

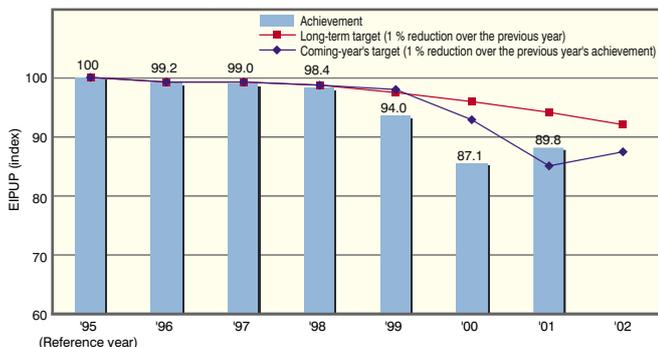
# Environment Preservation Initiative

## Energy-Conservation and Global Warming Prevention

### Progress, Organization and Targets of Energy-Conservation Activity

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 founded in April 1994 initiating company-wide activities under the participation of all plants involving those that are not designated as the energy management factory. In 1997 the company-wide energy conservation index was changed to EIPUP specified in the law, and the target was set to "1 % reduction over the previous year in terms of EIPUP".

#### Changes in the Company-Wide EIPUP



Furukawa Electric's production volume decreased substantially last fiscal year. The production volume of eight out of nine Works that are designated as Type 1 Designated Energy Management Factory decreased to 71~94 %. In terms of EIPUP, six Works declined by 1.4~15 %. Although efforts were made to save energy by such measures as improvement in air-mixing ratio for combustion, reduction of queuing time loss and productivity improvement, the weighted average of EIPUP of the entire company degraded by 1.47 % over the previous year. With reference to fiscal 1995, however, the current EIPUP is 89.8 % showing an annual improvement rate of 1.8 % on average.

### Results of Energy-Conservation Activities in Fiscal 2001

Nine Works underwent plant inspection by the field offices of the Regional Bureaus of Economy, Trade and Industry as Type 1 Designated Energy Management Factory. The inspection was carried out for the performance of fiscal 2000, and an evaluation was made respectively as to "improvement in EIPUP", "if it deteriorated, was attribution analysis appropriately done?" and "whether or not energy was used in compliance with the criterion judgement in the Energy Conservation Law?".

As a result, all the nine Works passed the inspection as shown in the table below. We think the implementation of energy conservation measures and the formulation of management standards per each facility were appreciated together with the

use of energy in compliance with such standards.

Some Works failed to achieve an annual reduction of 1 % in EIPUP, because product segmentation changed to increase in energy-intensive products.

Hereafter, we will enrich the items and contents of these standards, thereby making efforts to promote effective use of energy.

Name of Works	Date of inspection	Score		METI Field Office in charge	Notes
		Thermal	Electrical		
Mie	Aug. 2, 2001	80	89	Chubu	
Chiba	Sept. 25, 2001	89	82	Kanto	
Nikko (Sheet Plant)	Oct. 11, 2001	81	92	Kanto	
Osaka	Jan. 10, 2002	92	94	Kinki	
Fukui	Jan. 17, 2002	100	98	Kinki	
Shiga	Jan. 25, 2002	—	99	Kinki	Thermal energy excluded
Nikko (Kiyotaki District)	Feb. 7, 2002	93	94	Kanto	
Hiratsuka	Feb. 14, 2002	—	98	Kanto	Thermal energy excluded
Oyama	Feb. 28, 2002	96	96	Kanto	

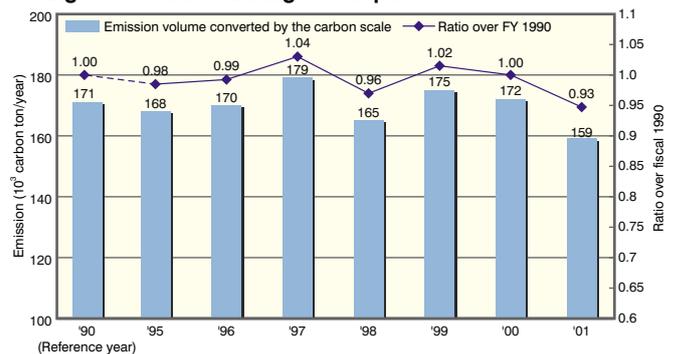
Pass score is 80 point

### Changes in Global Warming Gas Impact

CO<sub>2</sub> emission converted by the carbon scale for fiscal 2001 decreased considerably to 93 % of fiscal 1990.

