

CONTENTS

Greetings from the President	1
Corporate Profile	2
Targeted Areas for the Report	3
Corporate Philosophy, Environmental Philosophy and Policy	4
Environmental Management Activity Projects and Achievement of 2001 Projects	5
Environmental Accounting	6
Environmental Management System	8
ISO14001 Certification Acquisition State	9
Environmental Education and Awareness	11
Risk Management	13
Environmental Load Reduction Activities	15
Environment-friendly Products	20
Communication	25
Observance of Laws	27
Social Contribution Activities	28
Environmental Audit	29
Occupational Health and Safety Management System	30
State of Overseas Activities	32
Environmental Load Mass Balance	36
Awards Received	37
Employees with Official Environment Qualifications	37

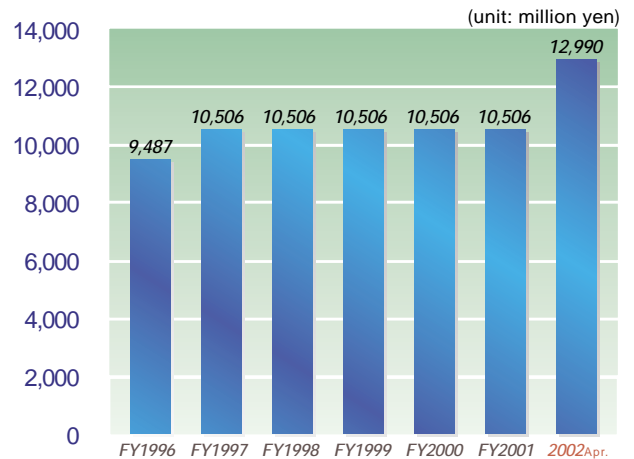


Annual Environmental Report Corporate Profile

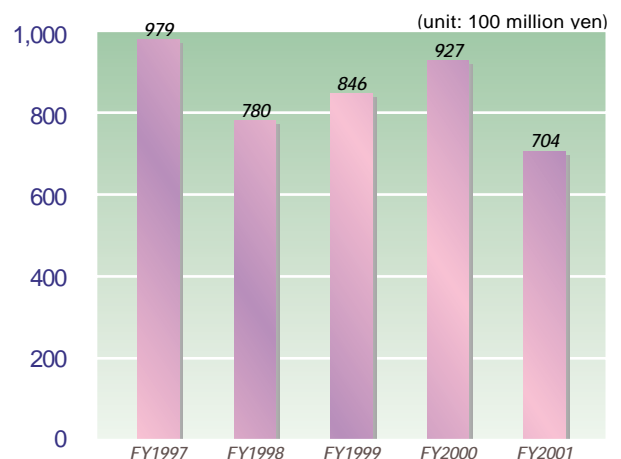
Trade name: NEC TOKIN Corporation
 Incorporation: April 8, 1938
 (Consolidated with Electronics
 Component Division, NEC in April
 2002 and the trade name changed to
 NEC TOKIN Corp.)
 President and Representative Director: Yuichi Haneta
 Head Office: 7-1, 6-chome, Koriyama, Taihaku-ku,
 Sendai, Miyagi 982-8510
 Homepage: <http://www.nec-tokin.com>
 Capital: ¥12,990,212,211
 Stock: Stock to be issued: 200,000,000 shares
 Issued stock: 113,516,066 shares
 Stock exchange: The First Section of
 Tokyo Stock Exchange
 Fiscal term: March
 Employee: 1,900
 (Consolidated companies, domestic:
 1,800
 China and other overseas countries:
 8,600)

(As of May 31, 2002)

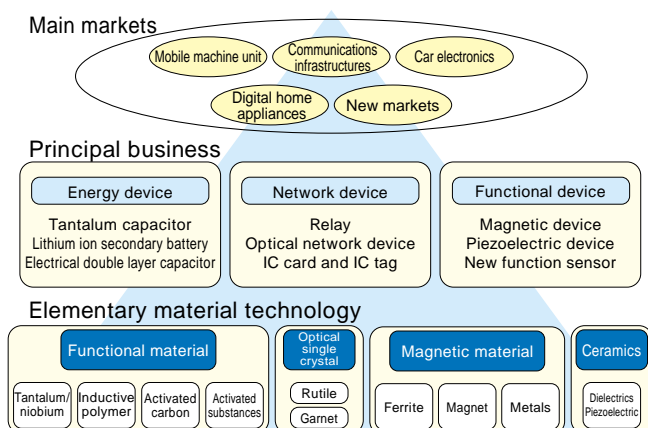
Transition of capital



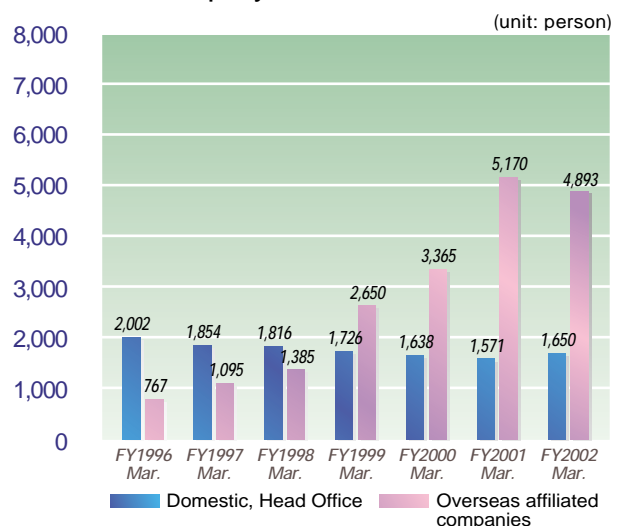
Transition of consolidated sale



NEC TOKIN chart of business development



Transition of employee number





Corporate Philosophy, Environmental Philosophy and Policy

NEC TOKIN this year has revised its corporate idea thereby clearly defining its stance toward environmental protection and sworn to carry on business management with priority given to the environment.

Corporate Philosophy

NEC TOKIN - an electronic components/devices manufacturer with strengths in its superior materials technologies - continues to innovate electronics by creating leading-edge devices, with the ultimate goal of contributing to society all over the world and harmonizing with the natural environment of the communities in which we operate.

Corporate Statement

Advanced Devices thru Material Innovation for the Fulfillment of Ecology & Human Potential

Corporate Slogan
Devices thru Material Innovation

Environmental Philosophy

In all domains of company activities, NEC TOKIN promotes activities for global environmental protection by pursuing of technologies and production in consideration of environment.

Corporate Commitment

- “ Customer Focus ”
A company grows with its customers. Customers are our most valuable asset.
- “ Shareholders Focus ”
We place high priority on our shareholders. Our management aim is to improve profitability and shareholder value.
- “ Employee Focus ”
We believe that people thrive and gain satisfaction through meaningful work that contributes to the global society.
- “ Quality Focus ”
Maintaining high standards of quality is essential to sound business growth. We develop innovative products that are always ahead of their time, while optimizing QCD - or quality, cost, and delivery.
- “ Ecology Focus ”
As a corporate citizen, we consider preserving the environment to be a vital issue. With our Green Technology we aspire to harmonize with nature for the benefit of the communities in which we operate.

Action Guidelines

1. In all stages, from design and production to disposal, we will strive to promote energy saving, resources saving, and reduction of wastes, and also create products throughout technologies in consideration of environment.
2. We will endeavor to continuously improve EMS and prevent pollution.
3. We will comply with the environmental legislation and regulations, and make efforts environment protection to set up voluntary rules taking account of other requirements.
4. In developing activities based on this environment policy, we will set up environmental objectives and targets, and clearly define the measures in environmental managing program and review them.
5. We will document this policy and communicate to all employees, and implement and maintain it through the environmental management system.
6. We will open this policy to the general public upon request.

* Revised in 2002



Environmental Management Activity Projects and Achievement of 2001 Projects

To realize the "Environmental Management" through protection of rich global environment, NEC TOKIN has established its environmental management activity plan and grapples to realize it.

Concretely speaking, we grasp the environmental load at principal plants (Sendai, Shiroishi and Hiroshima), and accordingly we develop our environmental management activities to reduce the environmental load effectively. Regarding the environmental protection cost and effect, we calculate the data according to the environmental accounting and disclose it.

■ Environmental management activity plan and achievement

1. Result and evaluation

Item	Annual target	Activity result (records for FY2001)	Evaluation	Related page
Reduction of the green house gas emission	Over 2% reduction from the preceding year in terms of unit production	Reduction of the fixed expenses and the improvement of production efficiency were less than target and the resulted in an increase of 5.0% in terms of the cost. Absolute CO2 emission was sharply reduced by 27% from the preceding year, however.		15~16
Reduction of industrial waste	Reduction of over 50% from the preceding year	Material recycling advanced and achieved waste reduction target of 56% from the preceding year.		17
Reduction of general waste	Reduction of over 20% from the preceding year	Achieved the target 28% reduction from the preceding year through thoroughly sorted recovery.		18
Reduction in the use of environment pollutant chemical substances	1% reduction from the preceding year	For 2001 reduced 42% from the preceding year.		19
Zero generation of environmental pollution	Continuance of "Zero pollution"	Maintained the "Zero pollution" through introduction of the online waste water quality (pH) monitoring system and the strengthening of other risk management program		27
Reduced use of packing materials	Over 10% reduction from the preceding year	A sharp reduction of 49% over the preceding year was achieved.		18
Application of the environmental accounting management system		Accounting was made along the guideline provided by the Ministry of Environment.		6
Green purchasing		Part of merchandise failed to achieve 100% target in terms of the green purchasing factor of ecology product.		23
Social contribution		Each plant carried on the local cleaning or made positive participation to the various events sponsored by the local government, implementing contribution activities to the local communities.		28

Evaluation: = Achieved over and above the target; = Achieved 80 to 100%; X = Achieved less than 80%

2. General evaluation

Regarding the earth-warming gas emission reduction, we failed to achieve the target set by the unit production basis because of the lag of the production efficiency improvement activities to sharp drop of the production. Heat insulation of the piping, enhanced operation control and efficiency resulted in a sharp reduction of the absolute material quantity used, however.

All other targets have been achieved.

