

Environmental Sustainability Report 2003

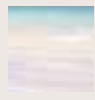
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[Editorial Policy of the report]

This report shows the results of environmental activities of Hitachi Air Conditioning Systems, and informs of our plans that we intend to carry out in the future.

This report contains the following

- 1) Added results of 2 overseas sites.
- 2) Report on the plan of environmental activities FY2002
- 3) Report about environmental accounting
- 4) Report about the plan and result of the switch over to a new refrigerant
- 5) An improved of eco factory page
- 6) Expressed determinations of our employees

Period

FY2002 (1 April 2002 to 31 March 2003)

Scope of the Report

We conducted a survey on the environmental impact of Hitachi Air Conditioning Systems and its related companies and subsidiaries

Reference Indicator

"Environmental Report Guidelines" (Ministry for the Environment)

The Next Report will be released in June 2004

Our web page

<http://www.hitachiacs.co.jp/>

Message From the President

The Hitachi Air Conditioning Systems Group as a Global Citizen

The expansion of economic activities that far exceed the restorative capabilities of the natural environment cause problems such as global warming, atmospheric pollution, and waste disposal, all of which are global environmental issues.

To resolve these issues, we need to work in cooperation with the local government, corporations and citizens.

Since we, Hitachi Air Conditioning Systems Co., Ltd. separated from Hitachi, Ltd., in 1999, we have actively worked to resolve environmental issues under the title "focus on the realization of a truly wealthy society by harmony with the Environment and positive social contribution activities in our management philosophy".

This means that we are manufacturing efficient eco- friendly products using safer and cleaner materials. We hope that the products can be used for a long time but when they reach the end of their life span that they can be recycled. Our challenge is to provide consistent support throughout manufacture, sales, placement and service.

As we have 2 domestic manufacturing bases and 5 overseas manufacturing bases, we promote global environmental activities. It is important however, to promote supporting activities in local areas, so we always contribute to social and community activities. We focus on both the Global and Local stance, we continue to promote environmental activities in a way that we like to call "Glocal".

We have positive roles in saving the natural environment and building of the sustainable society as one member of Hitachi group. However, we at Hitachi Air Conditioning Systems are not only members of a business, but also members of a society, and we are striving to foster global citizens on which the future will rest.



President and Director
Yoshihiko Nakayama

Message from the General Manager of Environmental Division

Reduce the Environmental Impact and Contribute to Environmental Preservation

We manufacture and sell eco products that are popular with our customers because they make provide a more comfortable environment in there day-to-day life. However, we have to consider the fact that there is some environmental impact caused by the manufacture and use of our products. We recognize this and as a global citizen we strive to reduce the environmental impact by developing new technology and reforming our business.

To reduce the environmental impact of our product in manufacture, we are working for energy conservation, zero-emission of waste and proper management of chemical substances. As for the reduction of the environmental impact in usage, we have developed products that use the highest level of technology, the most efficient and quietest in the industry. We are also trying to develop a range of eco-products that use refrigerant with no impact on the ozone layer and lead free circuit boards.

We feel, it is important to construct good relationships with stakeholders and local communities around our company through environmental preservation activities and the communication with our neighbors. We always promote environmental activities under the strong leadership as a member of Hitachi. We hope to have a good understanding and cooperation with you



Corporate Director and
General Manager of
Environmental Division
Takeshi Fukuyo

1 Standards for Corporate Activities

It is our mission to provide customers with products that help them lead a comfortable life. So it is crucial to consider the environment for our future. We promote environmental activities to provide advanced products, systems and service with new refrigerant and freon recovery.

Our Basic Philosophy for Management

Our basic philosophy is to work along the principles; harmony, sincerity and a pioneering spirit, to take pride in Hitachi and to contribute the society through superior technologies and products. We are fully aware that enterprises are also members of society, as a responsible corporate citizen devoted to fair and clear activities, we also focus on realization of a truly wealthy society through harmony with the environmental and the aggressive pursuit of activities that contribute to society.

Environmental Protection Action Guidelines

The Environmental Activity Concept

For the future of the earth, we promote activities looking ahead into the future and we take into consideration the harmony with the environment in everything we do.