This is due to the decrease in the energy use caused by production reduction, and to the energy-conserving measures promoted heretofore.

#### Changes in Global Warming Gas Impact



The carbon conversion scale used is the one announced by the Japan Business Federation. The scale for fiscal 2000 is used since a new scale for fiscal 2001 is not announced yet.

### Energy-Conservation Activities in Future

We intend to achieve saving of EIPUP by 1 % or more every year, through promoting energy-conservation activities such as provision of management standards and the like that conform to the judgement of the Energy Conservation Law.

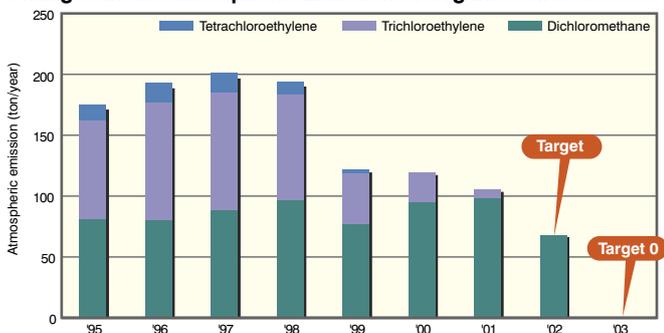
## Reduction of Organic Chlorides

In fiscal 2001, in succession to fiscal 2000, we exercised self-imposed control to reduce the atmospheric emission of organic chlorides by 80 % compared to fiscal 1995.

Replacement of cleaners by their substitutes was delayed due to quality problems, so that the reduction for fiscal 2001 was 40 %, which was insufficient to achieve the target. But trichloroethylene was eliminated in December 2001 following the elimination of tetrachloroethylene in fiscal 2000, leaving only dichloromethane for elimination.

For fiscal 2002, considering the working environment and the importance of environmental influences of using these organic chlorides, reduction activities will be promoted aiming at complete elimination of these substances by the end of the fiscal year, as was scheduled in the initial plan.

**Changes in the Atmospheric Emission of Organic Chlorides**

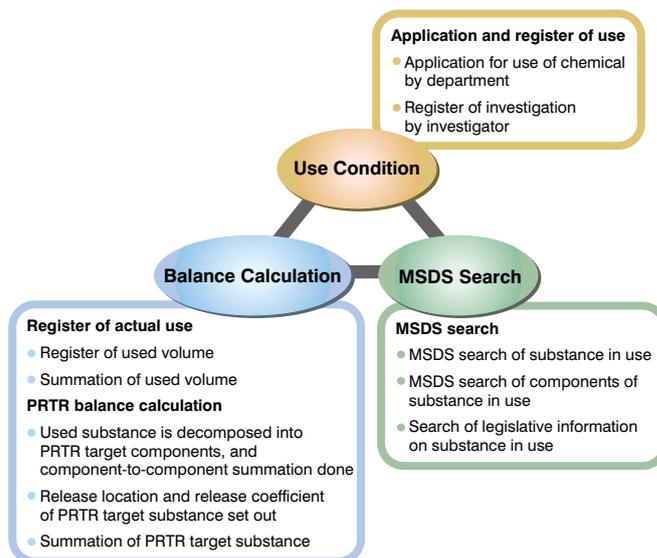


## Control of Chemical Substances

Recently, the extensive regional pollution by chemical substances has become a matter of public concern such as acid rain, ozone layer depletion, global warming and endocrine disrupters. In view of the importance of controlling chemical substances, Furukawa Electric has long introduced appropriate in-house controls on chemicals, thereby promoting toxic chemical substance reduction activities including elimination of ozone layer depletion substances and reduction of organic chlorides.

Beginning in fiscal 2001, we have formulated administrative provisions for chemicals to consolidate the management of the company-wide use of chemicals, whereby a scheme was established for managing the kind, handling volume, release and transfer volume of chemicals used in the entire company, and its supporting system was configured. This made it possible for everyone in the company to search and browse the material safety data sheet (MSDS) of chemicals in use, thus allowing for appropriate treatment of a given substance. Using the component-based management of chemicals enabled by this scheme, in addition to the risk evaluation of chemicals, we will promote further the reduction activities of toxic chemicals.

