below.

#### ■ Nikko Works

It was found that the soil in the premises of the Works and its company-owned peripheral areas was polluted with selenium, arsenic, lead and cadmium; and the groundwater in the Works premises with selenium, arsenic and lead.

These facts have been reported to the administration, and are under in-depth examination.

We discontinued in 1988 the copper refinery business that apparently caused this pollution, so that there is no possibility of new pollution. With respect to purification of the soil in the company-owned peripheral areas, we held a briefing session for residents about the countermeasure work in March 2003, and after installing purification facilities, started the work in July. The polluted soil will be transported out of the premises, and will be cleansed.

#### ■ Oyama Works

Treatment of the tetrachloroethylene pollution of soil and groundwater within the premises is under way, whereby the water is pumped up and is aerated. The use of the solvent had been discontinued, so that there is no possibility of new pollution. The results of purification are routinely reported to the administration concerned.

Furthermore, although it is not a case with heavy metals nor organic chlorine compounds, a purification program against soil pollution with alkaline effluents is under way as described below.

#### ■ Shiga Works

In 1998, a caustic alkali effluent was accidentally leaked in the Works. While the leaked effluent was immediately recovered and treated, the groundwater has been pumped up continuously for pH treatment until today. Because the pH has reached a level that requires no treatment, we are going to confer with the administration to finish the treatment.

### Investigation Regarding Illegal Disposal of Industrial Waste at Prefecture Borders between Aomori and Iwate

We received a request, dated February 5, 2003 and addressed to the Oyama Works, under the name of prefectural governors of Aomori and Iwate to report, under the name of our President, on the illegal disposal at the prefectural borders. It was an investigation regarding the volume of business, from January 1991 through August 2000, with San'ei Kagaku Kogyo (in Japanese) in Aomori Prefecture who committed the illegal disposal and Ken-nan Eisei (in Japanese) in Saitama Prefecture who conducted the collection, transportation and intermediate processing.

Internal investigation found that two Works had a track record in waste oil and burnt residue, and this fact was reported to the two prefectures.

In our judgment, our action of disposal commitment does not conflict any laws and regulations.

### Storage Situation of PCB

PCB had been used, as an insulation oil for electrical equipment, in transformers, electrical capacitors and stabilizers for fluorescent light. Whereas 1,500 liters of PCB stored in the Chiba Works was detoxified through a chemical process in February 2002, the containers are still under storage and control.

The situation of use and storage at each Works is shown in the Table here.

#### PCB Storage Situation

Unit: Number of equipment

No.	Name of Works	Removed and stored	In use	Total
1	Chiba (Processed)	86	0	86
	Chiba (Unprocessed)	36	0	36
2	Nikko (Kiyotaki District)	182	140	322
3	Nikko (Sheet Plant)	7	44	51
4	Hiratsuka	40	3	43
5	Oyama	14	36	50
6	Mie	53	73	126
7	Osaka	55	11	66
8	Fukui	0	0	0
9	Shiga	9	0	9
10	Kambara	0	3	3
11	Shinagawa	Stabilizer only	0	Stabilizer only
12	Yokohama	9	0	9
Total		491	310	801

### Compliance with Laws and Regulations

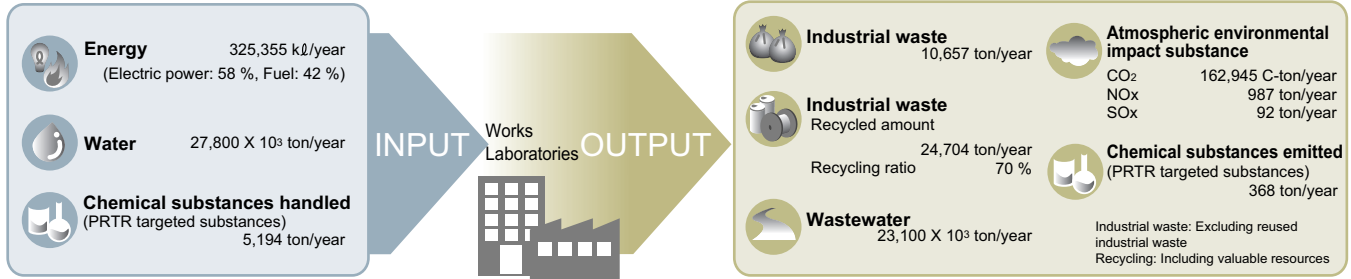
We are regularly confirming laws and regulations to be observed, making efforts to observe them. Only one case shown below infringed the regulation, and was immediately dealt with.

#### ■ Shiga Works

Exhaust noise of blowers was found to exceed the noise control limits in certain spots, so that these spots were provided with noise barriers.

