

VI Environmental Activities of Affiliated Companies

Overview of Consolidated Pro-environmental Management Activities and Environmental Accounting

Activities on Consolidated Pro-environmental Management

In June 2000, we established the Liaison Meeting for Consolidated Environmental Management together with our affiliated companies. Through this Group, we have studied environment-related laws and regulations; monitored the situation of environmental preservation activities at affiliated companies; and engaged in other related activities.

In October 2002, we issued, to affiliated companies, a declaration on environmental activities, which includes the following slogan: “We, as a corporate group, must promote environmental preservation activities; reduce environmental risks; and thereby contribute to the society and make the society enhancing its appreciation to our activities.”

The 40 affiliated companies as objects of consolidated pro-environmental management, as well as items of their environmental activities, are shown here.

(Items of Environmental Management Activities)

note-1: the mark “O” indicates that the company execute the activity item taken the mark.
note-2: Details of 8 items are as follows.

ISO14001:

achieving a certification

Environmental accounting:

executing environmental accounting, and showing its results on this publication

System:

established an environmental management system

Global warming:

having the plan for reducing/eliminating greenhouse gases

Industrial wastes:

having the compiling data on industrial wastes

Organic chemicals:

plan for reducing/eliminating organic chlorine compounds

PRTR:

reporting to PRTR/listing chemical substances

Soil:

investigating soil/groundwater pollution

No	Name of business establishment/company	ISO14001	Environmental accounting	System	Global warming	Industrial wastes	Organic chemicals	PRTR	Soil
1	Access Cable	○		○	○	○	○	○	○
2	ASAHI ELECTRIC WORKS	○		○	○	○	○		○
3	INOUE MANUFACTURING	○		○	○	○	○	○	○
4	NTEC			○	○	○			
5	F-CO	○		○	○	○		○	
6	FCM	○		○	○	○	○	○	○
7	OKANO ELECTRIC WIRE	○		○	○	○		○	
8	OKUMURA METALS	○		○	○	○	○	○	○
9	Kyusyu Furukawa Electric	○		○	○	○	○	○	○
10	KYOWA ELECTRIC WIRE	○		○	○	○	○	○	○
11	SUNSUNNY INDUSTRY			○	○	○			
12	SHODENSHA	○		○	○	○	○	○	○
13	SEIWA GIKEN	○		○	○	○			
14	TOTOKU ELECTRIC	○	○	○	○	○	○	○	○
15	TOHOKU FURUKAWA ELECTRIC	○		○	○	○		○	
16	Nikkei Kakoh			○	○	○	○	○	○
17	Nippon Foil Mfg.	○	○	○	○	○		○	
18	Higashi Nihon Tanzou	○		○	○	○			
19	FURUKAWA ALTEC			○	○	○			
20	Furukawa Industrial Cable			○	○	○	○	○	○
21	Furukawa Infonet	○		○	○	○			
22	Furukawa Information Technology			○	○	○			
23	Furukawa Elecom			○	○	○			
24	Furukawa Electric Engineering Service	○		○	○	○			
25	FURUKAWA AUTOMOTIVE PARTS	○		○	○	○	○	○	○
26	Furukawa Color Aluminum	○		○	○	○		○	○
27	Furukawa Circuit Foil			○	○	○		○	○
28	FURUKAWA SANGYO			○	○	○			
29	Furukawa C&B	○		○	○	○			
30	Furukawa Industrial Plastics	○		○	○	○		○	○
31	Furukawa Precision Engineering			○	○	○	○	○	
32	Furukawa Engineering & Construction	○	○	○	○	○			
33	Furukawa Battery	○	○	○	○	○	○	○	○
34	FURUKAWA LOGISTICS	○		○	○	○			
35	Furukawa Techno Material			○	○	○	○	○	○
36	Furukawa Life Service			○	○	○			
37	Miharu Communications			○	○	○			
38	Yamada Keikinzoku	○		○	○	○			
39	Riken Electric Wire	○	○	○	○	○		○	
40	Riken Fitel			○	○	○			

40 affiliated companies

Overview of Consolidated Pro-environmental Management Activities and Environmental

Activity Items and Target Values for Consolidated Pro-environmental Management

Outline of activities in the consolidated pro-environmental management is written under. We established, as for the period from fiscal 2003 to fiscal 2005, concrete item and target values shown in the table at the right, and put into operation.