## Outline of Chemical Substance Control System



The PRTR Law came into force in April 2000, strengthening the control on chemical substances. In fiscal 2001, notification of release and transfer volume of target substances became compulsory. The table below shows the annual summations of release and transfer volume of major substances, covering all the Works. It should be noted that in reality they are controlled for each Works respectively in compliance with the PRTR Law.

**Changes in Handling, Release and Transfer Volume**

Name of chemicals	Handling volume (ton/year)			Release volume (ton/year)			Transfer volume (ton/year)		
	1999	2000	2001	1999	2000	2001	1999	2000	2001
Toluene	674	576	471	400	350	312	1	3	54
Dichloromethane	96	136	158	75	95	99	0	0	60
Trichloroethylene	39	27	9	32	23	6	2	3	0
Xylenes	604	479	406	50	45	16	1	1	1
Others	211	333	3,108	9	9	9	73	56	77
Total	1,624	1,551	4,152	565	521	442	77	63	192

\* The method of summation for fiscal 2001 is different from that of fiscal 2000 and before in that:

1. Summation for fiscal 2000 and before involves 172 substances that the Japan Business Federation defined on a self-imposed basis. For fiscal 2001, 435 substances specified in the law as the first and second kind are involved.
2. Summation for fiscal 2000 and before excludes the transfer volume of industrial wastes that were reused.

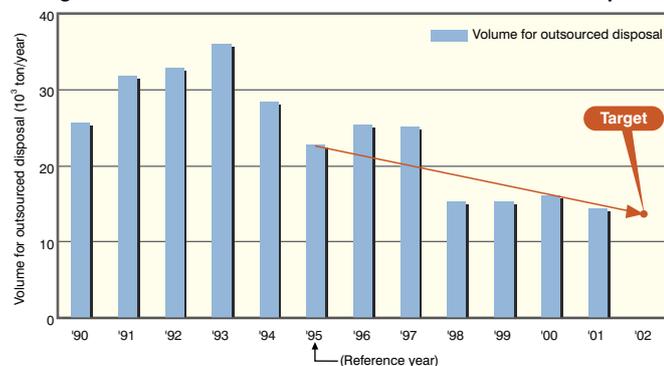
## Reduction of Industrial Wastes and Zero-Emission Activities

### Industrial Wastes

We have been pursuing reduction activities of outsourced disposal of industrial wastes since 1993. In 1996 a strengthened interim goal was formulated to reduce the volume by 40 % with reference to fiscal 1995 by fiscal 2002, and in accordance with this, the target for fiscal 2001 was set as a 35 % reduction.

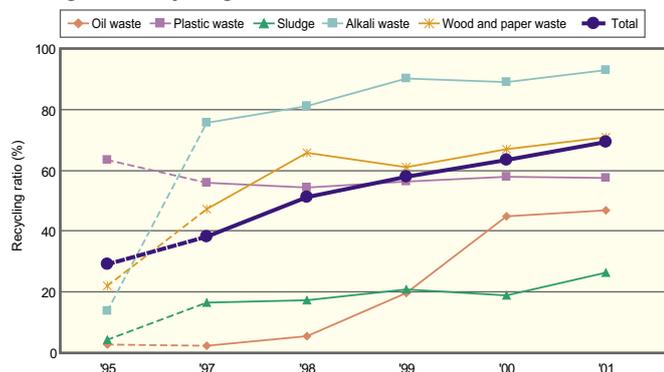
The target for fiscal 2001 has been achieved due to the improved recycling ratio and the decreased production volume. Because the latter factor contributed to the target fulfillment to a great degree, we will promote reduction activities further taking into account possible recovery of production volume in the future.

#### Changes in the Volume of Industrial Waste for Outsourced Disposal



The recycling ratio satisfactorily improved to about 70 % in fiscal 2001, which results from the successful recycling of sludge, alkali waste and wood and paper waste. On the other hand, recycling of oil waste and plastic waste is seeing limited success due to low oil fraction or concern about dioxin production.