Environmental Activity Guidelines

1. We promote environmental activities with consideration of everyone's health and the harmony & preservation of the global environment on every activity and stage for the next generation.

2. In recognition of problems effecting the global environment we are trying to provide advanced products, system services.

3. Throughout the complete life cycle of our products we focus on the consideration of the recycling, energy and resource saving, waste reduction and polluted substance management.

4. We observe all environmental regulations. In addition, we have self-imposed rules to minimize the environmental impact

5. To strive for continual improvements in environmental activities, we will make effective use of the environmental management system and environmental education.

Environmental Action Plan 2002

Self-evaluation: Significant Achievement Accomplished Need more improvement

Category	Action targets	Contents	Target value in FY2002	Self-evaluation	Final target value	Final target date		
Eco-Management	Promotion of Environmental Management	Standardised management practices include affiliated companies and try to strengthen our EMS*1 along with stricter environmental controls.	•familiarize and exchange indication and information of environmental activities					
		Promote environmental management as business strategy	•provide appropriated management depend on environmental impact					
	GREEN21 ver.2	Improve GEEEN points	•Improve measures based on Green Point ver2 until FY2005 •Calculate overseas sites in FY2001 and guide them after FY2002	GP320		GP640	FY2005	
Eco-Mind	EMS*1	Implementation of environmental management system	Plan and implement to acquire ISO14001 in 2 overseas sites which do not have ISO14001 yet					
Eco-Mind	Environmental Accounting	Establish environmental accounting practices	Count 2 domestic and 2 overseas sites' environmental accounting	A class management				
	Environmental Education	Create advanced eco-minds amongst employee and their families Increase the level of employee education and number of licensed and certified personnel	•Implementation of activities to nurture eco-minds including our employees' families. •Satisfy license holder employees.					
Eco-Products	Green Products	Expand range of eco-products	Promote to develop eco-products based on plan.	3 types registration		Expand range:60%	FY2005	
		Promote green procurement	Plan and implement the search of client and procurement products based on green procurement guideline				FY2003	
		Abolish the use of lead solders on the board	Switch lead-free solder through our own manufacturing process	Present manufacturing products				FY2003
			Switch lead-free solder through the outside manufacturer	Search of products				FY2004
		Abolish substances covered by RoHS	Abolish substances covered by RoHS	Search of products				Jan/2005
	Abolish products that use HCFCs	•Switch to no HCFCs products along the FY2002 plan to abolish HCFCs	19 types			159 types	Dec/2003	
		•Reduce the emission of HCFCs and alternative refrigerant for air, along the reduction plan.	10% reduction based on FY2001 result			Abolish emission for the air	Dec/2003	
	Prevention of Global Warming	Reduce sales-related energy usage, 1% per year	Implement the reduction plan	4% reduction		5% reduction based on FY1998	FY2003	
		Reduce the basic unit of production-related CO ₂ emissions	Plan new promotion	15% reduction		35% reduction based on FY 1990	FY2010	
	Eco-Factory	Waste Reduction	Achievement of zero emission	•Complete separate collection	FD*2 volume is under 19t		FD*2 volume is under 5t	FY2004
			•Promote to recycle of wastes	FD*2 rate is under 0.4%		FD*2 rate is under 1%		
Eco-Factory	Management of Chemicals	Thorough management of chemical substances and reduction of emission values	Count and notify PRTR law notification data by CEGNET Develop and promote reduction target for substances			Emission : 30% reduction	FY2005	
	Management of PCB	Strict storage management of electrical devices that use PCB's,such as transformers and capacitors			Complete the treatment	FY2016		
Eco-Factory	Industrial Wastewater and Water Quality Management	Thorough prevention of waste water disposal facilities accidents						
		Thorough management of new added substances						
Collaboration with stakeholder	Environmental Communication	We are committed to strengthening communication with stakeholders*3 and disclosing information						
		•Disclose information through PR and advertising activities						
		•Periodic release of information through the publication of environmental reports and our Web site.						
		•Participation in a variety of environmental activities outside the Company, from presentations and lectures, to regional activities						
	•Conducting environmental town meetings with stakeholder							
•Opinion exchanges through questionnaires, survey, and study tours.								
Activities as a global citizen	Through the volunteer activities and by encouraging employee to actively participate to contribute to society.	•Carry out environmental awareness education with our neighbors through the introduction of environmental activities, and by opening our sites						
		•Cooperation with local NGOs						
		•Implementation of local afforestation and clean up activities						
Sustainable business model	Increase sustainable business model and develop new product emphasis on environmental preservation, recyclable and energy conservation							