## Material Flow Global Warming Prevention and Energy Conservation

### Material Flow



### Global Warming Prevention

In response to the ratification of Kyoto Protocol by the Japanese Government in June 2002, Furukawa Electric has established medium- to long-term targets for reduction of greenhouse gases\*, which has been authorized by the Central Committee for Environmental Management. Based on these medium- to long-term reduction targets, each business division has set up its specific reduction plan after fiscal 2003, and began reduction activities.

The Graphs here show changes in the emission of greenhouse gases (carbon converted) after fiscal 1990, indicating that the emission in fiscal 2002 was 95 % over fiscal 1990, which corresponds to a slight increase over fiscal 2001.

Hereafter, we will strive hard to achieve the targets for fiscal 2005.

\* Namely, CO<sub>2</sub>, SF<sub>6</sub>, HFC and PFC, with which Furukawa Electric has a track record of use.

### Energy Conservation Activities

In view of the revision of the Law Concerning the Rational Use of Energy (Energy Conservation Law) in 1993, the Committee for Company-Wide Promotion of Energy Conservation was established in April 1994, thus initiating company-wide activities under the participation of all Works including those that are not designated as an Energy Management Factory. In 1997 the company-wide energy conservation index was changed to energy intensity per unit product (EIPUP) specified in the Energy Conservation Law, and the target was set to "1 % reduction over the previous year in terms of EIPUP".

In fiscal 2002, the production volume of three out of nine Works that are designated as Class 1 Energy Management Factory decreased to 71~91 %, so that the index worsened by 7.5~22 % in EIPUP.

In spite of the EIPUP improvement activities based on quick electric power turning-on and -off together with productivity improvement, the weighted EIPUP average of the nine Works

unfortunately worsened by 5.7 % over fiscal 2001. This value corresponds to 77 % over fiscal 1995, meaning a 3.3 % improvement in year average.

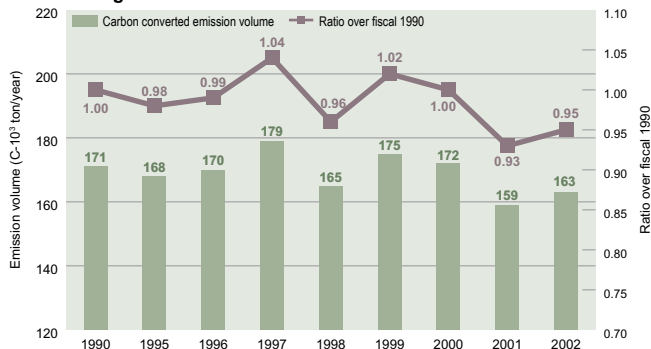
#### Case Examples of Energy Conservation Activities in Fiscal 2002

Major items of energy conservation include: use of high-efficiency transformers, inverter control of cooling water pumps, waste heat recovery in incineration furnaces for waste oil, activation control of compressors, energy conservation-oriented operation of air conditioners and economizing of lighting. These measures resulted in an energy conservation (oil converted) of 5,660 kJ of oil.

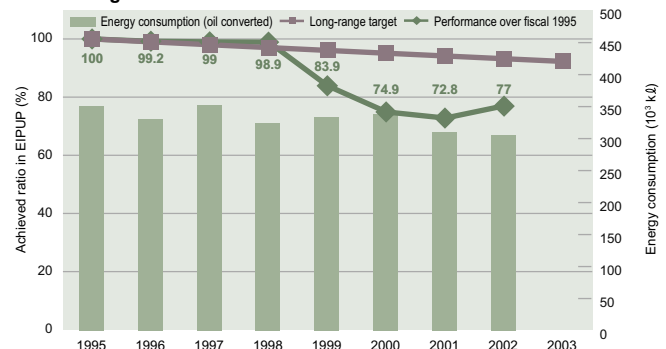
#### Energy Conservation Activities in Future

We will promote various energy conservation activities including development of management standards that are in compliance with the Energy Conservation Law, thereby striving to reduce the EIPUP by 1 % or more in annual average.