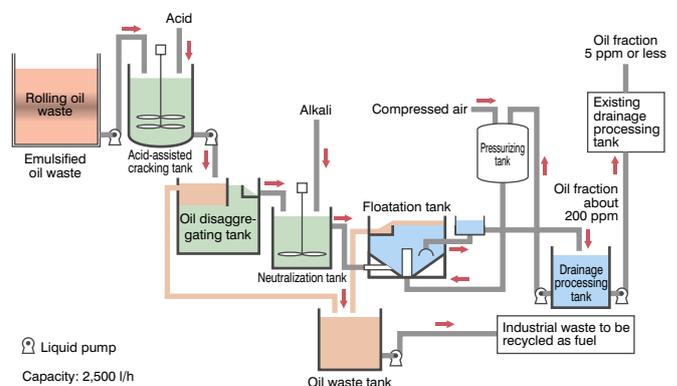
#### Changes in Recycling Ratio



### [Example of Recycling]

Below is described a recycling process for rolling oil.

Because modern high-performance rolling oil for aluminum is excellently emulsified, it hardly separates into oil and water when it is left at rest. Thus, most of the rolling oil waste are usually disposed of as industrial waste. Furukawa Electric has succeeded in developing a process where the emulsified oil waste is disaggregated to yield oil scum using an acid-assisted cracking apparatus that is based on the company's proprietary technology. The process is patented. The separated oil scum is disposed of as industrial waste, on an outsourcing basis, to be recycled as fuel. Hereafter, we plan to refine the oil scum within the company to use it as fuel.



### Zero-Emission Activities

The first stage of Zero-Emission Activities begins from fiscal 2002.

**The first stage of Zero-Emission Activities:**  
**To reduce the volume of industrial waste that is transported from the Works directly to the landfill lots by half with reference to fiscal 2000 by fiscal 2005.**

The following activities were carried out in fiscal 2001 in preparation for launching on the Zero-Emission Activities for fiscal 2002.

- \* Definition of Zero Emission
- \* Target setting of each Works' reduction and that of entire company
- \* Consciousness raising of employees

At the Chiba Works, slogans for the activity are printed on the paper cups used throughout the Works in an effort to raise the consciousness of employees.



Paper cup made of non-wood paper

## Situation of Soil and Water Pollution and Countermeasures

Furukawa Electric has been conducting soil and subsoil water pollution investigations, which are aimed at those Works where heavy metals or organic chlorides had been used before.

As a result, it was found that the soil in the premises of the Nikko Works and its company-owned peripheral areas was polluted by selenium, arsenic, lead and cadmium; and the subsoil water in the Works' premises by selenium, arsenic and lead. These facts have been reported to the public administration, and are under in-depth examination. These cases of pollution evidently remain within the Works premises or its company-owned peripheral lands, having no influence on the outskirts. Moreover, this heavy metal pollution was apparently caused by leakage from the facility for a silver gathering process of copper refinery business that was discontinued in 1988. Therefore, there are no possibilities of new pollution. We will continue to disclose the situation of the pollution at our website.

### Data concerning Soil and Water Pollution at the Nikko Works

Works	Polluted object	Pollutant	Concentration (mg/L)	Ratio over environmental reference (times)	Investigation and countermeasures
Nikko Works	Soil in the premises	Selenium	43	4,300	Under in-depth examination
		Arsenic	1.5	150	
		Lead	0.22	22	
		Cadmium	0.019	1.9	
	Subsoil water in the premises	Selenium	3.5	350	Under in-depth examination
		Arsenic	0.086	8.6	
		Lead	0.015	1.5	
Soil in company-owned lands	Selenium	0.54	54	Under in-depth examination	
	Arsenic	0.08	8		

## Disposition and Storage Situation of PCB

Furukawa Electric has been notifying and storing polychlorinated biphenyl (PCB) waste appropriately in compliance with the law, in which high-temperature incineration has hitherto been the only disposal method approved for the material.

New detoxifying disposal methods other than the high-temperature incineration method were approved afterward, followed by the enforcement of the Law Concerning Special Measures against PCB in July 2001, whereby it became compulsory to detoxify and dispose of PCB waste in fifteen years.

From December 2001 through February 2002, the Chiba Works detoxified, under permission of the authorities concerned, 1,500 liter of PCB insulation oil that had been stored in the Works using a new chemical process. The chemical process is called "Ontario Hydro Technologies' Sodium Dispersion method" (OSD method) and is held by Nuclear Fuel Industries, Ltd., an affiliated company of Furukawa Electric. It does not emit any wastewater nor waste gas associated with the treatment, thus giving low environmental impact. The PCB waste in the other Works will be properly stored and controlled until facilities for disposal are ready.