*1 EMS: Environmental Management System *2 FD: Final Disposal *3 stakeholder: customers, government bodies, shareholders, business partners, and general citizens

Eco-Management

Our passion for environmental preservation will only be realized through the use of a proper management system. We have organized an effective eco-management system to implement the environmental activities more positively and smoothly.

Environmental Management Structure

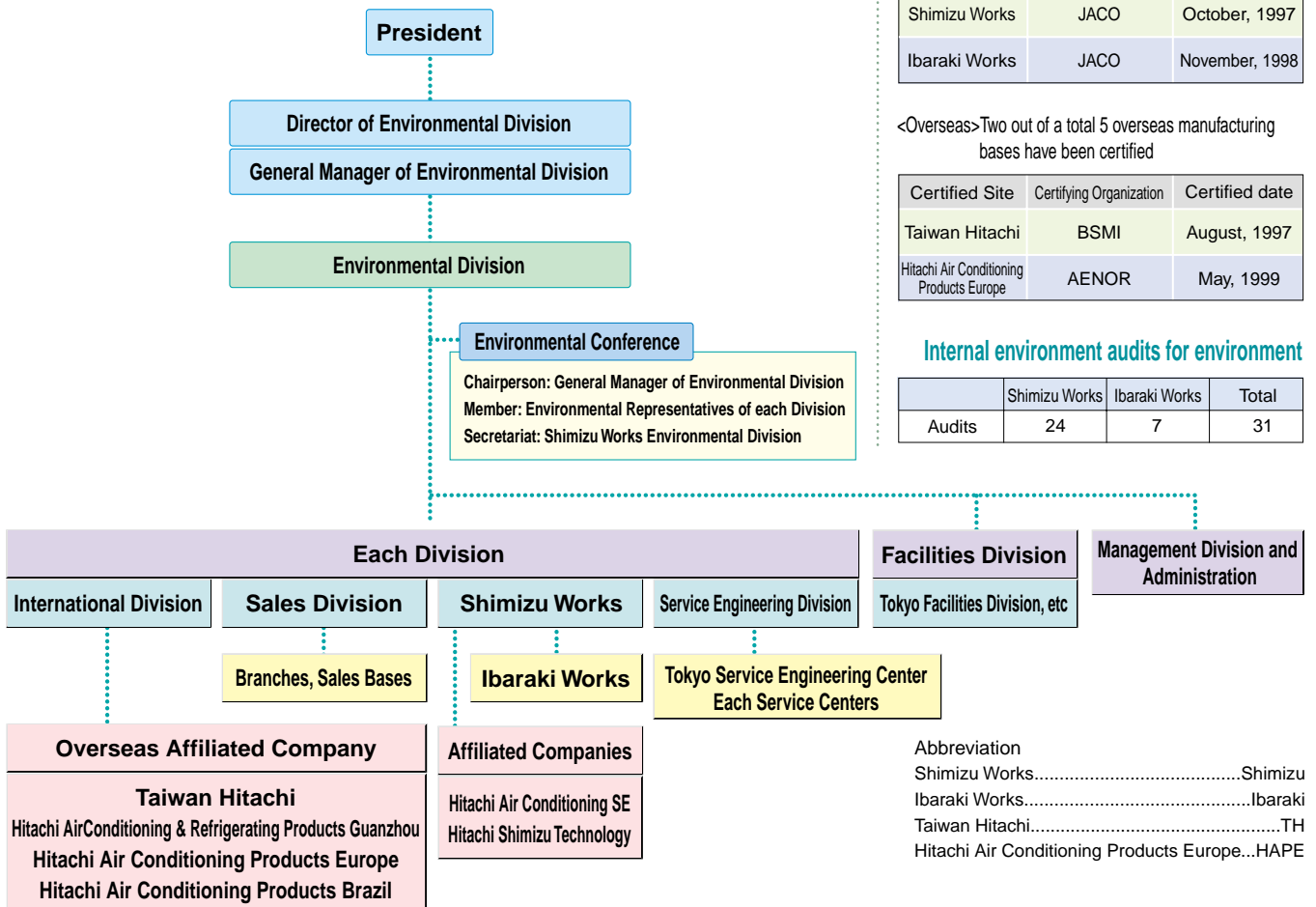
We have established the Environmental Specialties Committee led by the General Manager of Environmental Division who was appointed by the President. As a whole Hitachi Air Conditioning Systems group, our offices and factories have positively promoted wide environment activities based on the decided principles and policies of the Committee.