Changes in the Emission of Greenhouse Gases



Changes in EIPUPs of nine Works



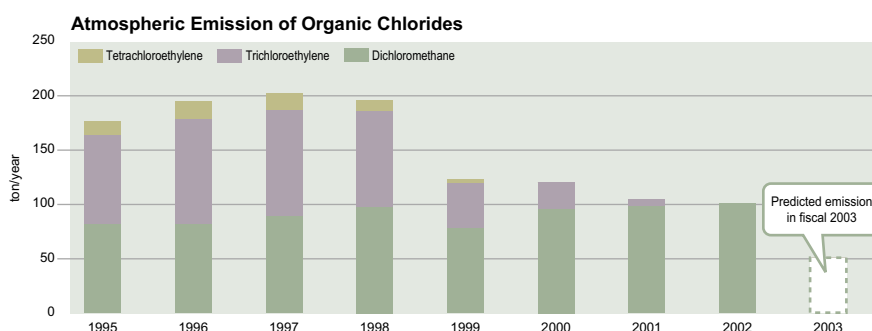
## Reduction of Hazardous Substances and Control of Chemical Substances

### Reduction of Organic Chlorine Compounds

In an effort to reduce the use of organic chlorine compounds, we have been developing, along with the company's environmental principle and customers' green procurement requirements, pollution-free cleansing techniques that are consistent with required product quality. Fiscal 2002 was the last year targeted for complete elimination of atmospheric emission of organic chlorine compounds. Although tetrachloroethylene and trichloroethylene were completely eliminated as shown in the Graph here, dichloromethane was not eliminated. However, we have developed a novel pollution-free cleansing method for sensitized drums for compact copying machines and laser printers and applied the method to a practical produc-

tion line, whereby a new ionized alkaline water is used in place of conventional dichloromethane, rendering the new method more than equivalent to the conventional method in terms of cleansing performance and running costs.

In fiscal 2003, we plan to apply the acquired technologies to the other cleansing lines, thereby achieving complete elimination of organic chlorine compounds as soon as possible.

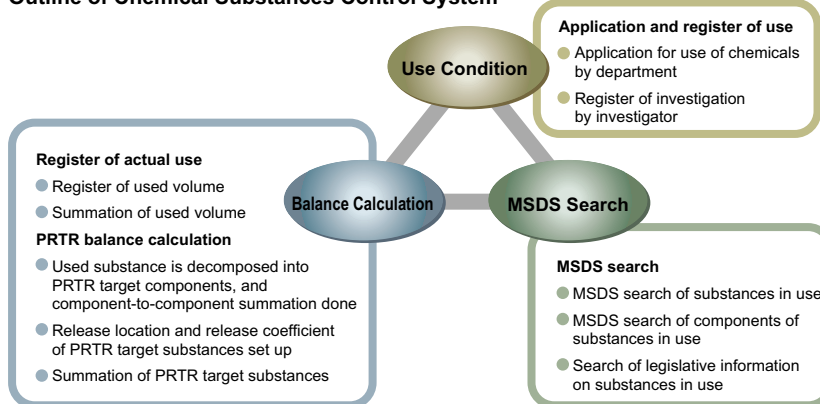


### Control of Chemical Substances

Recently, extensive regional pollution such as acid rain, ozone layer depletion, global warming and endocrine disrupters has become a matter of public concern. Recognizing early the importance of controlling chemical substances, Furukawa Electric has long introduced appropriate in-house control on chemical substances, thereby promoting reduction activities against toxic chemical substances including elimination of ozone layer depletion substances and reduction of organic chlorine compounds. Since fiscal 2001, we have formulated administrative provisions for chemical substances to consolidate the management of chemical substances in company-wide use, whereby a scheme was established for managing the species, handling volume, release and transfer volume of chemical substances used in the entire company, and its supporting system was configured.

Whereas, beginning from fiscal 2001, it became compulsory to report on the release and transfer volume of chemical substances in compliance with the PRTR Law, Furukawa Electric has been actively participating in the PRTR research activities of Japan Federation of Economic Organizations since fiscal 1996, thus acquiring relevant data. The Table here shows the handling, release and transfer volume of main chemical substances in fiscal 2001 and fiscal 2002.

### Outline of Chemical Substances Control System



### Handling, Release and Transfer Volume of PRTR Targeted Substances (Main substances with an annual handling volume over 100 ton)

Unit: ton/year

Substance No.	Name of substance	Handling volume		Release volume		Transfer volume	
		2001	2002	2001	2002	2001	2002
25	Antimony and its compounds	151	107	0	0	2	3
63	Xylene	406	489	16	24	1	1
67	Cresol	347	322	0	1	0	1
68	Chromium and trivalent chromium compounds	169	175	0	0	17	16
145	Dichloromethane	158	141	99	100	60	37
197	Decabromo-diphenylether	164	130	0	0	7	9
227	Toluene	471	624	295	219	55	12
230	Lead and its compounds	638	1,362	0	0	0	0
311	Manganese and its compounds	1,320	1,513	0	0	25	29

note: PRTR Law: Pollutant Release and Transfer Register Law in Japan.