Full view of PCB disposal facility at Chiba Works



Storage situation of PCB

## Green Purchasing

Green purchasing is being implemented in the three fields as follows:

1. With respect to the raw material, parts and subsidiary material which constitute major environmental impacts in the framework of the Environmental Management System of each Works, we ask the supplier of these materials reduction of toxic substances, simplification of packages, improvement in recyclability and strengthening environmental management.
2. In order to purchase and use such raw material, parts and subsidiary material with reduced environmental impact, Furukawa Electric has been implementing process improvement and product development such as:
  - \* Fuel for melting furnace or boiler has been shifted from heavy fuel oil to diesel oil
  - \* Detergents for metal products have been changed from organic chlorides to hydrocarbon detergents or ionized alkaline water
  - \* Offer of products using recycled plastics or halogen-free plastics
3. We are promoting vigorous purchase of the 150 procurement items specified in the Law on Promoting Green Purchasing.

## Initiatives in Logistics

We are addressing the issue of upgrading logistics in view of reducing environmental impact and energy conservation.

### Promotion of Recycling and Reuse

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 plastics 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.

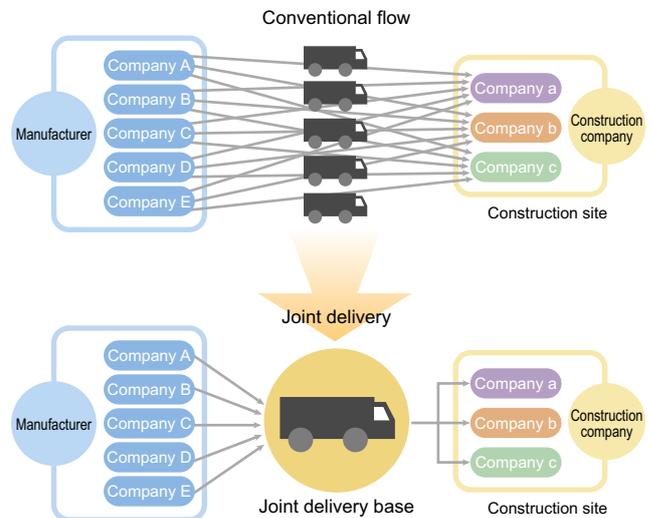
Furukawa Electric has developed further an environment-conscious cable delivery drum named "KANTAN KUN". The drum is designed essentially based on the concept of 3Rs, i.e., Recycle --steel is used to permit easy recycling of resource; Reuse --ease of assembly and disassembly enables repeated use; and Reduce --being comprised of minimal parts, the drum can reduce space in keeping and transportation when disassembled after use. More specifically, the cable drum reduces to one fifth of its original volume when disassembled, permitting single-handed carry and ease of transportation and handling together with efficient storage and keeping. Thus it may be said this cable drum is, along with the plastic drum mentioned above, a new type of drum that can contribute to resource and energy conservation.

### Joint Transportation and Delivery

The Japanese Electric Wire & Cable Makers' Association (JCMA) has introduced a joint transportation and delivery program of cable aimed at large-scaled construction sites in the core metropolitan areas, in which we participate to reduce the number of delivery vehicles to the sites. In fiscal 2001, we covered five sites including ongoing ones mainly in the Tokyo area, and it is estimated that the number of delivery vehicles was saved by 40~50 % compared to conventional cases. Major sites covered include "Marunouchi Building" and "Shiodome D Minami-Gaiku Mansion".

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

### Improvement in Transportation of Electrical Wire



### Improvement of loading efficiency

Expansion of mixed loading and use of large-sized cars is promoted to reduce the number of delivery vehicles by upgrading loading efficiency. In this program, a target is set to reduce the NOx emission volume due to product transportation cars in terms of ton-by-kilometer by 10 % in fiscal 2002 with respect to the first half of fiscal 2001.

### Reduction of Packaging Material

Packaging-less delivery of products at the logistics center in the form of drum or bundle is promoted to reduce the volume of packaging paper and wood.



Reusable cable delivery drum made of recycled cable material