■ Outline of Activities

- (i) Establishing environmental targets and promoting related activities
- (ii) Supporting and managing activities
- (iii) Exchanging information and publishing the situation of activities
- (iv) Reflecting these activities on the strategy of the company of our group

	Item	Target value etc.	Target year
1	Achieving ISO14001 certification	Achieving ISO14001 certification	fiscal 2005
2	Reducing industrial wastes	Zero emission: reducing wastes, directly disposed at reclamation sites, by 50% from 2000	fiscal 2005
		Reducing industrial wastes (except for the recycled portion) by 30% from 2000	fiscal 2005
3	Reducing greenhouse gases	Reducing CO ₂ emission by 5% from 2000	fiscal 2005
		Reducing CO ₂ emission by 10% from 2000	fiscal 2008
4	Of chemical substances, enhancing the control and also reducing	Totally discontinuing the use of HFC and PFC; reducing SF ₆ emission into the air by 50% from 2000	fiscal 2005
		Reducing the emission of harmful organic chlorine compounds by 50% of the value in 2000	fiscal 2005
5	Indexing the progress of pro-environmental management	Totally eliminating the emission of harmful organic chlorine compounds	fiscal 2008
		Executing environmental accounting (for 2002) (*)	fiscal 2003
6	Establishing an environmental management system	Making the organization and responsible person definite, controlling data related	fiscal 2003
7	Issuing an environmental report	Starting to inform about member of our group on our "Environmental Report" from 2003 (on activities in 2002)	fiscal 2003

* Environmental accounting will be introduced to the following companies: TOTOKU ELECTRIC, Nippon Foil Mfg., Furukawa Engineering & Construction, Furukawa Battery, Riken Electric Wire

Data on Consolidated Pro-environmental Management, Environmental Accounting

This year, we started compiling environmental data on five relatively large affiliated companies. As in the case of Furukawa Electric, the compilation has been made according to the guidelines on environmental accounting, published by the Ministry of the Environment. The following are data for fiscal 2002, comprising costs of environmental preservation, economic effects resulting from measures for environmental preservation, and corresponding effects as measured in terms of physical quantities.

Object companies: TOTOKU ELECTRIC, Nippon Foil Mfg., Furukawa Engineering & Construction, Furukawa Battery, Riken Electric Wire
Object 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)	Activities for preventing pollution, conserving the global environment, recycling resources.	370
(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 downstream cost)	Withdrawal and recycling of containers, packages and plastic articles	41
(3) Cost environmental management activities (Administration cost)	Establishment, maintenance for environmental management systems; maintenance for environmental preservation; measurement of environmental impact	56
(4) Cost of pro-environmental research and development activities (Research and development cost)	Development of ecologically safe products	33
(5) Cost of pro-environmental social activities (Social activity cost)	Participation in official events for environmental purification	1
(6) Cost of remediation (Environmental remediation cost)	Repair of corrosion-induced damages to underground wastewater piping	1
	Total	501

* The amount of cost excludes investment cost

Investment and Research Costs

Unit : million yen

Investment and Research Costs	Amount
Environment-related investment	663
Entire investment cost	1,741
Entire research cost	1,601

Economic benefit Associated with Environmental Preservation Activities

Unit : million yen

Content	Amount
(1) Income gained by recycling	89
(2) Reduction in waste disposal costs through recycling	14
(3) Reduction in energy costs through energy conservation	19
Total	121

Physical Benefits Associated with Environmental Preservation Activities

Environmental harm material to discharge	Amount	Reduction (Difference from last year)
Industrial waste (excluding waste from recycled resources)	ton	78
Energy consumed (crude oil basis)	kℓ	6,545
Emission of volatile organic compounds	ton	-1
CO ₂ emission	C-ton	2,429
SOx emission	ton	-5
NOx emission	ton	91
Soot emission	ton	-8

Initiatives of Affiliated Companies

OKANO ELECTRIC WIRE CO., LTD.

Head office / factory: 1-5-28 Fukaminishi, Yamato-shi, Kanagawa-ken
 Number of employees: 202
 URL: <http://www.okano-cable.co.jp/>

Since starting the manufacture of telephone cords in 1928, Okano Electric Wire has provided various communication cables to various industries. In cooperation with related companies, Okano Electric Wire is expanding its business to such fields as optical fiber cables and connectors; optical components; and the manufacture and assembly of information/communication equipment. Recently, the Company has begun contributing to the conservation of the global environment by starting an environmental business - the sale of equipment for raw garbage recycling. In December 1999, the Company achieved ISO14001 certification; it has also passed the first audit for renewing certification. Currently, Okano Electric Wire is pursuing its business under the 2nd Mid-term 3-year Plan, which started in fiscal 2002.