## Zero-Emission Activities

### Reduction of Industrial Waste

We have pursuing reduction activities of outsourced industrial waste disposal since 1993, and in 1996 we set up a medium-term target of “reducing outsourced industrial waste disposal by 40 % over fiscal 1995 in fiscal 2002”. As a result, in fiscal 2002, we achieved a reduction of 57 % over fiscal 1995, which by far outstrips the initial target of 40 %, and the success is probably attributable to the recycling activities at every Works and also to the significant decrease in the production volume under the influence of IT-industry depression since the year before last.

On the other hand, the recycling ratio in fiscal 2002 remained at about 70 % --almost the same as the previous year, in which the increase in waste oil and sludge balanced the decrease in waste alkalis.

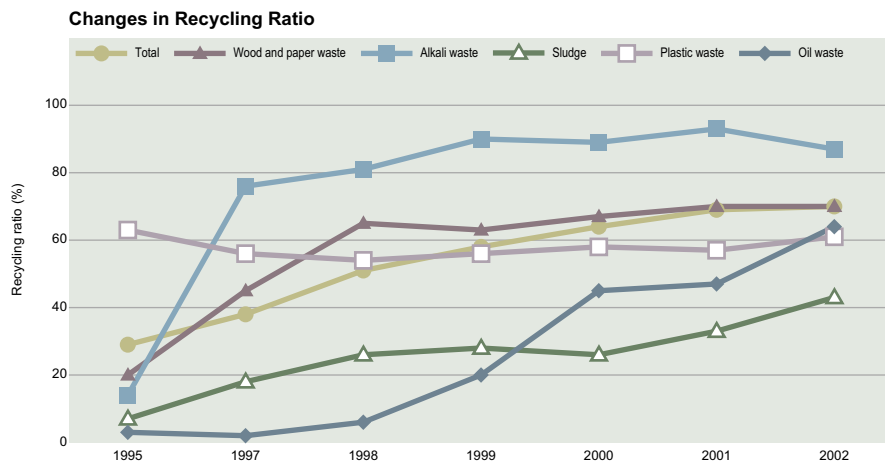
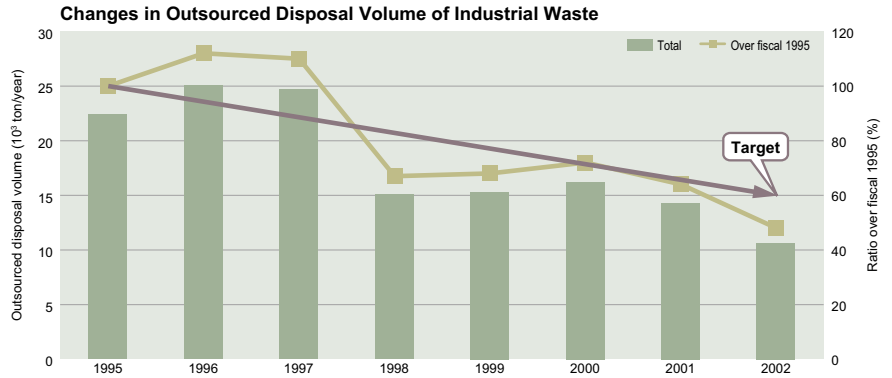
Whereas disposal of waste oil has been outsourced heretofore, it has recently become possible to carry out in-house decomposition, thus enabling recycling.

The recycling ratio of waste plastics does not show significant changes during these several years. This is caused by the fact that optical fiber cable waste from the production line, retrieved cable waste from installation sites and cable waste from affiliated companies account for the major portion of the waste plastics. Optical fiber cable waste is expected to increase in future as much as optical fiber waste, imposing an important task to be tackled in promoting further waste recycling.

### Zero-Emission Activities

In fiscal 2001, as the first-step of zero-emission activities, Furukawa Electric formulated the definition of zero-emission activities, and set up the reduction targets for each Works as well as the entire company.

In fiscal 2002, while all the Works have achieved acquisition of ISO14001 certification, they incorporate zero-emission activities into the targets of their environmental management systems. Thus zero-emission activities have been promoted, whereby sludge with a high ratio of landfill disposal has been successfully recycled.



In fiscal 2003, we intend to pursue recycling of waste plastics with a high ratio of landfill disposal, thereby promoting zero-emission activities further.

#### Definition of Zero-Emission Activities of Furukawa Electric

Activities to reduce the industrial waste commissioned to outsourced disposition that is transported from the Works directly into landfill spots for final disposition.

#### First-Step Target of Zero-Emission Activities

To reduce by fiscal 2005 the volume of industrial waste that is outsourced for final disposition by 50 % over fiscal 2000.