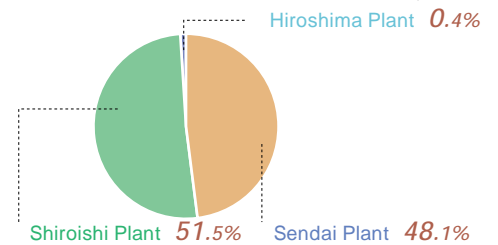


Environmental protection effect

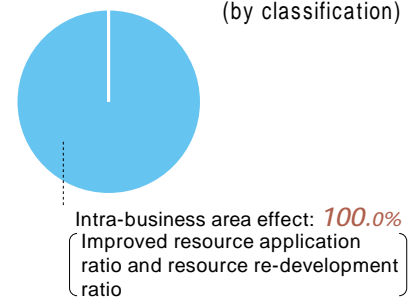
(unit: million yen)

Major classification	Medium classification	Effect
Intra-business area effect	Reduction in energy consumption	217.8
	Reduction and recycling use of water	11.6
	Reduction of paper purchasing	0.6
	Reduction of plastic purchasing	9.6
	Reduced consumption of other raw materials	0.6
	Reduction of waste processing	7.1
	Improved ratio of resource re-development	12.4
Upper/lower stream effect	Reduction of chemical substances	0.2
	Reduction of solder purchases	0.1
	Increasing the purchases of green	0.0
	Effect obtained with other measures	0.0
Other environmental protection effect (deemed effect)	Predicable profit from risk reduction	0.0
	Educational effect	0.0
	Improved credit gained from the environment-conscious business stance	0.0
	Other	0.0
	Total	260.0

Environmental protection effect ratio (by site)

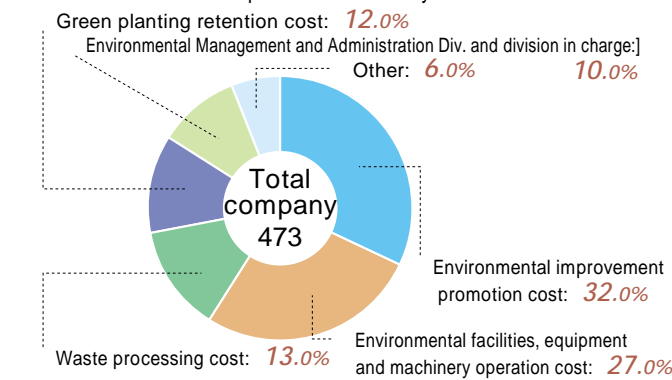


Environmental protection effect ratio (by classification)

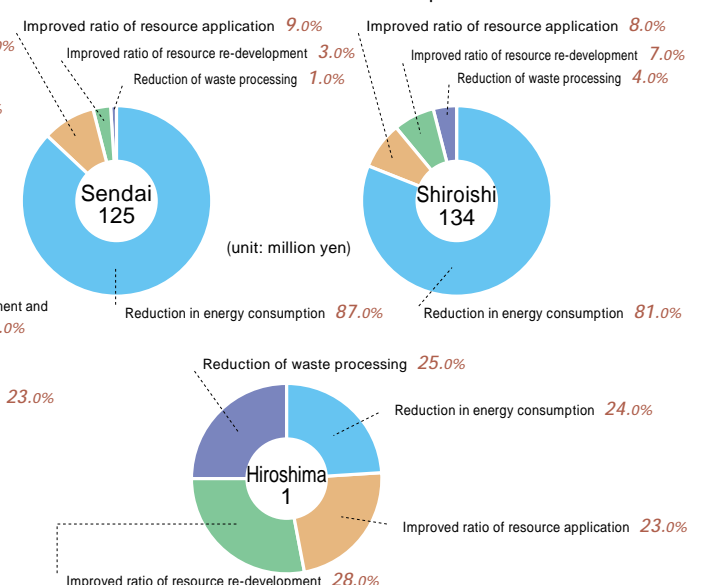
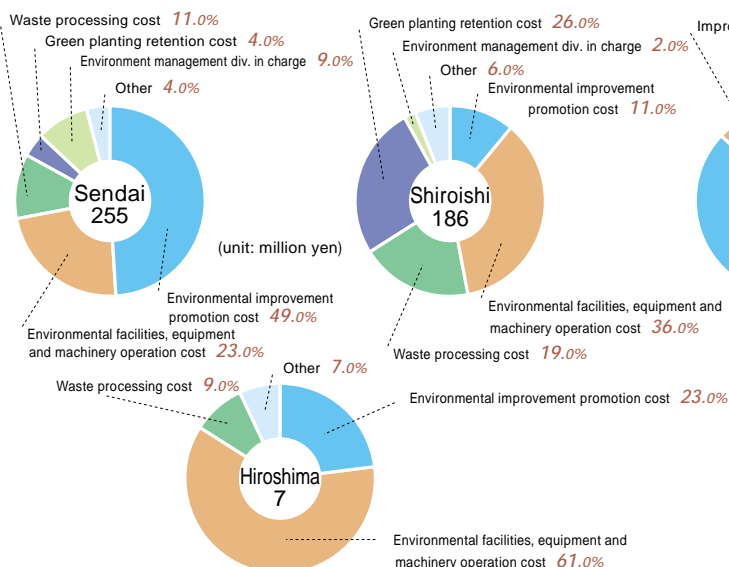
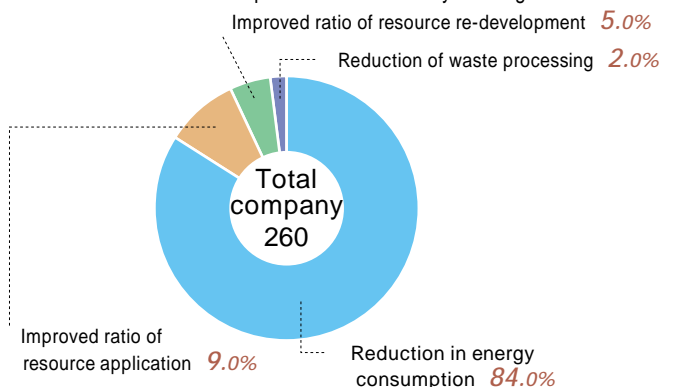


For the sake of comparison, the environmental protection cost and effect summarized using the accounting method of the preceding year are as follows:

FY2001 environmental protection cost by environmental item



FY2001 environmental protection effect by management item





ISO 14001 Certification Acquisition State

NEC TOKIN Group understands the environmental management system (EMS) compatible with ISO 14001 as an important tool for promoting the environmental management activities. Accordingly, it is constructing the system in respective plants and divisions. In addition, the Group promotes continuous improvement of the system and the reduction of the environmental load by turning the cycle of PDCA (Plan-Do-Check-Action) on the basis of this system.

EMS at the plants

The environmental management system at NEC TOKIN Group was first introduced to respective plant units of Shiroishi, Sendai and Hiroshima Plant in this order for acquisition and construction.

ISO 14001 certification acquisition state for respective plants of NEC TOKIN Group

Name of plant	Location	Environmental certification body	Month of certification registration
Shiroishi Plant	Shiroishi, Miyagi Pref.	JQA	1998. 9
Sendai Plant	Sendai, Miyagi Pref.	JQA	1999. 3
Hiroshima Plant	Higashiroshima, Hiroshima Pref.	JQA	1999.10
NEC TOKIN Electronics (Xiamen) Corporation	China	XECC	2001. 5
NEC TOKIN Electronics (Taiwan) Co., Ltd.	Kaohsiung, Taiwan	SGS	2001. 5

In the future, the Group will accelerate the certification acquisition by aiming at acquiring it for every site of its production in the world.

In addition, it will promote the acquisition for the NEC TOKIN administrative offices . and other non-production bases.

EMS for the whole group

Up to the present, we have promoted the acquisition of the certification first to the production units

We have recognized the needs for grappling with EMS company-wide to realize the "environmental management" and promote the centralized and more efficient EMS.

Accordingly, we constructed the company-wide environmental management system for fiscal 2000, simultaneously aiming at integrating the Shiraishi, Sendai and Hiroshima plants,

As the result, we have been given certification as the company-wide system.

In the future, we are determined to further expand the area of certification acquisition and develop the environmental management activities as one group.

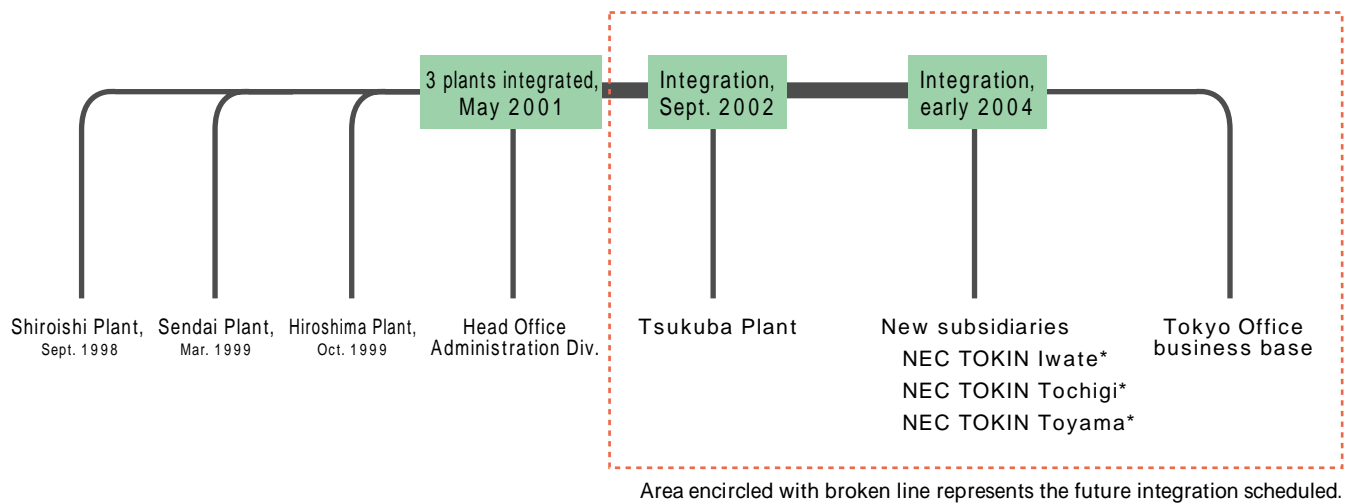


Company name	Location of the environmental management and administration division	Environmental certification body	Month of certification registration
Token Co., Ltd.	Sendai, Miyagi Pref.	JQA	2001. 5

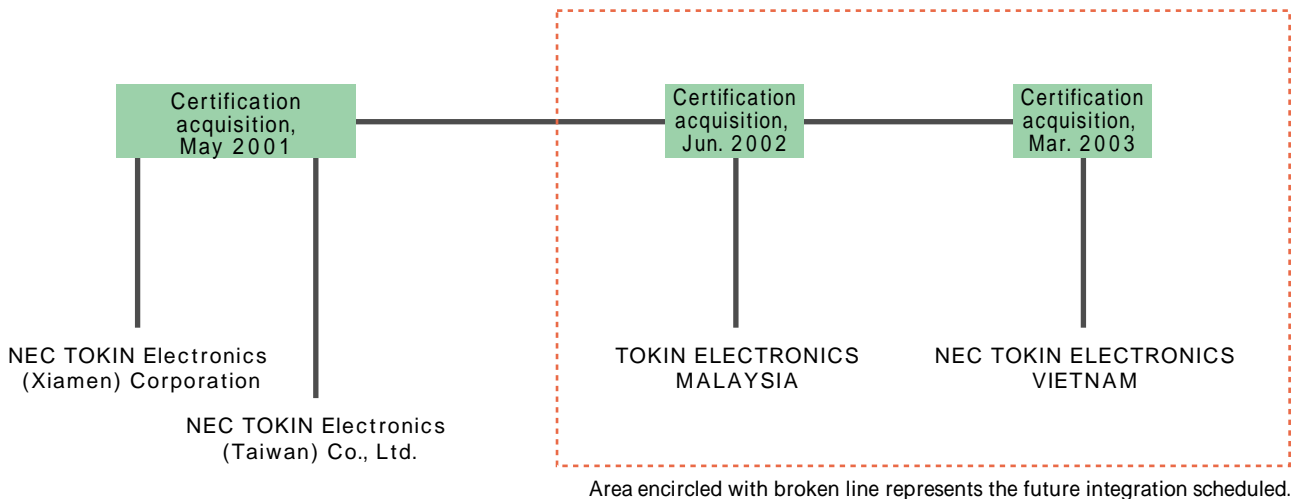


ISO 14001 CERTIFICATION DEVELOPMENT CHART

1) Development chart for domestic plants, etc.