Environmental Preservation Activities

Okano Electric Wire's "basic philosophy" runs as follows: "We must work toward the better conservation of the environment, based on the perception that the protection of the global environment is the most important element of a company's effort to fulfill its social responsibilities. By so doing, we must contribute to the realization of a happy and affluent society, which promises safety to all people." We adhere to this philosophy in our environmental preservation activities.

In our present business activities, we do not use materials or equipment that can have a significant environmental impact on air, water or soil. Accordingly, we emphasize the following three items in our environmental preservation activities:

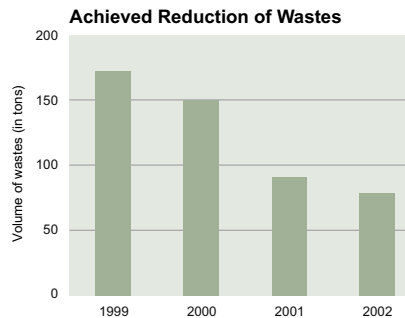
- (i) Efforts for manufacturing electric wire in consideration of environment-friendly mind and ecologically safe
- (ii) Efforts for reducing greenhouse gases by energy and resources conservations

(iii) Reduction of wastes resulting from business activities

(Note) "Wastes" include those which are treated at some costs.

The Graph here shows the achieved reduction of wastes, as an example of the results of our activities. Wastes generated at the manufacturing process have decreased to 54 % of the volume at 2000 in three years.

Regarding efforts for manufacturing ecologically safe electric wires, we have worked for the dehalogenation of sheath materials. As a result, we completed the shift to halogen-free materials for our main products by the end of fiscal 2002. This move has satisfied the demand of many of our customers. As for the saving of energy and paper, the consumption of electricity was reduced by 15 %, and the volume of purchased paper by 40 %, in three years from fiscal 1999 to fiscal 2002.



■ Remodeling Shipping Bobbins into Packages Easy to Scrap and Dispose

To make the frames of bobbins for the shipment of optical cables, we now use recycled corrugated cardboard, instead of conventional paper tubes that cannot be recycled. Also, we have adopted a new bobbin design that makes scrapping and disposal easier, and permits an approx. 50 % weight reduction.

■ Recycling of Garbage, and Sale of Recycling Equipment

In 2000, we introduced equipment for recycling garbage, generated at the dining room of our office, as compost. This step has been welcomed by our employees, who can receive resulting



Head office / factory



(Left) A paper bobbin using recycled corrugated cardboard for its frame
 (Right) A bobbin after taking to pieces

compost upon request and free of charge. This recycling equipment is Bio-Runner manufactured by NTT-ME.

As our environmental business, we became the agent of NTT-ME to start selling this type of machine 2001. November in 2002, we participated in an environmental symposium and an industrial exhibition held in Yamato City. At these events, we demonstrated the recycling of garbage as useful compost, and provided samples. The demonstration proved highly popular among local citizens.



Our exhibit at the Yamato Industrial Exhibition

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Initiatives of Affiliated Companies

TOTOKU ELECTRIC CO., LTD.

Head office: 1-3-21 Okubo, Shinjuku-ku, Tokyo

Number of employees: 493

Works:

Ueda Factory / 300 Ohya, Ueda-shi, Nagano-ken

Electronic and Material Div. Factory 1 / 238 Kamimaruko, Maruko-cho, Chiisagata-gun, Nagano-ken

Electronic and Material Div. Factory 2 / 1788 Kamimaruko, Maruko-cho, Chiisagata-gun, Nagano-ken

Nagaoka Factory (Totoku Nagaoka) 1-2-1 Higashitakami, Nagaoka-shi, Niigata-ken

URL: <http://www.totoku.co.jp/>



Front entrance of the Ueda Factory

In 1940, Totoku Electric was established as a manufacturer of resistance wires and various electric wires. Since then, the Company has actively expanded its business into such fields as magnet wires, processed electric wires, electronic parts and electronic apparatus, and optics-related products.

The growing public interest in global environmental problems has led us to recognize that for a company, environmental preservation activities represent its social responsibility. In December 1999, we achieved ISO14001 certification for our four business establishments: the Ueda Factory; the 1st and 2nd Office of the Electronic Material Department; and Totoku Nagaoka. In December 2002, we passed the triennial audit for renewing certification. With renewed vigor, we pursue our activities in the current fourth year from the first certification.



Audit for ISO certification renewal (at the Electronic Material Business Department)

Environmental Preservation Activities

Totoku Electric engages in environmental preservation activities, aimed at reducing environmental impact. In these activities, we strive to control adverse effects on the environment, which may result from our business. To that end, we carefully monitor and control elements which may cause such effects.