## Green Procurement and Green Logistics

### Green Procurement

Furukawa Electric is promoting green procurement based on material classification, whereby the goods to be purchased are classified into two categories: “general commodities” of non-manufacturing-oriented materials such as utensils and “purchased products” of manufacturing-oriented materials that are related with products and manufacturing processes. Thus within the framework of Medium-Term Plan for Environment Preservation Activities 2005, green procurement is to be promoted toward the two targets.

#### Medium-Term Plan for Environment Preservation Activities 2005

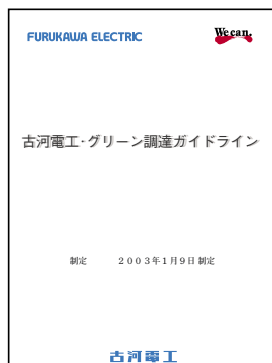
Achievement ratio for general commodity including stationary	100 % in fiscal 2005
Achievement ratio for purchased products from major vendors	100 % in fiscal 2004

In fiscal 2002, the measures mentioned below were carried out.

- 1) Development of guidelines for green procurement
- 2) Development of a list of environmental impact substances
- 3) Discussion on a support system for environmental investigation

Hereafter, the measures mentioned below will be implemented to achieve Medium-Term Plan for Environment Preservation Activities 2005

- 1) General commodities: Commodities in



Furukawa Electric's Guidelines for Green Procurement

conformity with green procurement will be specified clearly to be incorporated into the purchasing system, so that purchasers may easily choose a commodity in conformity with green procurement.

- 2) Purchased goods: A support system for environmental investigation will be constructed.

### Green Logistics

We are also pursuing rationalization of logistics, while securing for reduction of environmental impact and energy conservation.

#### ■ Reduction of Packaging Materials

A wood work center has been set up in the Fukui Works, whereby retrieved skids are repaired to permit reuse. Similarly in Kyushu Furukawa Electric, a drum assembling house was erected to repair retrieved drums for reuse. These measures enable reduction of the volume of wood used. Moreover, package-free of drum-wound products and bundled products is being promoted so as to reduce the use of packaging paper and wood.



Wood work center



Drum assembling house

#### ■ Promotion of Reusable Drum Programs

TEPCO LOGISTICS CO., LTD., an affiliated company of Tokyo Electric Power Company (TEPCO), has established an environment-conscious recycling system. In the system, cable drums used in the delivery of aerial power distribution wire and cable were changed from conventional wooden drums to plastic drums made of recycled sheathing material of retrieved wire. TEPCO LOGISTICS also operates a rental business of reused drums that comprises this recycling system, and Furukawa Electric and its affiliated companies support the drum rental business in terms of the development of recycled material as well as its operational aspects including the manufacture, delivery, retrieval, repair and keeping of drums. An environment-conscious cable delivery drum named “Kantan-kun” can be disassembled after use. When disassembled the drum decreases to one-fifth its original volume permitting single-handed carrying and handling together with efficient storage and keeping. It may be said that this drum is, like the plastic drum mentioned above, a new type that can contribute to resource and energy conservation.

#### ■ Shared Transportation and Delivery

The Japanese Electric Wire & Cable Makers' Association (JCMA) has introduced a joint transportation and delivery program of cable aimed at large-scale construction sites in the core metropolitan areas, in which we participate to reduce the number of delivery vehicles to the sites.

We also participate in the joint transportation program that is promoted by JCMA using ships directed to Hokkaido, thus being engaged in contributing to non-highway transportation as well as energy conservation.

#### ■ Improvement of Loading Efficiency

To improve loading efficiency, expansion of mixed loading and use of large-sized cars is promoted to reduce the number of delivery vehicles, whereby reduction of NOx emission volume of product delivery vehicles is targeted at.



## Eco-Design Activities

### Environment-Friendly Products

Furukawa Electric recognizes that “the 21st century is the century of the environment”, and in response to the needs of society and our customers, is actively working to develop environment-friendly products and technologies. Our aim is to develop a range of commercially viable “environment-friendly” products --products that at every stage, from materials selection, manufacture and use to distribution and disposal, will be of low environmental impact. Moreover, we have established a company-wide organization of Committee for Development of Environment-Friendly Products, in which company-wide strategies are formulated to promote the development of products and technologies.

### Toward Reduction of Environmental Impact

We are developing products that do not create environmental problems when they are used, but further, they do not emit toxic by-products when they are eventually disposed of by incineration or in landfills, thus reducing environmental impact.

### Toward Prevention of Ozone Layer Depletion

We are developing devices and processes that do not use CFCs, together with products adapted to CFC substitutes.