Environmental Management System

One of activities to reduce the environmental impact and to contribute environmental preservation was to organise an environmental management system based on ISO14001. Both our domestic manufacturing bases and two out of the total 5 overseas sites received ISO14001 certification. To confirm the implementation of the environmental management system and the results of the

environmental performance based on ISO14001, every year we are assessed by an accredited organization outside of the company. Furthermore, twice a year an environmental audit is carried out by internal auditors who are certified both inside and outside the company. In FY2002 the external report stated that both our domestic sites had improved.

Environmental Management Structure in Hitachi Air Conditioning Systems



ISO 14001 Certification Status

<Domestic> Both our domestic manufacturing bases have been certified

Certified Site	Certifying Organization	Certified date
Shimizu Works	JACO	October, 1997
Ibaraki Works	JACO	November, 1998

<Overseas> Two out of a total 5 overseas manufacturing bases have been certified

Certified Site	Certifying Organization	Certified date
Taiwan Hitachi	BSMI	August, 1997
Hitachi Air Conditioning Products Europe	AENOR	May, 1999

Internal environment audits for environment

	Shimizu Works	Ibaraki Works	Total
Audits	24	7	31

Abbreviation
 Shimizu Works.....Shimizu
 Ibaraki Works.....Ibaraki
 Taiwan Hitachi.....TH
 Hitachi Air Conditioning Products Europe...HAPE



GREEN 21 ver2

GREEN 21 version 2 was implemented in 2002 to replace GREEN 21 in order to advance environment activities. The activity period specified for GREEN 21 version 2 is fiscal 2002 to 2005. The distinguishing features of GREEN 21 ver2 are its indicators based on our Sustainability Compass: Eco-mind & Management, Nature-friendly Products & Eco-factories, Worldwide Stakeholder Collaboration, and Sustainable Business Models. The evaluation method has been replaced to one that uses absolute points to enable us achieve our targets by fiscal 2005 within all our sites. The evaluation standards are divided into 53 performance indicators spread over 8 different categories, with each performance indicator graded on scale from 0 to 5. Level 2 is awarded for achieving the current activities level, Level 4 for achieving the targets set out in our Environmental Action Plan (FY2005), and Level 5 for implementing activities that exceed these targets. Finally, a coefficient is applied to the evaluation level awarded for each indicator. The full points for each category is 100 GREEN Points (hereafter, "GPs"), with a possible total score of 800 GPs. Also we have standardized the items for evaluation and the activity period for both our domestic and overseas companies so that they are in accordance with the newly revised evaluation standards.