2) Development chart for overseas affiliated companies



* With the foundation of NEC TOKIN Corp. in 2002, NEC TOKIN Iwate, NEC TOKIN Tochigi and NEC TOKIN Toyama have newly joined the company as new subsidiaries. Because of their separation from NEC Corp., the environmental management system required a new construction. Accordingly, this company is now aiming at constructing a new environmental management system on the basis of the organizations and systems of these new companies.



Environmental Education and Awareness

Individual employees through their deep understanding on the environment and their behavior realize the environmental management. As the means to do this, NEC TOKIN thinks it very important to provide them with the environmental education.

In addition, it hopes to develop human resources who recognize the environmental problem as the employee, extract the core problem, propose solutions, and take actions accordingly.

1. Environmental education

At NEC TOKIN, we implement environmental education for the employees, which include the hierarchical education to promote the employees' understanding on the environment and deepen their awareness, special training for the employees assigned to operating equipment and facilities that give a major impact on the environment, and the activities for promoting the innovation of their consciousness through self-awareness on the environment by recommending and supporting their acquisition of qualification.

In addition, we hold courses for developing internal auditors and skill-upgrading to promote the improvement of the environmental management system.

Training programs (company-wide)

(* indicates the plant programs individually created and implemented)

Classification	Object and content	Content/Item	Early 2001		Late 2001						
			4	5 6 7 8 9	10	11	12	1	2	3	
Hierarchical basic education	1. New recruits	Objectives: Enhancement of environment-consciousness, understanding of TOKIN EMS and ISO requirements	5th (28 persons)								
	2. Environmental management promoter	Content: Implemented by making selection from the below subject as may be needed: (1) Earth and local environmental problems (2) Outline of the ISO 14001 standard (3) Request from outside (4) TOKIN's environmental management activities (Green program) (5) Education on individual related themes Length of class: 1.5 hours/course	21st and 22nd (20 persons from Sendai and Shiroishi) Environmental Management Promotion committee members are included in the training for developing the internal auditors.						7th (4 persons from Hiroshima) 11th (11 persons from Tsukuba)		
	3. Management and senior managers		19th (28 persons)								
Special field education	1. Training of the internal environment auditors	Objectives: Expansion and following up of the qualified internal environment auditor Content: Complies with the ISO 14012 guideline. Subject: Candidates to the internal environment auditor (about 20 persons) Length of class: 2 days for the training course and half a day for following up	21st and 22nd (24 persons from company-wide), Internal auditor training seminar						15th (21 persons from Sendai), following up training 22nd (17 persons from Shiroishi), following up training		
	2. Reinforcing the number of public qualification holders	Objectives: Legal compliance and regulation observance risk management Content: Application for qualification tests, and receiving specialist training Subject: Candidate for qualification acquisition	Refer to a separate qualification acquisition program.								



Internal auditor training seminar



Internal auditor following-up training



2. Awareness

(1) Environmental Letter

Environmental Management and Administration Division issues periodically the environmental letters addressed to the top management and senior managers. The letters carry articles on the social situation and customer information on environment and the tasks this company is promoting.

(2) Environmental News

The environmental news is issued to the employees of Sendai and Shiroishi Plants to develop their environment-consciousness.

The news is edited and issued by the Environmental Management Division of the plant by being posted on the bulletin board, etc.

The news introduces social trends and topics concerning the environment. It provides the employees with information on the activities being carried on by respective plants and commendations are given to such activities.

(3) Improvement of internal auditors' level

ISO14001 calls for continual improvement of the environmental management system. To achieve this, we have the internal audit system. At NEC TOKIN, we recognize the importance of the internal audit system and have been positively promoting the improvement of audit level. In addition, we continue to provide follow-up training of the internal auditors after they acquire their qualification to upgrade their level.

The following table indicates the number of employees having acquired qualifications of the judges and internal auditors as of Mar. 31, 2002:

Qualification name	Number of person
Chief auditors registered with CEAR	1 person
Auditors CEAR	1 person
Assistant auditors CEAR	7 persons
Awareness of the NEC-related company registration	4 persons
Internal auditor	102 persons

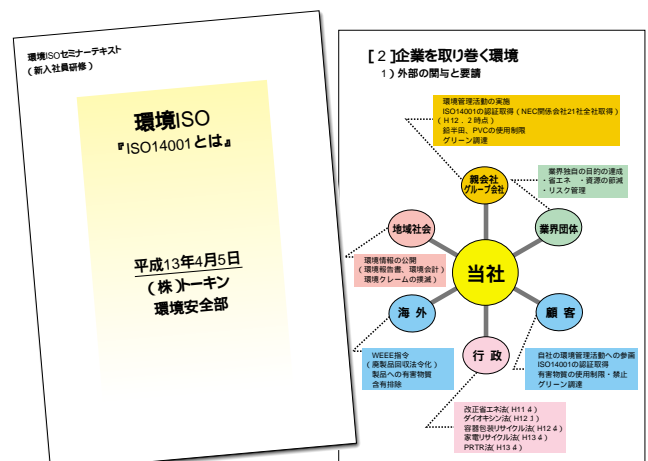
Environmental Letter



Environmental News



Educational Text



Annual Environmental Report Risk Management

NEC TOKIN has acquired ISO14001 certification and is developing risk management accordingly. Should an accident occur, it will be immediately reported to the top management and appropriate action will be taken on the basis of the established emergency measure.

Cases of Risk Management

At NEC TOKIN, we introduce various equipment and implement drills for preventing pollutions and disasters.

1. Installation of the solvent gas deodorization and combustion units

At both Sendai and Shiroishi Plants, organic solvent gas emitted during the production process is burnt and deodorized using the appropriate incinerators.



Solvent gas deodorization and incineration unit

2. Wastewater quality online monitor system

At Tsukuba Plant, we have constructed a system for displaying measured pH values of wastewater online and sounding alarm if the reading exceeds the self-control reference value. Sendai and all other plants can check this system over the in-house LAN system.

Installation of this system has completed our emergency action system.



3. Installation of a temporary recovery tank in the case of drain abnormality

At Shiroishi Plant, we have established a perfect system for checking even a drop of abnormal wastewater from being discharged outside the plant premises. If the final wastewater quality exceeds the prescribed self-control standard, the wastewater will be temporarily recovered to a tank while the cause is examined and necessary measures are taken.



Temporary recovery tank

4. Bent type kerosene piping

At Shiroishi Plant, flexible piping used to be adopted for the diesel fuel tank, feed pump and piping. Leakage occurred occasionally from the pipe joints because of the cracks made by the feed pump vibration. To prevent the leakage, bents are provided to the middle of the piping to ease the vibration and prevent subsequent oil leakage.

Such measures are being taken at various points in the premises.



Bent type kerosene piping

5. Emergency disaster prevention training

To prepare for an emergency, each plant and division holds their training periodically to check the damages to a minimum. Disaster prevention equipment such as sand bags, oil mat, scoops, etc. is kept in the equipment storage. At each training, inventories are taken on quantities, contents and replacement is made to ensure well-preparedness.

Photo 1 shows a scene of training held at Sendai Plant. Supposing that the heavy metal ion concentration in the wastewater exceeded the self-control reference value, wastewater from the catch-basin directly near the drain path is being held back with piled sand bags, etc.

Photo 2 shows a training scene at Shiroishi Plant under a supposition that organic solvent was leaked from a tank truck. Sand bags are being piled to prevent the solvent from flowing into the storm sewer and the oil mats absorb and recover the leaked solvent.

Photo 3 shows a training scene at Hiroshima Plant supposing a leakage that occurred during a recovery work of waste organic solvent.



Photo 1. Training at Sendai Plant



Photo 2. Training at Shiroishi Plant



Photo 3. Training at Hiroshima Plant

Emergency Action Training and Test Plan and the State of Implementation

Training item	Implementing division	State of implementation
Kerosene outflow	Sendai and Shiroishi (plants)	Implemented in July and August
Solvent outflow	Sendai, Shiroishi and Hiroshima (plants)	Implemented in August and September
Fault of drain and emission gas processing units	Sendai and Shiroishi (plants)	Implemented in May, July, August through October and March
Gas leakage from a gas tank	Shiroishi (plant)	Implemented in August
Leakage from an underground storage tank	Shiroishi (plant)	Implemented in May, December and February
Black smoke emission from a boiler	Sendai (plant)	Implemented in July and November

Implementation Cases of Monitoring and Measuring

In addition to these counter-risk measures and emergency training, both Sendai and Shiroishi Plants have established round-the-clock monitoring system.

1. Sendai Plant has the central monitoring unit for 24 hour supervision of data from respective monitoring units installed to various points in the pl

In the case of an emergency, the system sounds the alarm and a supervisor rushes to the point of trouble and takes necessary action.

2. Shiroishi Plant has a safety environment supervisor system. The supervisor is responsible for preventing an emergency by early discovery.

The safety environment supervisor keeps round-the-clock monitoring of the safety and environment.



Central monitor unit



Periodical inspection by a safety environment supervisor



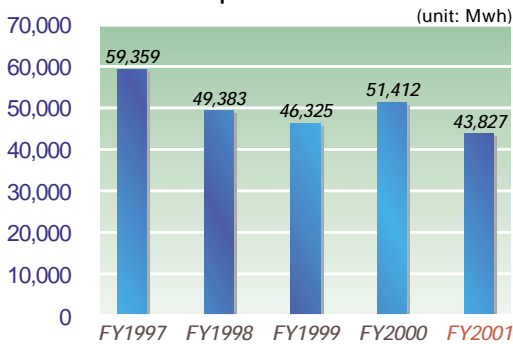
Annual Environmental Report Environmental Load Reduction Activities

1. Reduction of the green house gases

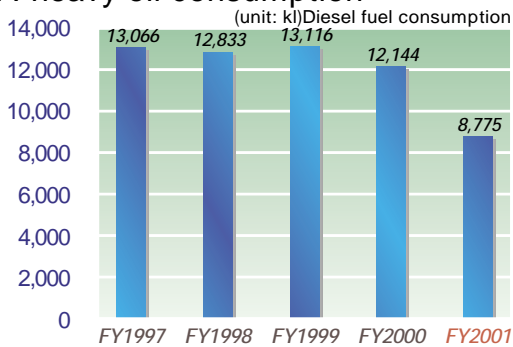
At NEC TOKIN, we implement various measures for reducing CO₂ emission. For example, the environment management committee or energy-saving resource committee at principal plants (Sendai, Shiroishi and Hiroshima) takes up the CO₂ gas reduction for company-wide grappling.

Through these activities we could reduce the emission for the fiscal 2001 by 27% over the preceding year in absolute quantity.