### Toward Realization of Recycle-Oriented Society

We are moving to develop products that reuse waste materials, products that feature common materials to facilitate recycling and products that are biodegradable and thus do not leave residual waste products.

### Toward Prevention of Global Warming

We are developing products that contribute to global warming prevention and energy conservation, such as products with improved efficiency and lightweight as well as clean energy systems.

### Toward Reduction of Environmental Impact

#### ■ ECO Electrical Wire (Halogen-Free Wire)

These wires and cables use no halogens such as PVC, permitting easy disposal by incineration. ECO-ACE general cables for indoor use, ECO-BEAMEX wires for electrical appliances and power cords together with highly flame-retardant optical cables are already in practical use.



ECO-BEAMEX



ECO-ACE

#### ■ Indoor Cable-Protection Conduit Made of Flame-Retardant Resin “ECO-PLAFLEKY”

Since these cable conduits contain no halogen-based flame-retarding agents, they do not emit dioxins nor halogenous gases when combusted, permitting easy recycling.



#### ■ Lead-Free Plating for Electronic Components

Lead-free plating for the leads of ICs, capacitors, connectors, printed circuit boards, etc. has been achieved by using a tin-bismuth alloy instead of the tin-lead material used previously, so that elimination of lead from customers' mounting process can be much improved.



### Toward Prevention of Ozone Layer Depletion

#### ■ CFC-Substitute Compatible Magnet Wire “HPWR II”

These heat- and refrigerant-resistant magnet wire are now in use in the compressor motors of air-conditioning and refrigerating systems using CFC-substitute refrigerants (HFC-R407C, R410A, R134a).



#### ■ Copper Tube for Use with CFC-Substitutes Furukawa Multi-Grooved Tube “FMGT”, “Furukawa SuperClean Tube”

These are heat exchanger copper tubes for use with CFC-substitute refrigerants to reduce the ozone layer depletion. They have reduced oil residuals in the tube's inner surface and are internally multi-grooved to improve heat-exchanging performance.



#### ■ Nitrogen-Atmosphere Reflow Oven “SALAMANDER”

This reflow oven carries out the reflow soldering process during the mounting of electronic components in a nitrogen atmosphere. This eliminates the need to cleanse completed circuit boards, obviating the use of CFCs.



#### ■ Functional Resin-Coated Aluminum Sheet “FUSCOAT”

These functional resin coated aluminum sheets provide enhanced formability, corrosion resistance, scuff- and fingerprint-resistance, resistance to chemicals, electrical conductivity, ease of printing, and anti-bacterial and anti-mold properties. They are also self-lubricating, so that disposal of the lubricants and cleansers formerly used in the stamping process is eliminated.



Product	Use	Feature
■ ECO electrical wire (ECO-ACE, ECO-BEAMEX)	Home appliances, Power distribution, Communication	Halogen-free, lead-free
■ Halogen-free wire harness	Automobile	Halogen-free, lead-free
■ Lead-free plating for electronic Components	Automobile	Lead-free
■ Lead-free plated parts for electronic equipment	Electronic parts	Lead-free
■ ECO bus duct	Power distribution	Halogen-free
■ Indoor cable-protection conduit made of flame-retardant Resin (ECO-PLAFLEKY)	Indoor electrical wire laying	Halogen-free, lead-free
■ CFC-substitute compatible magnet wire (HPWR II)	Home appliances, automobile	Compatibility with CFC substitutes
■ Copper tube for use with CFC-Substitutes (FMGT / Furukawa SuperClean Tube)	Home appliances	Compatibility with CFC substitutes
■ Nitrogen-atmosphere reflow oven (SALAMANDER)	Electronic equipment	Elimination of CFCs
■ Functional resin-coated aluminum sheet (FUSCOAT)	Electronic equipment	High lubrication, elimination of cleansing
■ Recycled aluminum can stock	Cans	Recycling
■ Recycled aluminum distribution wire	Electrical wire	Recycling
■ Biodegradable resin foam (BIO ACE)	Packaging material	Biodegradability
■ Underground cable duct made of cable waste (KOHTA KUN)	Electrical wire laying	Reuse of material
■ Recyclable pallet	Conveyance	Reuse of material
■ Weed barrier sheet	Sheet	Reuse of material
■ High-reflectivity foamed sheet (MCPET)	Lighting	Energy conservation
■ High-Performance heat-exchangers material	Automobile	Lightweight, energy conservation
■ Rainwater recycling system	Emergency reservoir	Effective use of sunshine and rainwater
■ Micro heat-pipe	Electronic equipment	Energy conservation
■ Solar photovoltaic system	Electric power	Clean energy
■ Deep sea solidification of CO <sub>2</sub>	Electric power plant	Reduction of CO <sub>2</sub>

## Toward Realization of Recycle-Oriented Society

### ■ Recycled Aluminum Can Stock

The use of can stock made from used beverage cans contributes to promoting aluminum recycling.