In fiscal 2002, we defined our main management policy with the motto: "Environment-friendly Management for Society." We, all are making concerted efforts to realize this ideal.

Our main activities include the following:

- (i) Reducing the consumption of energy (electricity) to prevent global warming
- (ii) Reducing and recycling wastes
- (iii) Expanding our services to society and local communities
- (iv) Promoting the design and development of environment-friendly products
- (v) Securing green tracts and promoting tree planting
- (vi) Green procurement

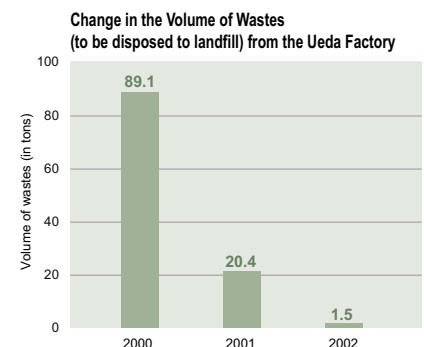
We, as an example, reports here about our environmental activities, which are wastes reduction and contribution to local communities under taken in fiscal 2002. In this year, "Zero Emission (see note)" was achieved at our Ueda Factory. Our goal for fiscal 2003 is to achieve the same at our other than Ueda Factory. Also, we regard compliance with environmental laws and regulations as the minimum requirement for us. We thoroughly control our business activities to fulfill this requirement.

We are determined to continue our efforts for harmonizing our business with the life of local citizens; and realizing a management style friendly to the environment.

(Note) According to our definition, "Zero Emission" refers to a state in which a recycling ratio of 98 % or greater has been achieved.



Cleaning a street along the national highway near the Ueda Factory
Such services have been institutionalized as regular events in all districts near the Factory.



Contact:

Environmental Management Committee
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Initiatives of Affiliated Companies

Furukawa Engineering & Construction Inc.

Head office: 4-3-1 Haneda, Ota-ku, Tokyo
 Number of employees: 411
 URL: <http://www.fecon.co.jp/>

History

The predecessor of Furukawa Engineering & Construction was founded in 1947. In 1973, this company was renamed to bear the present designation. It has continually developed as a general engineering company, affiliated to a corporate group headed by Furukawa Electric. In 1995, Furukawa Engineering & Construction listed its stocks at the Tokyo Stock Exchange (2nd Section).

Business Categories

Design, installation, maintenance and control of overhead/underground power transmission lines; information communication lines/equipment; various electric equipment (receiving, transforming and distributing equipment; wiring; lighting etc.); various equipment (for air conditioning, water supply, drain, sprinkling etc.); thermal systems; solar power systems; design and supervising of various manufacturing equipment, and civil engineering and construction works

Environmental Preservation Activities

In December 2000, Furukawa Engineering & Construction achieved ISO14001 environmental management system certification.

Considering the fact that ours is a general engineering company, we have singled out the following four items as important management items in our activities for environmental management.

(i) Energy conservation

We strive to reduce the consumption of electricity and fossil fuels at our business establishments. Also, we have installed a demand controller at our head office building; this measure has enabled us to reduce the consumption of electricity by about 10 % per year, which represents a cost reduction by about 1 million yen.

(ii) Recycling, weight reduction and appropriate treatment of byproducts from construction works

In compliance with the Waste Management and Public Cleansing Law, and other related laws and regulations, we promote the recycling, weight reduction and appropriate treatment of

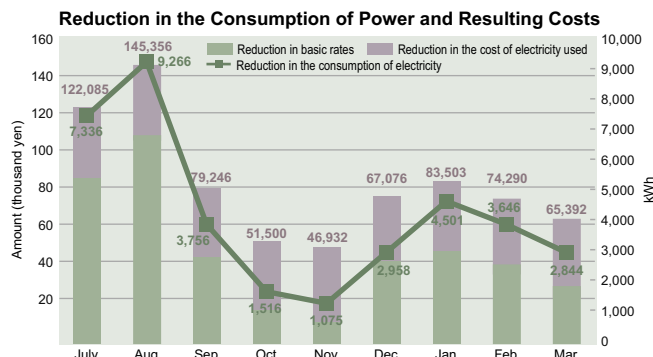
byproducts from construction works.

(iii) Control of noise and vibration at equipment installation

For the installation of various equipment, we have adopted a number of machines and methods that do not cause significant noise or vibration. This measure has been introduced even to areas to which regulations on noise/vibration do not apply.