GREEN21 ver 2 Activities

Activity period : FY2002 to FY2005
(based on FY2002 levels)

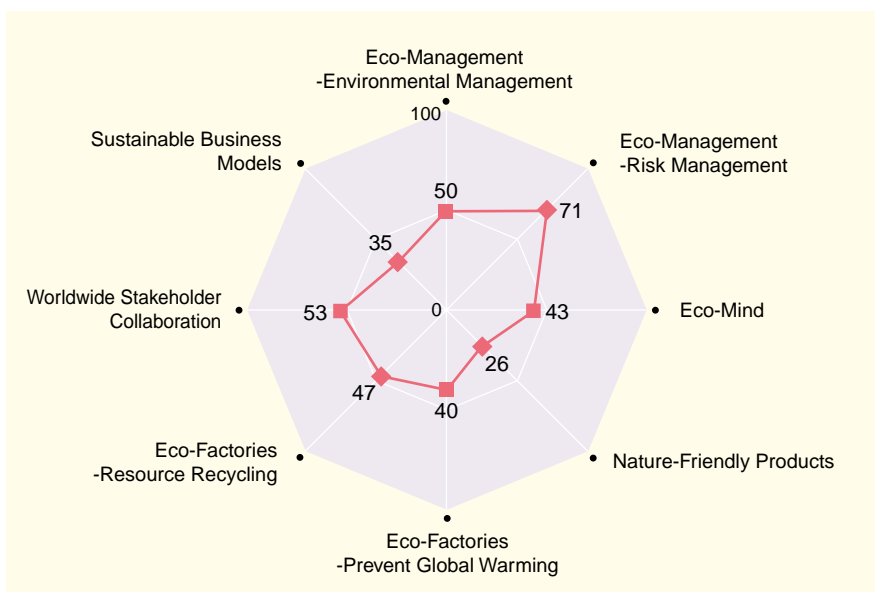
Target

Year	FY2002	FY2003	FY2004	FY2005
Target GPs	320	426	533	640
Actual GPs	363			

Evaluation Criteria (8 categories/53 performance indicators)

Category	Principal Performance indicators	Domestic	Overseas	Average
Eco-Management -Environmental Management	Environmental management, Action plans, Environmental accounting	65	35	50
Eco-Management-Risk Management	Fixed our own standard, Regulatory compliance	84	58	71
Eco-Mind	Education for employees	44	41	43
Nature-Friendly Products	Product assessment, Green procurement, Logistics measure	27	24	26
Eco-Factories-Prevent Global Warming	Energy conservation in production facilities	60	20	40
Eco-Factories-Resource Recycling	Waste reduction, Chemical substance management,	72	22	47
Worldwide Stakeholder Collaboration	Information disclosure, Communication and community activities	73	32	53
Sustainable Business Models	Promotion of sustainable business models	31	39	35
Total		456	271	363

FY2002 Actual GPs



Data from Shimizu, Ibaraki, TH, HAPE



Environmental Accounting

We adopted environmental accounting as one of the environmental activities as a key element of management. We disclose our environmental management information; cost and economic effect of environmental activities to let our stakeholders understand. In FY2002, we invested heavily in facilities for prevention of ozone depletion, product recycling and treatment of CFC's.

Environmental accounting standard

Environmental Conservation Cost

This expense amount includes personnel, materials, depreciation and expenditure.

This investment amount is the value of depreciable assets such as facilities and equipment for environmental conservation and reduction of environmental impact.

- Investment in facilities for reduction of environmental impact
- Cost of research and development of eco-products (excluding income form grants and amount of sales income)

Environmental Conservation Effect

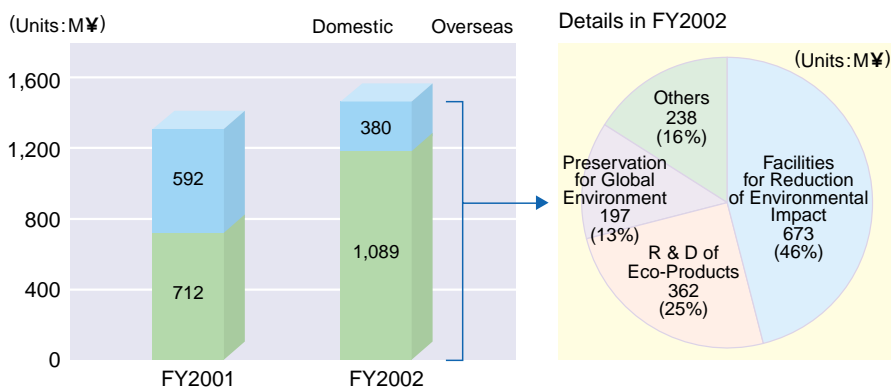
Economic effect

- Real Earning Effect is profit on sales resulting from reclaiming resources from waste by separation or recycling.
- Cost Reduction Effect is expense reduction, material reduction by changing manufacturing process and substitution effect.