### ■ Biodegradable Resin Foam "BIO ACE"

When these foamed sheets used in packaging and wrapping are disposed of in landfills, they are completely broken down by the action of microorganisms in approximately one year. We have developed an environment-friendly foaming process based on our proprietary technology.



### ■ Underground Cable Duct Made of Cable Waste "KOHTA KUN"

This underground cable duct with multiple bores makes effective use of plastic waste. The product has acquired the ECO mark. "KOICHI KUN" duct for information box use is also highly reputed.



## Toward Prevention of Global Warming

### ■ High-Reflectivity Foamed Sheet "MCPET"

Furukawa Electric is the first in the world to succeed in the commercial-scale production and marketing of white sheets made of extra-fine foamed polyethylene terephthalate (PET). Bubble diameter is so small that optical performance is outstanding, with a total reflectivity of 99 % or more.



### ■ High-Performance Heat-Exchangers Material

We have developed aluminum radiator and air-conditioner materials for automotive applications that are lighter in weight, promoting better fuel economy and reducing CO<sub>2</sub> emissions.



### ■ Rainwater recycling system

This system aims at making effective use of sunshine and rainwater, blessings bestowed by nature. It is useful as an emergency reservoir against disasters and suppression of rainwater flooding in watershed areas.



### ■ Micro Heat-Pipe

Furukawa Electric's micro heat-pipe provide a solution to the problems of heat-dissipation and cooling of electronic equipment, making possible greater availability of computing power along with energy conservation.





## Eco-Design Activities

### Recycling Technologies

#### Recycling System of Electric Wires and Cables

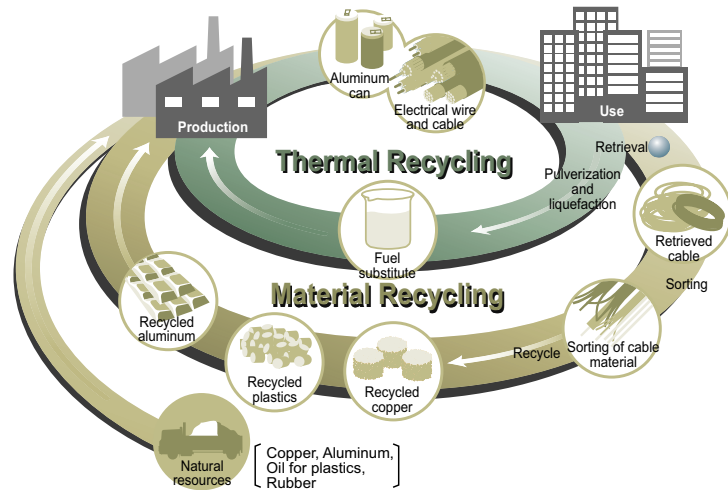
Recycling systems of used power cables and communication cables from customers have been established, enabling almost 100 % recycling of copper and aluminum conductors. Covering materials are reused in cables as recycled plastics, or as fuel.

#### National Project for the Development of Recycling Technology

With respect to the recycling technology of sheathing material for electric wire, thermal recycling through the development of liquefaction and pulverization was studied, under the aegis of the Ministry of International Trade and Industry (currently the Ministry of Economy, Trade and Industry), jointly by the Japan Electric Cable Technology Center (JEC TEC) and cable manufacturers. Material recycling technology for cross-linked polyethylene was also developed under the aegis of the New Energy and Industrial Technology Development Organization (NEDO).

With respect to aluminum, funding from NEDO made it possible for the Japan Research and Development Center for Metals (JRCM) and seven manufacturers of aluminum rolled products to develop technology to promote aluminum recycling.

#### Recycling Technology Aimed at Recycling-Oriented Society



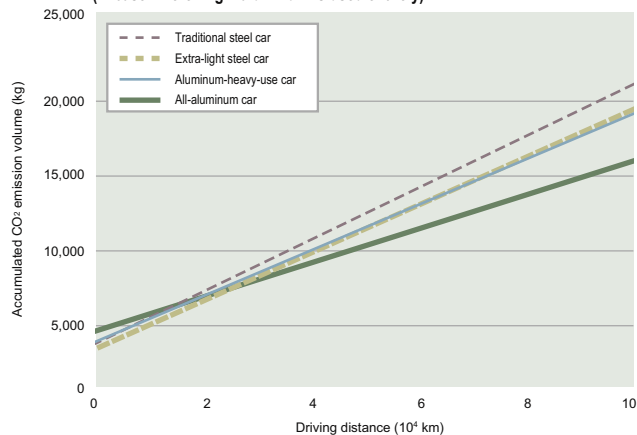
#### LCA (Life Cycle Assessment)

Furukawa Electric is implementing life cycle assessment (LCA) of aluminum products participating in the activity of Japan Aluminium Association.