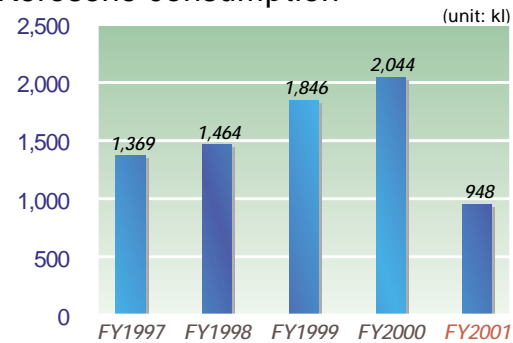
Power consumption



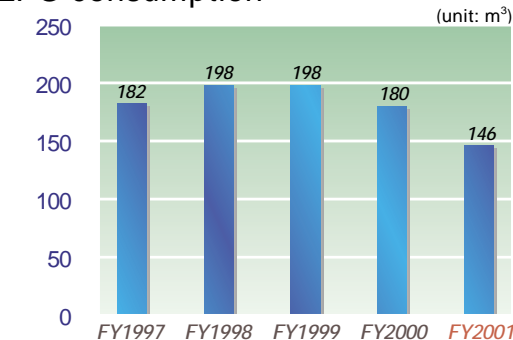
A-heavy oil consumption



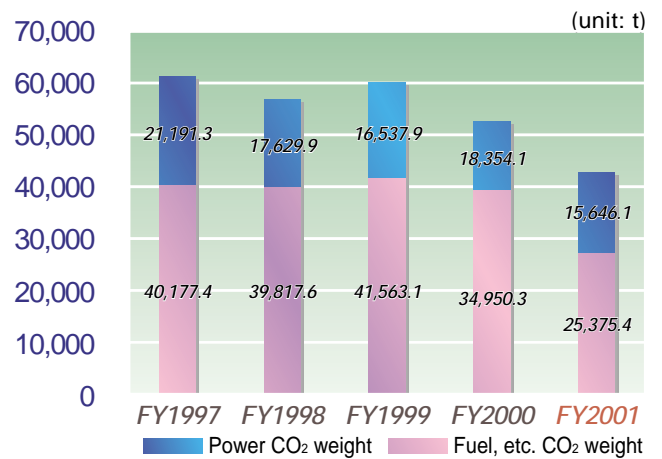
Kerosene consumption



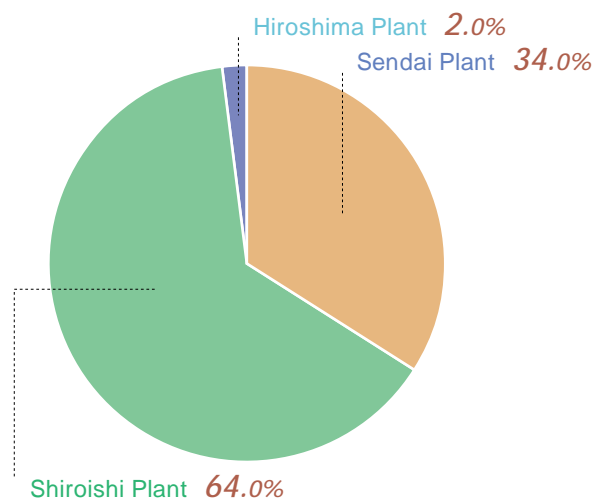
LPG consumption



CO₂ emission from principal plants of NEC TOKIN



CO₂ emission by plant



■ Cases of energy-saving activities at the plant

1) Energy saving by heat-insulating the boiler piping

We have promoted heat insulation of boiler piping thus far. The activities are continued during the fiscal 2001 to realize thorough heat insulation.

As the result, we could minimize the heat diffusion and contributed to realizing the target energy saving.



Heat insulation of boiler piping

2) Energy saving with improved operating efficiency

We have reviewed our operation as the air compressor, cooling tower, etc. We have also implemented changes of piping routing and the maintenance of the load equipment. These promoted the efficiency of operation and contributed to the energy saving.



Operation of one of the two cooling tower units could be stopped thanks to the improved operation efficiency achieved



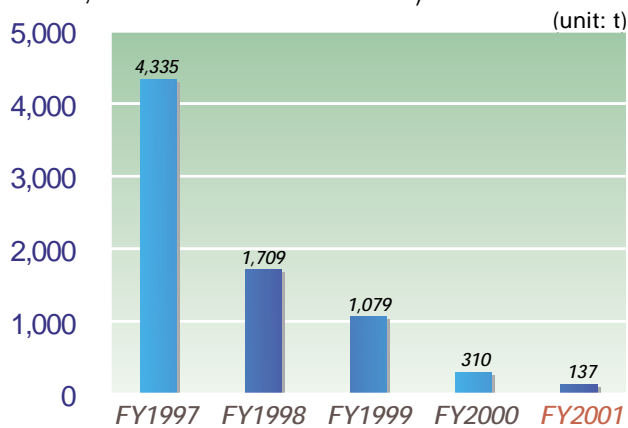
2. Reduction of industrial wastes

According to its basic concept of the waste handling style, we at NEC TOKIN are developing activities based on the 3R (Reduce, Reuse and Recycle) of the waste.

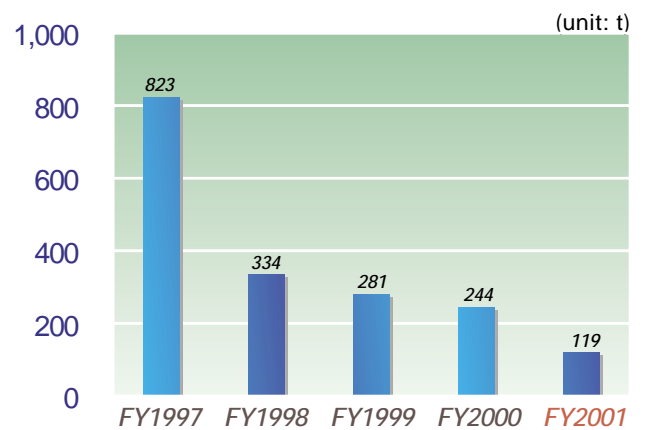
As the result of this grappling, Sendai Plant almost perfectly achieved the Zero Emission* target, while Shiroishi Plant continues to achieve their zero emission* result same as the preceding year.

Owing to these activities, we could reduce the waste to 56% of the preceding year for 2001.

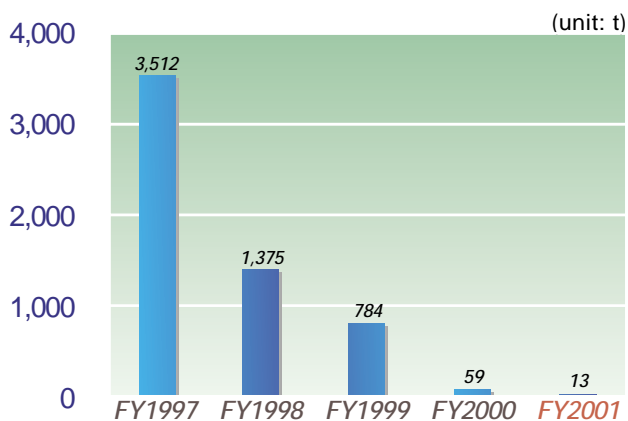
Industrial waste emission from principal plants (Sendai, Shiroishi and Hiroshima)



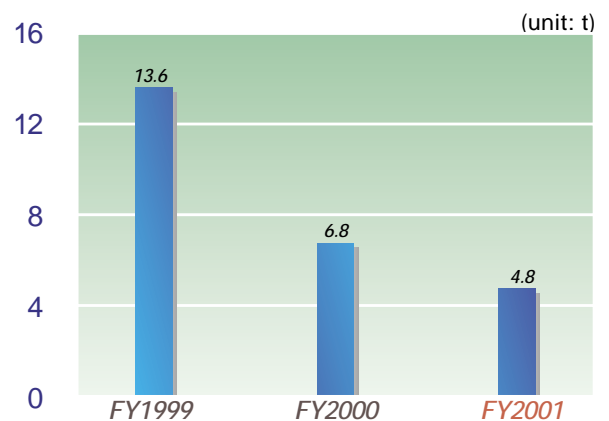
Emission from Sendai Plant



Emission from Shiroishi Plant



Emission from Hiroshima Plant



* Definition of zero emission:

At NEC TOKIN, we define the zero emission by applying that of NEC which reads as follows: "Of the total waste generated, 99% and over are resource recovery and the portion for landfill disposal is less than 1%"

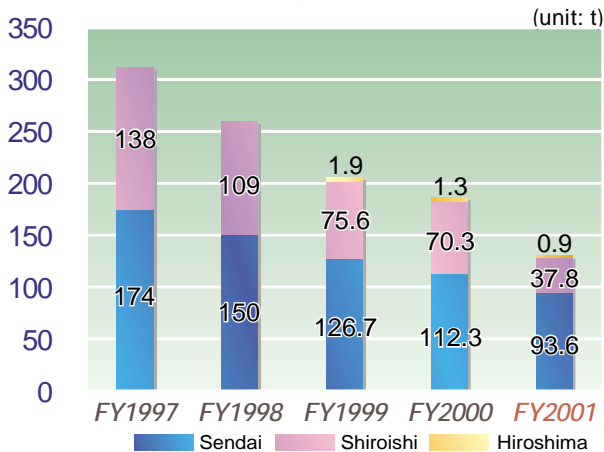


3. Reduction of general waste

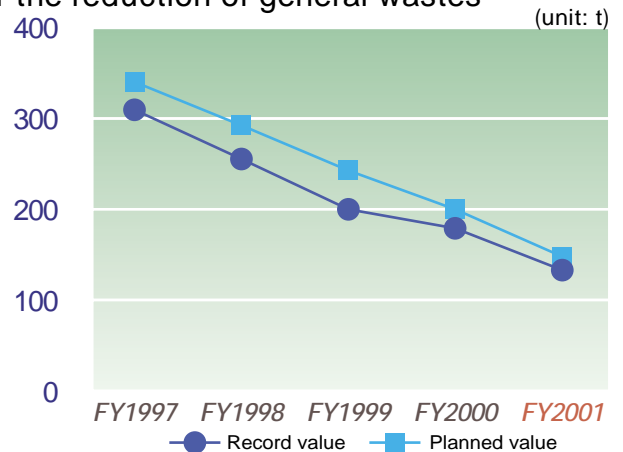
We promote the reduction of general waste by implementing the same efforts as for the industrial wastes. We have reduced 28% of waste for 2001 compared with the preceding year.

To promote the reuse of plastic material, we promoted a thorough sorting of plastic wastes.

General waste discharged



Comparison of records and plan for the reduction of general wastes



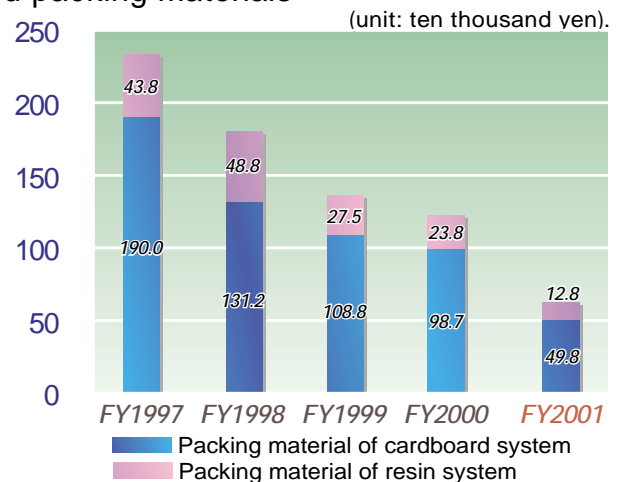
4. Reduction of packing materials

The Green Purchasing Committee promoted the use of simple packing and packages and the reduction of the use of packing material for 2001 in succession to the preceding year.

As the result, we could achieve the target by reducing the packing material to 49% of the preceding year. As the means for the reduction, we applied the use of returnable boxes and using the common inner boxes.

In addition, vinyl chloride packages are completely discontinued in 2001.

Purchasing records of packaging and packing materials



5. Soil and groundwater pollution

At NEC TOKIN, we conduct investigation of soil and/or groundwater pollution by heavy metals and volatile organic solvents by designating the measuring points. During 2001, we conducted the soil of our premises upon removing the building to detect no pollution of the soil.