(iv) Proposal and installation of systems that lighten environmental impact (through energy conservation, use of new energy or reduction of harmful substances)

We design, propose and install systems that lighten environmental impact. These systems incorporate such features as demand controllers; lighting appliances/equipment designed for energy conservation; and halogen-free, ecologically safe electric wires. In addition, we actively pursue the design, installation and maintenance of solar power systems, wind power generation systems, and other new energy systems that are effective in preventing global warming.



Effects of the demand controller, installed at the head office building, in reducing electricity demand: a reduction of 40 kW/month on average (over a period from July 2002 to March 2003)



A 30 kW solar power system, installed by us on the roof of the Zushi Municipal Office (installation completed in February 2003)

Contact:

Environmental and Quality Control Dept.
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Initiatives of Affiliated Companies

The Furukawa Battery Co., Ltd.

Head office: 2-4-1, Hoshikawa, Hodogaya-ku, Kanagawa-ken
 Number of employees: 766
 Works: Imaichi General Service & Facility Administration
 597 Otorozawa-Aza-Uehara, Imaichi-shi, Tochigi-ken
 Iwaki General Service & Facility Administration
 23-6 Joban-Shimo-Funao-cho Kuidesaku, Iwaki-shi, Fukushima-ken
 URL: <http://www.furukawadenchi.co.jp/>

Furukawa Battery, a manufacturer of various batteries, was founded in 1951 in consequence of the move of Furukawa Electric to spin off its battery department. Furukawa Battery achieved ISO14001 certification at its Iwaki General Service & Facility Administration (GSFA) in March 1999, and at its Imaichi GSFA in June 1999. This means that all production centers of the Company have been ISO14001-certified. As a result of a change in audit procedure in March 2002, the Iwaki and Imaichi GSFAs now form a unit with regard to ISO14001 certification.

Environmental Preservation Activities

The production centers of Furukawa Battery are located in the beautiful nature of Tochigi and Fukushima Prefectures. Given this fact, we strictly observe environmental regulations and related agreements with local governments. In addition, we pursue environmental preservation activities, stressing the following items:

- (i) Energy conservation for preventing global warming
- (ii) Promoting the reduction and recycling of wastes, for the effective use of resources and the lightening of environmental impact
- (iii) Promoting the saving of resources for environmental preservation, through the effective use of main materials including lead, cadmium, sulfuric acid and caustic soda
- (iv) Developing products using smaller amounts of environmental pollutants than conventional products, in order to reduce environmental impact

An example of our environmental activities is the reduction of drainage from our plants. We succeeded in reducing the volume of drainage by 34 % in three years from fiscal 1998 (the year in which we commenced our ISO14001-related activities) to fiscal 2001.



Facility for emergency treatment of rainwater

Support of an "Economy-run Race" of Electric Vehicles

We support "Economy-run race" of electric vehicles, held in Ogata Village, Akita Prefecture; the SUGO Circuit in Miyagi Prefecture; and other locations. Through this support, we contribute to the development of solar cars, electric vehicles and other vehicles using clean energy; as well as to the encouragement of engineers specializing in such vehicles.

Promotion of Automobile Battery Recycling

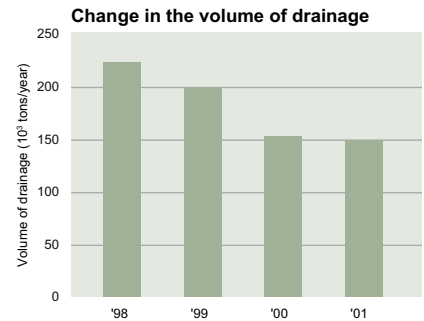
To promote the recycling of reusable resources, we participate in a program of the Battery Association of Japan for recycling used lead batteries for automobiles.



Economy-run race



Ecology-minded battery car



Data on Environmental Impact

Air Pollution

Item	Works	Regulatory target	Actual measurement (average)	Measurement frequency
SOx (Nm ³ /h)	Iwaki	6.0	K value: 0.016	Thrice/year
	Imaichi	14.5	K value: 0.250	Twice/year
Dust (g/Nm ³)	Iwaki	0.10	0.0046	Thrice/year
	Imaichi	0.15	0.0010	Twice/year

Noise/Vibration

No standard value exceeded

Water Pollution

Item	Works	Regulatory target	Actual measurement (average)	Measurement frequency
pH	Iwaki	6.0~8.2	7.0	Every day
	Imaichi	6.0~8.0	7.1	Every day
BOD (mg/L)	Iwaki	15	1.33	Once/month
	Imaichi	10	2.20	Twice/month
Lead (mg/L)	Iwaki	0.1	0.012	Every day
	Imaichi	0.1	0.020	Every day
Cadmium (mg/L)	Iwaki	0.07	0.010	Every day

Odor

No use of object substances

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