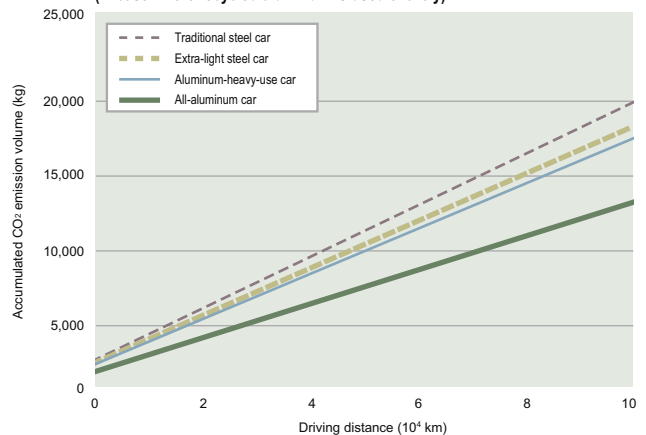
The LCA with regard to weight-reduction effects of structural members for automobiles reveals that, when virgin metal is used entirely, an aluminum-dominant car can reduce the accumulated CO<sub>2</sub> emission after a driving distance of 14 thousand km, and an all-aluminum car af-

ter 16 thousand km, in comparison with a conventional steel car. When recycled aluminum is used entirely, an aluminum car can reduce CO<sub>2</sub> emission in whatever driving distance.

Relationship between accumulated CO<sub>2</sub> emission volume and distance driven (in case where virgin aluminum is used entirely)



Relationship between accumulated CO<sub>2</sub> emission volume and distance driven (in case where recycled aluminum is used entirely)



Excerpt from "Aluminum", May/June, 2001

## Environmental Accounting

Costs, relevant economic benefit, and physical benefit of activities for environmental preservation are described below. These are tabulated in conformity with the environmental accounting

guidelines published by the Ministry of the Environment. Also for environmental accounting of our affiliated companies, which appears on this brochure anew, please see page 22.

Covered business bases: All the business bases of Furukawa Electric  
Covered period: From April 1, 2002 to March 31, 2003

### Environmental Conservation Cost

Unit : million yen

Category	Major contents	Amount of cost*
(1) Cost to reduce environmental impact caused by the production or service activities of business, generated within the business area (Business area cost)	Pollution prevention, global environmental preservation, re-source recycling, etc.	2,602
(2) Cost to suppress environmental impact caused by the production or service activities of business, generated within the upstream and downstream of business area (Up- and down-stream cost)	Retrieval and recycling of containers, packaging, drums, etc.	529
(3) Cost of environmental management activities (Administration cost)	Establishment, maintenance for environmental management systems; maintenance for environmental preservation; measurement of environmental impact	537
(4) Cost of pro-environmental research and development activities (Research and development cost)	R&D of environment-friendly products, research in substitutes for toxic substances, R&D of environmental impact reduction in manufacturing processes, etc.	887
(5) Cost of pro-environmental social activities (Social activity cost)	Publication of information, greening, etc.	9
(6) Cost of remediation (Environmental remediation cost)	Assessment for environmental impact, inquiries and measures for soil contamination and groundwater, etc.	189
	Total	4,753

\* The amount of cost excludes investment cost

### Investment and Research Costs

Unit : million yen

Investment and Research Costs	Amount
Environment-related investment	806
Entire investment cost	11,900
Entire research cost	14,200

### Economic Benefit Associated with Environmental Preservation Activities

Unit : million yen

Content	Amount
(1) Income gained by recycling	125
(2) Reduction in waste disposal costs through recycling	-122
(3) Reduction in energy costs through energy conservation	514
Total	517

### Physical Benefit Associated with Environmental Preservation Activities

Environmental harm material to discharge	Unit	Amount	Reduction (Difference from last year)
Industrial waste (excluding waste from recycled resources)	ton	10,657	3,648
Energy consumed (crude oil basis)	kℓ	325,355	12,662
Emission of volatile organic chemicals	ton	101	5
CO <sub>2</sub> emission	C-ton	162,945	-3,659
SO <sub>x</sub> emission	ton	92	-18
NO <sub>x</sub> emission	ton	987	-106
Soot emission	ton	60	3