Sendai Plant conducts the groundwater quality investigation monthly with no pollution detected.

Shiroishi Plant too conducts the groundwater quality investigation and detected no pollution.

Grappling with the effect of chloric organic solvents system on the soil and ground water quality

Name of plant	Measuring point	State of pollution
Sendai Plant	At 8 points (including 2 points at Nishiura)	No pollution*
Shiroishi Plant	2 points	No pollution*

We will continue to conduct the measuring as the measures for soil and ground water pollution prevention.

* No pollution: Analytical measurement produced no contamination exceeding the standard reference level.



6. Reduction of chemical substances (PRTR compliance)

NEC TOKIN autonomously established the "Chemical substances inhibited to use" and "Chemical substances with limited use" from the viewpoint of toxicity.

In the case of newly using a chemical substance, review is made under the advance deliberation system on the following points:

- (1) Checking on the management method of the substance in question
- (2) Investigation of the environment to use the substance in (with priority given to the safety)
- (3) If the substance is of toxicity or hazard, possibilities for substituting it with other substance

The use of chemical substance is implemented by considering the reduction of environmental load.

Moreover, we conduct the inventory of chemical substance once a year. Through the checking of the state of use and management, we make efforts in grasping the problems in the aspects of the environment and safety and the state of conformity to the regulations.

On the other hand, we have established a system to promptly respond to inquiries by customers and others interested parties on our state of use of chemical substances. (For further details, read p.25 Responses to customers' request for environmental investigation, Communication.)

Chemical substances discontinued to use or substituted during 2001

The following substances were either discontinued to use or substituted with others during fiscal 2001. In the table, those substances related to Shiroishi Plant were discontinued following the retreat from the semiconductor production. They were also fully discontinued for whole the company.

Name of substance	Discontinued or substituted	Property	Subject plant
Metallic arsenic	Disc.	Solid	Shiroishi Plant
Phosphorus oxychloride	Disc.	Liquid	"
Phosphine	Disc.	Gas	"
Diborane	Disc.	Gas	"
Monosilane	Disc.	Gas	"
Dichlorosilane	Disc.	Gas	"

Name of substance	Discontinued or substituted	Property	Subject plant
Hydrogen chloride	Disc.	Liquid	Shiroishi plant
Silicon tetrachloride	Disc.	Liquid	"
Boron trichloride	Disc.	Gas	"
Potassium dichromate	Sub.	Solid	Tsukuba Plant
Manganese dioxide	Sub.	Solid	"

Disc.: Discontinued; Sub.: Substituted

Substances subject to PRTR Law

Regarding the PRTR Law, environment management divisions of respective plants have been giving instructions to each division on implementing the income and outgo balance management of the subject substances to grasp the quantities of substances used and the waste emission.

As the results, NEC TOKIN Group has been reporting on a total of 7 substances stated above whose annual consumption exceed 5 tons.

List of investigation results on the substances subject to the PRTR Law.

(unit: t/year)

Substance No.	Name of substance	Sendai (plant)	Shiroishi (plant)	Total quantity handled	Products	Atmospheric emission	Recycling	Waste
30	Bisphenol A	2.1	-	2.1	2.1	-	-	-
63	xylene	1.4	2	3.4	-	0.4	3	-
68	chromium	30.5	-	30.5	30.47	-	-	0.03
100	cobalt	64.5	-	64.5	64.43	-	-	0.07
227	toluene	40.1	366.8	406.9	-	315.4(Incinerated)	91.5	-
230	Lead solder	41.1	0.1	41.2	35.5	-	5.7	-
231	Nickel	306	-	306	305.88	-	-	0.12
283	Hydrofluoric acid	2.5	0.5	3	-	-	-	3
311	Manganese	14.3	349.9	364.2	351.2	-	13	0
346	Molybdenum	6	-	6	5.99	-	-	0.01

Quantity of over 1 ton is handled for the above-mentioned substances. "-" represents none.

Lead-free compliance product

This is a lead-free piezoelectric inverter that turns ON the cold cathode used for the LCD backlight.

Conventionally, the part was installed to the printed substrate by using lead solder. This product is a lead-free piezoelectric type backlight inverter. It is installed to the part by using non-lead solder, which improves heat resistance of the part without sacrificing the electrical characteristics.

For further details on our lead-free products, read p.22, "grappling with lead-free products."

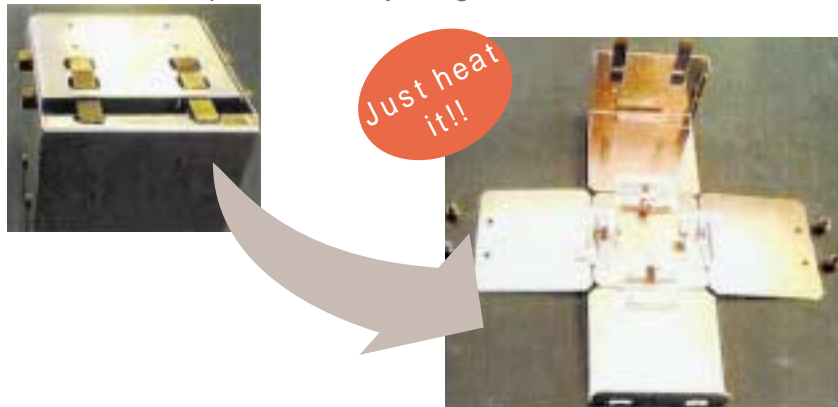


Screws and claws that can be scrapped with ease

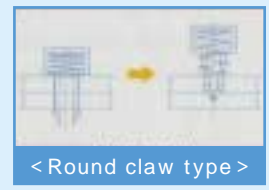
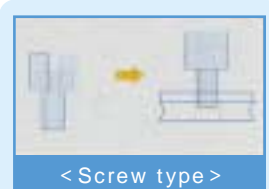
We introduce here an easily scrappable screw of shape memory alloy currently under development to reduce the scrapping cost of home appliances, etc. The concept of this product is to untighten screws with ease by applying heat to them.

This development is entrusted to this company by the Science and Technology Center, one of the affiliated organizations to the Ministry of Economy and Industry. (Joint development with Sharp Corp.)

Powerful aid to product recycling!



Applicable to various types of joints

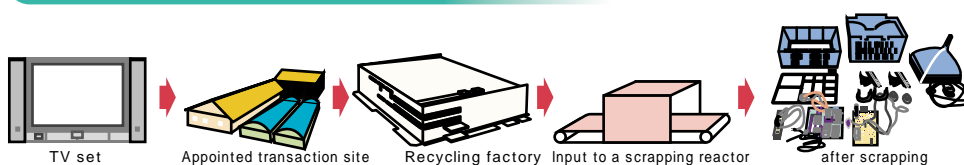


Present state of product recycling and the future visions as the consequence of this development

Current state: Scrapping of jointed components inside a product is mostly done manually (by using an electric driver, bar, etc.)

Future: Product → Heating reactor (with conveyor) → Jointed parts are spontaneously separated
"0" time for scrapping joint components manually

Image of a scrapping system



We will develop an unmanned scrapping system by which jointed sections are separated when merely placed into the heating reactor.



The development of lead-free products

State at this company

Starting with WEEE/RoHS in Europe, efforts for terminating the use of lead and other environmental loads are accelerating.

Under the circumstances, this company has set up Lead-free Working Group within the Green Purchasing Committee and been promoting the task of lead-free development since March 1999. Thus far, we have made a number of switching to non-lead products.

Master plan for lead-free development

- Total elimination of lead from the new products after the latter half of fiscal 2002
- Complete elimination of lead from every product except those specified by customers by the end of the fiscal 2002

Content/Item	Plating	Solder	FY2000				FY2001				FY2002									
			1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q						
Product switching program	Chip parts																			
	• Capacitors	Sn	-																	
	• Inductors	Sn	-																	
	Coils and transformers:																			
	• SMD	Sn																		
	• Discrete	Sn	Sn-Cu	Sn-Ag-Cu																
	• Unit (NF)	Sn	Sn-Cu	Sn-Ag-Cu																
	Sensor and components																			
	• Temperature sensor	Sn	-																	
	• Gyro	Sn-Cu	Sn-Ag-Cu																	
• Current sensor	Sn	Sn-Ag-Cu																		
• Super capacitor	Sn-Cu	-																		
Module																				
• Piezoelectric inverter	-	Sn-Ag-Cu																		
• Card reader	-	Sn-Ag-Cu																		
• IC card	-	Sn-Ag																		

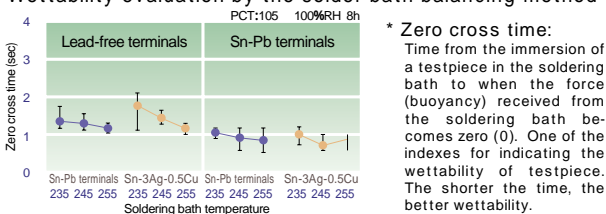
Examples of lead-free products

Chip component	Ceramic capacitor, integrated L
Coil and transformer	Coil and transformer in general (SS28V, SS11 and ME)
Sensor and components	OHD3, super capacitor
Module	Piezoelectric inverter, IC card

Evaluation content on lead-free

① Solderability (wettability) test

Wettability evaluation by the solder bath balancing method



Lead-free terminals and various solders

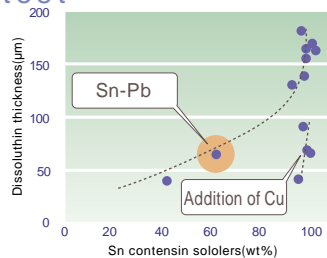
Lead-free terminals have slightly inferior wettability compared with the conventional Sn-Pb terminals. It provides almost same wettability as the conventional terminal in jointing with Sn-Pb eutectic crystal solder.

Wettability of lead-free terminals is almost equal to Sn-Pb terminals. Lead-free terminals can be used as before with Sn-Pb eutectic crystal solder.

SWET-2000(タルチン製)

③ Copper erosion test

In soldering very fine copper wire, care should be taken for copper erosion. This company has focused on the copper erosion accelerating effect of lead-free solder since earlier days and have been reviewing the measures for suppressing the phenomenon.



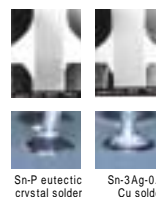
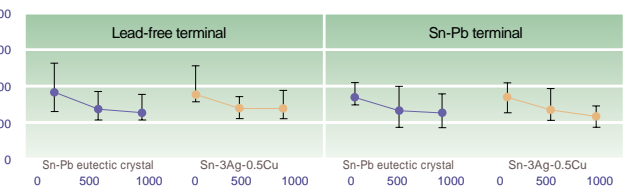
Compared with conventional Sn-Pb solder, approximately two times as much copper erosion occurs to lead-free solder.

However, this company has verified that the copper erosion reduction effect almost equal to conventional Sn-Pb solder can be gained by adding more Cu quantity to lead-free solder.

Same copper erosion reduction effect as Sn-Pb by adding 4% Cu

② Reliability testing on solderability

Holding force and sectional observation before and after the environmental test



Test result on the jointing strength between lead-free terminal and various solders before and after the environmental test

Lead-free plated terminal jointing state after 1,000 cycles of heat shock test. From the observation result of the section, favorable filler is formed. From the result of the jointing strength test, almost as equal result was obtained to the conventional Sn-Pb eutectic crystal solder.

Jointing strength of lead-free terminal is almost equal to conventional terminals irrespective of Sn-Pb eutectic crystal solder or lead-free solder.

④ Whisker test

Needle-shaped whiskers grown from the surface of lead-free plating, particularly of Sn plating presents reliability problem. This company has implemented the shelving test in the constant temperature and high humidity to study the surface treatment method having the whisker suppressive effect.

Condition	Undercoating, plating	Time (Hr)					
		0	500	750	1000	3000	5000
Inserted lead wire	Annealed copper plus Sn fusion						
	Annealed copper plus Sn 1% Bi						
	Annealed copper plus Sn plating						



An observation of terminal whiskers (5000h)

No growth of whiskers observed on the terminal plated with Sn-Cu fusion

No whiskers grow on the Sn-Cu fusion plated terminal



Promotion of green purchasing

NEC-TOKIN implements purchasing management by setting up the material working group within the Company-wide Green Purchasing Committee to contribute to providing environment-friendly products.

Results of activities

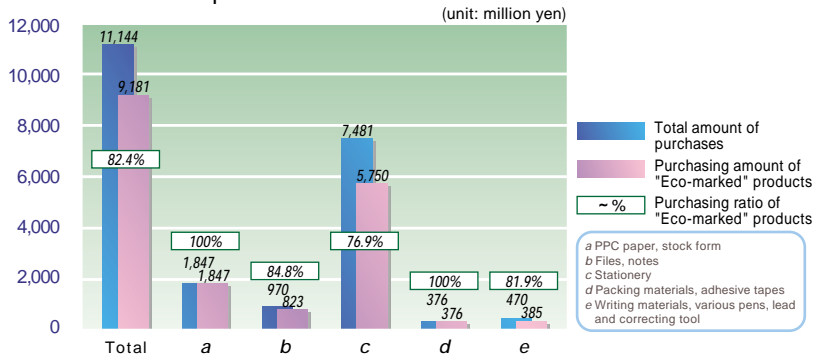
Item	Target	Results of activities	Evaluation
• Expanded purchases of the Eco-marked products	• Improved green purchasing ratio for the office supplies	Green purchasing ratio of the office supplies: 82%	
• Purchase promotion of green material	• Selection of the object products and substitution materials • Purchasing of environment-friendly materials	Object products were selected and completed the selection of substitution materials. Operation to start with the new products.	
• Confirmation of suppliers' green development level and reflection on to the vendor management	• Confirmation of the suppliers' level (questionnaire) • Purchasing of environment-friendly materials	Implemented environmental questionnaire with 602 suppliers (recovery ratio of 57%) and reflected the results on the vendor management.	
• Strengthening compliance capability with the administration	• Selection of chemical substances subject to the PRTR regulation-based management • Systematized acquisition and provision of purchasing information	Systematized the acquisition and provision of purchasing information of chemical substance subjected to the PRTR	

Evaluation: = Achieved more than targeted; = Achieved 80 to under 100%; x = 80% or less

Purchasing records of "Eco-marked products" and the "Green-marked products" for the fiscal 2001

This company gives priority to purchasing the "Eco-marked" and "Green-marked" office supplies.

Record data of purchases



Concept of environmental standard (markings)

	Environmental marking
Re-use of resources	<ul style="list-style-type: none"> Eco-marked products (with the recycling ratio of over 70%) Green-marked products (recycled paper from waste paper)
Appropriate disposal	<ul style="list-style-type: none"> Re-usables Re-development as resource enabled Can be incinerated (with no generation of dioxin or other toxic substance) Product easy to process or dispose (separability, crackability or sortability)

Purchasing acceleration of Green materials

To develop environment-friendly products, we are promoting to formulate plans for purchasing green materials (materials and parts).

We have implemented the following measures for fiscal 2001:

Examination of the in-house state of use of the environment impact substances

Selection of the environment-friendly products (substitution products)

Selection of the object products

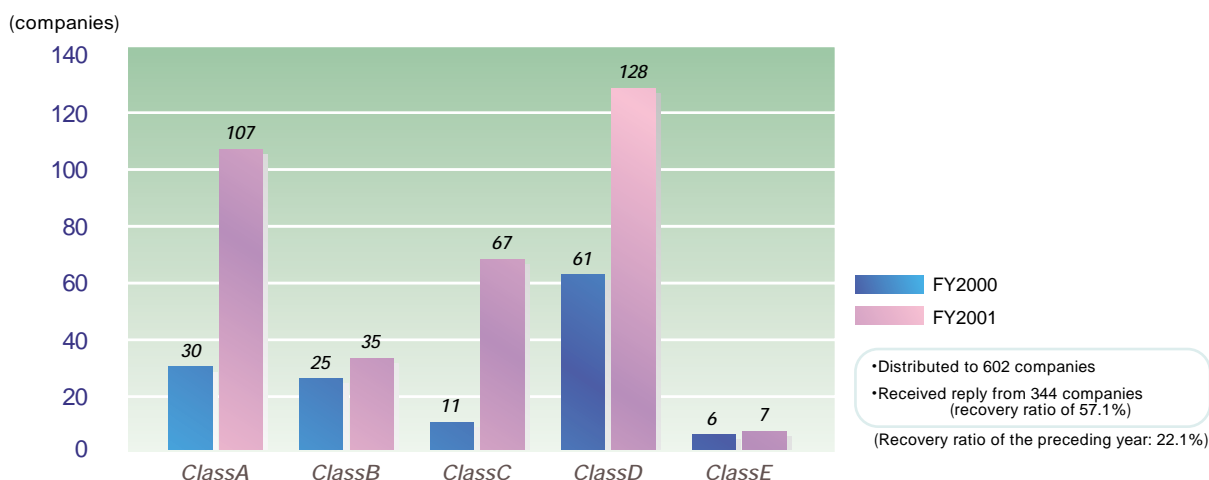
Environment impact substances	Substitutes
Plastic	Virgin materials Recycled plastic
Flame retardant	Flame retardant of bromine and phosphor systems Non-halogen system
Hexavalent chromium	Chromate-processed parts Processing of non-chrome system
PVC	PVC cable, tube, cases PVC-free
Lead	Lead solder, cable containing lead Lead-free



■ Questionnaire on the environment at vendors

This company conducts environmental questionnaire for the purpose of checking the green-development level of our vendors and reflecting the findings on them. We mailed our questionnaire to 602 companies and received reply from 344 of them for fiscal 2001.

Results of the environmental questionnaire for 2001



Standard for classification		Measures for each class
Class	Standard	Measures
A	Either acquired ISO 14001 or acquired or registered to EMAS	Positions the company as recommendable vendor from the environment point of view and recommends it to respective divisions in the company
B	Own system has been already constructed	
C	Scheduled to be either Class A or B by March 2002	
D	Enterprise owning plants neither designated nor specified by the environment laws and regulations (Energy-saving Law, Air Pollution Control Law, Water Pollution Control Law, Noise Regulation Law, Vibration Regulation Law, etc.) or enterprise not using 1 kg or over of toxic chemical substances annually., which does not fall on either A, B or C above stated.	Positions the company as a standard vendor and carries on ordinary transactions
E	Enterprise having a plant designated or specified by the environment laws and regulations or enterprising using 1 kg or over of toxic chemical substances annually, yet not falling on either one of A, B or C above.	Positions the company as a vendor desiring to make improvement. Not avoiding transaction basically but no business recommendation will be made to intra-company divisions. Moreover, evaluation will be forwarded as may be needed.

■ Measures to the administration

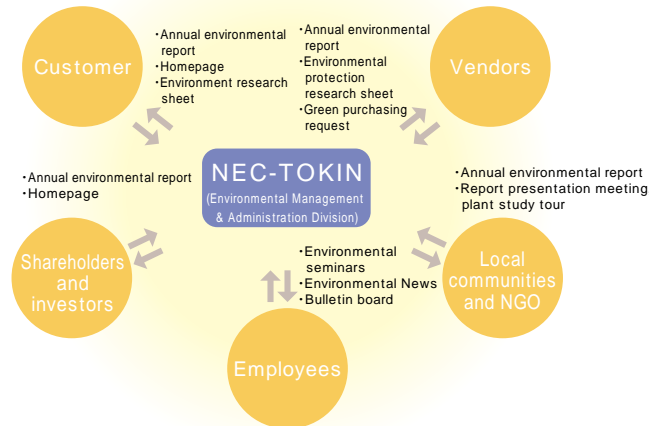
We implement data management for the purpose of grasping and providing purchasing information of chemical substances subjected to PRTR. This company promotes data management and operation by linking to the purchasing system and downloading the purchasing records, etc. as may be needed.



Annual Environmental Report Annual Environmental Report Annual Environmental Report Communication

NEC-TOKIN is prompt and positive in disclosing correct information concerning the environmental protection to various stakeholders. We disclose our environmental policy, our concept, grappling and activity state and achievements through the annual environmental report and other tools, simultaneously aiming at establishing bi-directional communication by reflecting requests, etc. forwarded by the stakeholders.

■ Conceptual diagram of communication



■ Measures for requesting environmental researches of customer

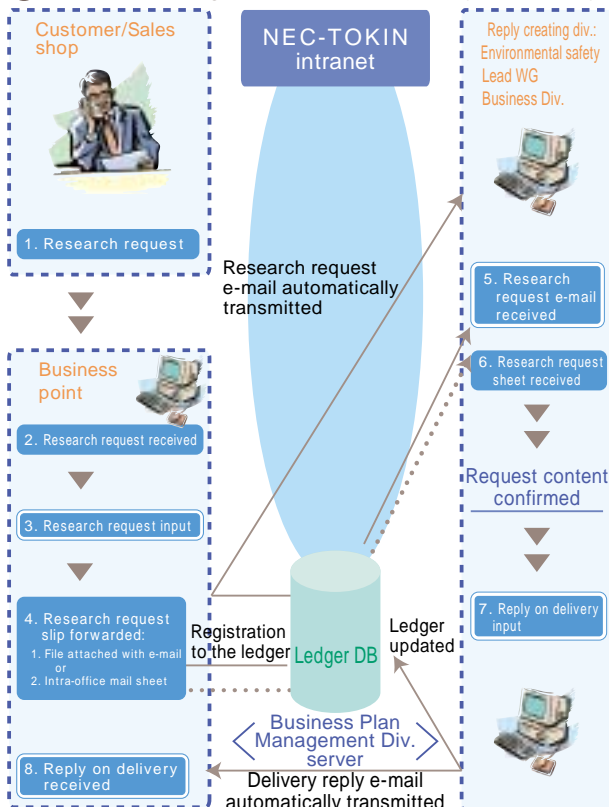
Customers' requests for researches on the environment-related matters for 2001 researched about 600 (monthly means of about 50 requests).

Deadline for the research requests is two weeks after receiving the requests. We have constructed WEB system to reply earlier within a shorter period. We have started operating this system since August 2000.

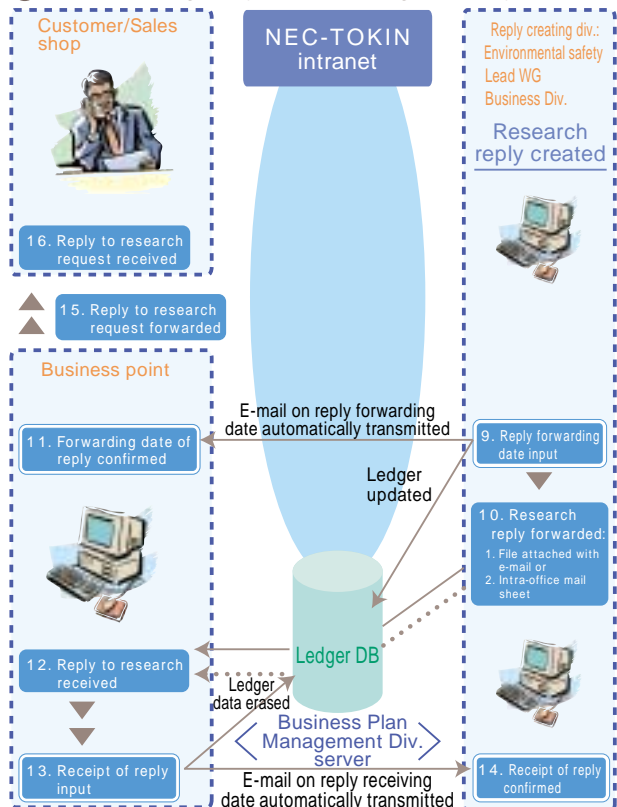
Customer environment research request Web system

Environment research request work flow

① From requesting a research to the reply on delivery



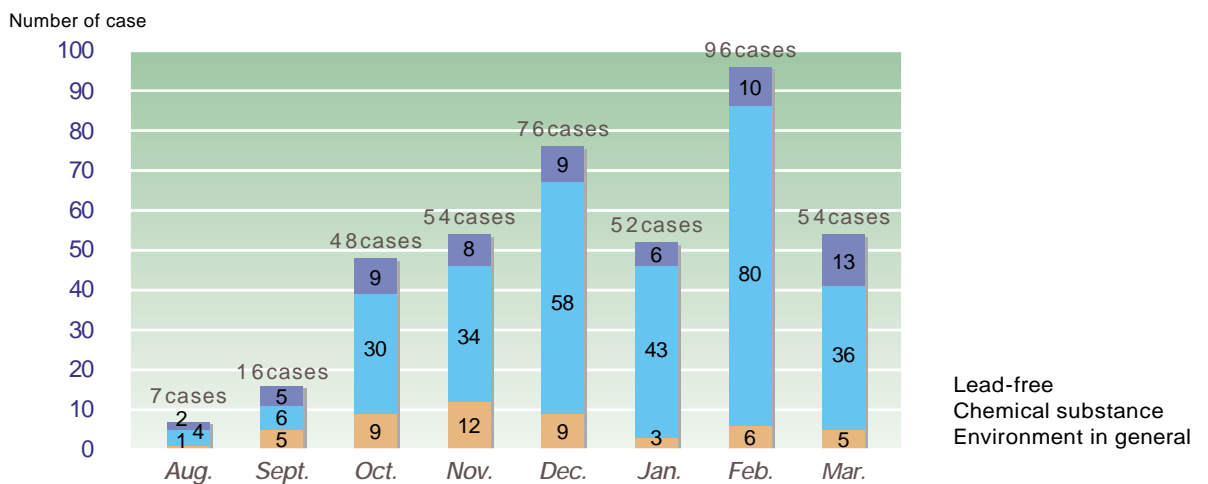
② From creating reply to forwarding the reply



■ NEC-TOKIN Intranet (Environment research request state)



■ Records of the number of research request cases (breakdown by type)



■ Shiroishi Zao Eco-Forum

At Shiroishi Plant, we hold the eco-forum 6 times a year among six ISO 14001-certified companies in the area to exchange environment-related information.

Scene of information exchange



Scene of the participants studying a case of energy saving





Annual Environmental Report Observance of Laws

NEC-TOKIN states in the corporate policy to abide by the laws and act by giving considerations to other requirements.

State of observance of laws

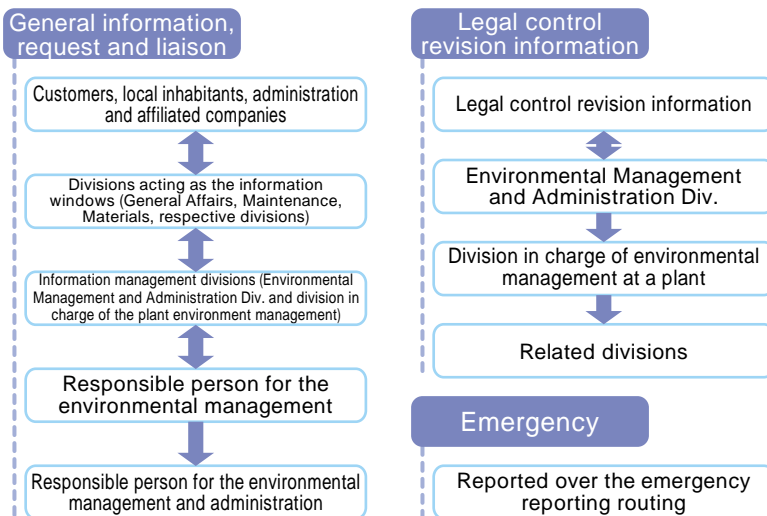
A total of 35 laws and regulations is applied to us part of which are as follows:

Environment Standard Law	Noise Regulation Law	Law Concerning the Rational Use of Energy
Air Pollution Prevention Law	Vibration Regulation Law	Law Concerning Chemical Substances
Water Pollution Prevention Law	Factory Location Law	Law Concerning Recycling

Other requirements include those from customers, local inhabitants, trade rules and administration, etc. and we are developing business activities by giving full considerations to a wide range of requirements.

System

Routing for the request, information from the customers and local inhabitants, information on the enactment and/or revision of legal control and the emergency contact are as follows:



Observance of laws

We committed no violation of laws nor were pointed out or instructed by the state, prefectural governments, etc. on the observance of laws and regulations for the preceding year..

Number of emergency that occurred

No emergency occurred during the preceding year.

Complaints

Sendai Plant received a complaint during the preceding year.

Date and time of complaint made	Content of complaint	Cause	Action taken	Result of the action
01:12 hour, July 18, 2001	Inhabitants in the neighborhood complaining about the noise	Motor starting noise	Working method was changed (terminated to use the motor)	Abnormal noise eliminated and the understanding of the inhabitants obtained.

Corrective action was taken immediately to the above complaint on the same day and the content of our measures was explained to and understood by the inhabitants.



Annual Environmental Report Environmental Audit

At NEC-TOKIN, we conduct the environmental audit twice a year. To promote the improvement of environmental management system continuously, we position the audit system as an important pillar and carry it on each year according to a plan.

■ Environmental audit

NEC-TOKIN implements the following audit programs:

- Audit by the 1st person (= internal environmental audit)
- Audit by the 2nd person (= mutual environmental audit by the NEC affiliated companies)
- Audit by the 3rd person (= environmental audit by the environmental certification body)

1) The 1st person audit is implemented internally at the Head Office Environmental Management and Administration Division, Sendai, Shiroishi, Hiroshima and Tsukuba Plants by the internal auditors trained within own company.

We improve the environmental management system continually through the system problems pointed out by the internal auditing and pertinent improvement measures taken.

The following table indicates the 2001 state of internal audits conducted:

Audit period	Subject division	Number of problems pointed out
Feb. 15, 2002	Environmental Management and Administration Div.	19 cases
Jan. 23 through 25, 2002	Sendai Plant	36 cases
Feb. 4 and 5, 2002	Shiroishi Plant	67 cases
Mar. 7, 2002	Hiroshima Plant	5 cases
Mar. 11 and 12, 2002	Tsukuba Plant	47 cases

2) The 2nd person audit is conducted every year in the environmental management exchange meeting of the NEC affiliated companies as the mutual environmental management review session. In addition to the environmental management system, auditing is made on the environmental performance as well.

This gives an opportunity for understanding the state of activities of other companies. Lateral development is thus promoted toward the improvement of own environmental management level.

For fiscal 2001, Shiroishi Plant was designated as the subject plant for the mutual environmental management review, which was implemented on Dec. 18, 2001. The following matters were pointed out by the review session.

Principal matters pointed out	Number of matters pointed out
Well-evaluated point	12 cases
Item requiring improvement	6 cases
Task and requirement	10 cases



Interview at the mutual environmental review session among the NEC affiliated companies

3) The 3rd person audit is conducted by Japan Quality Assurance Organization (JQA) on the effectiveness and the state of operation of the environmental management system.

The review was conducted from April 10 through 13 for 2001 and the following points were pointed out. We have completed our measures for these matters pointed out and the system has been improved.

Principal items pointed out	Number of matters pointed out
Excellent content that gives a good example to other (positive observation)	3 cases
Matters failing to meet the requirements	2 cases
Items requiring improvement (improvement opportunities)	13 cases



Scene of field review at a mutual environmental meeting among the NEC affiliated companies.



Occupational Health and Safety Management System (OH&SMS)

NEC TOKIN is shifting toward the Occupational Health and Safety Management System to promote the labor accident prevention activities.

Health and safety policy

The policy of this company consists of the basic ideal and the action guideline.

Basic ideal

NEC-TOKIN recognizes the importance of retaining the health and safety of the employees. To pursue the creation of pleasant workshop, it will promote continuously the health and safety management activities.

Action guideline

NEC-TOKIN will build up the health and safety management system under the guideline of the Ministry of Welfare and Labor to achieve the following items:

1. To develop the accident prevention activities participated by everybody.
2. To continuously improve the safety and health management system, simultaneously making efforts for reducing hazards and adverse factors.
3. To observe laws, regulations and other agreements.
4. To make efforts in promoting the employees' health and creating pleasant workshops.
5. To document this policy for thorough understanding by the employees and take action accordingly.
6. On developing the safety and health management activities according to this policy, to set up the target, establish pertinent measures in the safety and health management program and review them as may be needed.

Results of activities

During the fiscal 2001, we established the safety and health policy as the initial year for constructing OH & SMS on the basis of the existing system (safety and health management activities in conformity with the Industrial Safety and Health Law). We set up objectives and targets accordingly, created the management activity plan and put it into practice.

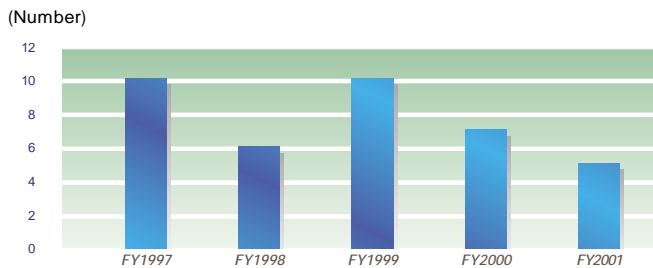
Item	Target
Clarification of the policy, objectives and targets	Formulation of the policy and setting of the objectives and targets
Establishment of OH & SMS management system	Company-wide OH & SMS. reorganization Creation of company-wide activity plans Creation of the manuals Development of the working instructions
Reconstruction of Zero Accident activities	5S renewal Review of patrol method Promotion of health improvement activities Survey on the actual state of the risk management system and formulation of the improvement program
Review of training and the law-abiding system	Acquisition of pertinent laws and ordinances and review of operation system Enhancement of in-house training and education Development of employees' acquisition of qualifications for the safety and health management



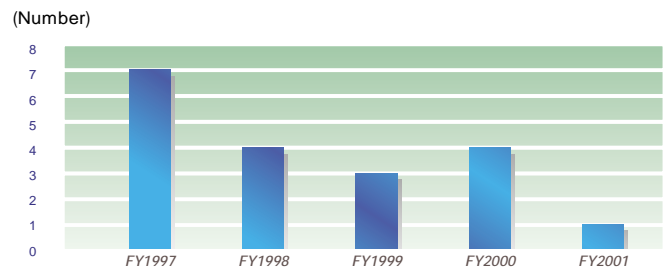
■ Safety activities

Targeted for Zero Accident, this company develops voluntary activities for various events to enhance the employees' safety-consciousness.

● Transition of occupational accidents



● Transition of accidents during commutation



Regular lifesaving training course held twice a year (Shiroishi)



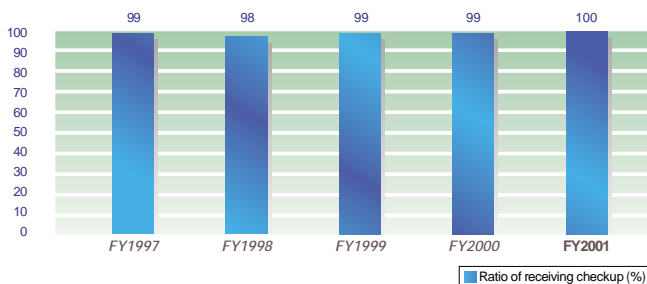
Course for static electricity accident prevention measures (Sendai)

■ Health management

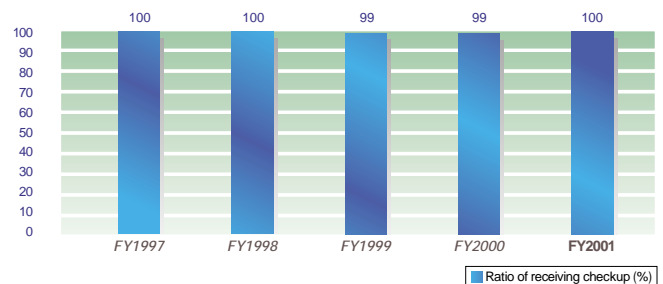
In conformity with the Industrial Safety and Health Law, this company carries on periodical and special medical check for every member of the employees to prevent diseases and earlier discoveries.

For the employees of over 35 years of age, the company implements life-habitual disease prevention checkup. It requires the employees of 45, 50, 55 and 59 of ages to go on for complete medical examination according to the detailed program of the health management system.

● Health checkup rate



● Complete medical examination rate



■ Health keeping and improvement

To prevent and improve the life-habitual diseases, this company follows up the health program by inviting medical specialists to give lectures on how to stay fit. It gives guidance on health through public health nurses and on nutrition through dieticians.

To promote the employees' health-consciousness and thorough health improvement, the company educates them through the Safety and Health Committee and the Safety and Health News.



Annual Environmental Report State of Overseas Activities

NEC TOKIN is working toward acquiring ISO 14001 for all of its overseas production points and achieving the targets of environmental management activities on the basis of the medium environmental protection program (Green Program).

1. NEC TOKIN Electronics (Xiamen) Corporation

Address: No. 9, Ri-Xen Rd, Xing-Lin Zone, Xiamen, China

President: Masakazu Okabe

Employees: 5,443 persons

Business: Manufacture and assembly of ferrite, transformer, coil, gyro, temperature sensor, substrate and battery

■ Environmental management activities of NEC TOKIN Electronics (Xiamen) Corp. (NTEX)

NTEX acquired ISO 14001 certifications (authorized by XECC) in May 2001. The environmental activities are being established progressively and the company was recognized as an advanced enterprise of environmental management. Officials from Xiamen Bureau of Environment visited the company to view the state of activities and inspect the newly installed emission control facilities, etc.

Results of 2001 environmental management activities

	Target	Measures	Results of activities	Evaluation
1	Observance of atmospheric emission standard	<ul style="list-style-type: none"> Introduction of the emission control facilities 	<ul style="list-style-type: none"> Newly installed and started operation of the activated carbon - combustion system emission control facilities (July). It has cleared the emission level well over the required standard. 	(Achieved)
2	Reduction of solid wastes (sorting started)	<ul style="list-style-type: none"> Improved ratio of recycling through the sorting of wastes (paper, plastic, copper wire, metals) 	<ul style="list-style-type: none"> Added value (income) from the recycling (0 to 132,181 (yuan)) 	(Achieved)
3	Water saving at dormitories (5% reduction from the preceding year)	<ul style="list-style-type: none"> Thorough understanding of environmental policy by the employees Environmental education Prompt repair of water leakage Control by meter 	Preceding year: 0.338 t/person Record of the Current year: 0.321 t/person Reduction of 5.02%	(Achieved)
4	Improved ratio of green planting Retention of over 35%	<ul style="list-style-type: none"> Expansion of greenery 	Green planting ratio of 36.8%	(Achieved)



Newly installed emission control facilities



Appearance of the plant



2. NEC TOKIN Electronics(Taiwan) Co.,Ltd.)

Address: 51-1, Kai-Fa Rd, Nan-Tze Export Processing Zone, Kaohsiung, Taiwan
 President: Jun Yonekura
 Employees: 130 persons
 Business: Manufacture of ferrite, transformer, coil and laminated chip inductor

■ Environmental management activities at NEC TOKIN Electronics (Taiwan) Co., Ltd. (NTTE)

NTTE acquired ISO 14001 certifications (authorized by SGS) in May 2001. It has the priority task of reducing wastes and making risk measures. Particularly it has achieved the reduction of wastes over the target.

Results of 2001 environmental management activities

	Target	Measures	Results of activities	Evaluation
1	Reduction of wastes	<ul style="list-style-type: none"> Reduction of sludge (50% reduction from the preceding year) 	80% reduction	(Achieved)
2	Energy saving, power saving by 1%	<ul style="list-style-type: none"> Serious power saving through intensified management system Employee education and enlightenment 	Power saving ratio of 0.5%	Not achieved yet
3	Risk measures, etc.	<ul style="list-style-type: none"> Improved sludge storage method Implementation of sorted dumping Introduction of wastewater processing facilities Education on environmental protection Intensified management of toxic chemicals (Review of the storage and development of storage supervisor) 	<ul style="list-style-type: none"> Completed Implemented Completed Implemented as planned Completed 	(Achieved)



Appearance of the plant



Newly installed wastewater processing facilities

3. Tokin Electronics (Malaysia) Sdn.Bhd.

Address: 3009-3022, 3rd Floor, Block B, Resource Complex, 33 Jalan Segambut Atas, Segambut 51200 Kuala Lumpur, Malaysia

President: Kaoru Katsumata

Employees: 325 persons

Business: Manufacture of ADSL splitter and EMC transformer coils

■ Environmental management activities at Tokin Electronics (Malaysia) (TEM)

By setting the acquisition date of ISO 14001 certifications in June 2002, TEM is promoting the company-wide development of the activities. The targets include the waste reduction (15% reduction within 2002), intensified risk management (lock-up control of chemical substances), etc. The company is also carrying on a systematic employee training and education programs to enhance their environment-consciousness.



Appearance of the plant



In-house training on environmental protection



Improved state of chemical substance storage - controlled by locking



Sorted state of wastes after improvement

4. NEC TOKIN Electronics (Vietnam) Co.,Ltd.

Address: A5&A6 Long Binh Techno Park EPZ, Long Binh Ward, Bien Hoa City, Dong Nai Province, Vietnam

President: Masayuki Tada

Employees: 721 persons

Business: Assembly of EMC transformer coils and isolators

■ Environmental management activities of NEC TOKIN Electronics (Vietnam) Co. Ltd. (NTEV)

Aiming at acquiring ISO 14001 certifications within 2002, NTEV already conducted the initial investigation of the environmental load. It had provided the managers and senior employees with environment-related education. The company as a whole is steadily making preparation for environmental management.



Appearance of the plant



Scene of retained and improved green planting



Environmental education for the senior employees



Study meeting participated by the management



Annual Environmental Report Environmental Load Mass Balance

The mass balance indicates the relationship between the business activities of NEC TOKIN and the environmental load.

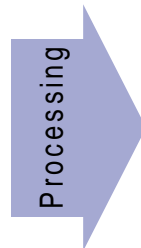
State of environmental load (annual)

Main input

Raw materials	•Metallic nickel	306 t
	•Metallic chromium	31 t
	•Metallic cobalt	65 t
	•Samarium cobalt	10 t
	•Iron oxides	460 t
	•Manganese compound	373 t
	•Lead compound	41 t
	•Zinc oxide	55 t
	•Polyester film	120 t
•Ink	1 t	

Chemical substances	•Toluene	436 t
	•Methyl ethyl ketone	144 t
	•MIBK	179 t
	•IPA	5 t
	•Other solvents	5 t
	•Hydrofluoric acid	3 t
	•Other acids	2 t
	•Lead solder	50 kg

Energy	•Electricity	44,000 Mwh
	•Liquid fuel	8,968 kℓ
	•Gas	2,370 km ³



Main output

CO ₂	•Carbon dioxide	41,000 t
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Atmospheric diffusion	•Boiler emission gas	22,200 Nm ³ /h
	•Other emission	10,000 Nm ³ /h
	•Spontaneous evaporation of solvents	1.0 t

Products	•Magnetic metal
	•Electromagnet
	•Ferrite core
	•Transformer coil
	•EMI measure parts
	•Piezoelectric gyro
	•Magnetic card
	•IC card
	•Ferrite powder
•Other	

Waste-water	•Wastewater of production system	24,000 m ³
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Wastes	•Industrial waste	137 t
	•General waste	133 t

Recycling of resources	•Waste plastic	650 t
	•Metal waste	180 t
	•Sludge	720 t
	•Waste oil	660 t
	•Paper	200 t
	•Wood	60 t
	•Glass, porcelain and earthenware	60 t
	•Solder	240 kg



Awards Received

	No.	Commended organization	Award	Commended by	Date of commendation
Environment	1	Hiroshima Plant	Commendation for green plantation promotion	Chugoku Bureau Director of the Ministry of Economy and Industry	Oct. 2001
	2	Shiroishi Plant	Commendation for promoting rational power application	Chairman, Power Utilization Promotion Committee for 7 Prefectures in Tohoku Area	Oct. 2001
Safety and health	1	Shiroishi Plant	Commendation for traffic safety	Shiroishi Police Station, Miyagi Prefecture	Jun. 2001
	2	Shiroishi Plant	Distinguished prize for industrial hygiene measures	Miyagi Bureau Director of Labor	Oct. 2001
	3	Shiroishi Plant	Commendation for promoting blood donation	Minister of Welfare and Labor	Jul. 2001
	4	Sendai Plant	Commendation for traffic safety	Station Master, Sendai Minami Police Station, Miyagi Prefecture	Jan. 2002

Employees with Official Environment Qualifications

Type of qualification	Number of holder
Anti pollution managers (Air quality)	9 persons
Anti pollution managers (Water quality)	13 persons
Anti pollution managers (Noise levels)	8 persons
Anti pollution managers (Vibration levels)	6 persons
Manager for special administration of industrial wastes	21 persons
industrial waste disposal facility engineer	5 persons
Energy controllers (Heat)	8 persons
Energy controllers (Electricity)	5 persons
Energy control staff (Heat)	7 persons
Energy control staff (Electricity)	12 persons
Person in charge of safety for high-pressure gas super visors (Class A and others)	23 persons
Person in charge of poisonous and deleterious substance handling	12 persons
Person in charge of measuring of working environment	1 person