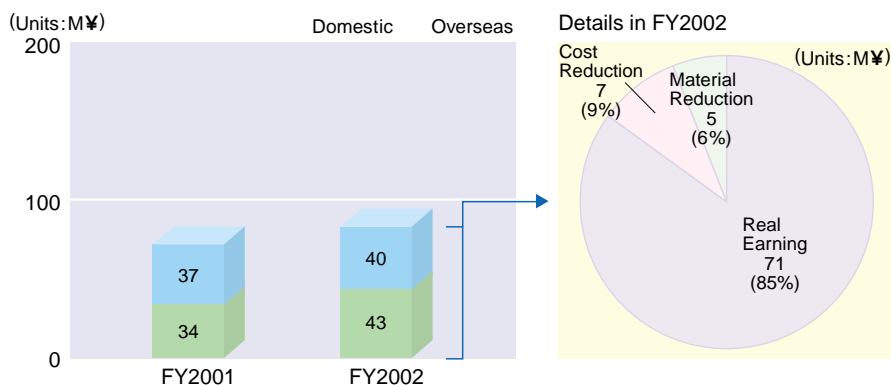
Item of Material Effect

- In a business area, the reduction of the environmental impact caused by production activity, is calculated for each conservation activity by comparing with the previous years results.
- The product effect on the environment is calculated by comparing the reductions of standard operation with our conventional models.

Environmental Conservation Cost and Investment



Environmental Conservation Effect



Item of Material Effect (amount of reduction)

Item of Material Effect	FY2001	FY2002	Details
1. In business area, reduction of energy consumption	1,118 MWh	372 MWh	Reduction of energy consumption by energy saving facilities.
2. In business area, reduction of final disposal amount	80t	115t	Reduction of final disposal amount by separation or recycle
3. In business area, reduction of HCFC	133t	21t	Changing for substitution substance
4. Energy conservation from using our products	37,200 MWh	60,312 MWh	Energy saving by using our product for customer

Data from Shimizu, Ibaraki, TH, HAPE

Eco-Mind



We provide environmental education for all our employees. We hope that our passion and ideas will lead to specific action from our employees. We also provide high level professional programs for environmental-related workers, and training for emergencies.

Environmental Education

Our conscious and the action of each member of staff is the most important thing to continually improve and promote the environmental preservation around our sites and their neighbors. As part of the Environmental Management program we focus on education for each level. We hold environmental classes to develop and communicate the latest information. Furthermore, we recognize certain jobs have the risk of causing environmental impact. The employees involved with these tasks are registered as "Employees with Specialized Job Classifications" and are trained with special programs to prepare them for possible emergencies.

Environment-related license holders

We nurture and educate environment-related license holders like Pollution Control Managers who have high level knowledge. Our domestic sites have the required number of environment-related license holders that as stated by law.

e-Learning

We have an e-learning environmental education system providing a wide range of education materials, from general to more specific subjects. It differs from our previous system and allows education materials from 11 categories to be available to the employees all the time.

Education Programs

No.	Programs	Target Employees
1	General Employees Program	All employees, new employees (include transfer and loan employees)
2	Manager's Program	Executive managers
3	Administrator's Program	Administrators
4	Specialised job classified employees' Program	Specialised job classified employees (Design, Production engineering, Operator, Analysis)
5	Qualification holder's Program	Environmental-related qualification holders
6	Audit's Education	Environmental internal auditors
7	Affiliated Company Employees' Program	Affiliated company employees on each site

Environment-Related License Holders

Licenses	No.of License holders	Licenses	No.of License holders
Pollution Control Manager(Air)	6	Drying Equipment Operation Manager	48
Pollution Control Manager(Water)	12	Radioactive Materials Manager (Type 2)	2
Pollution Control Manager(Noise)	10	X-Ray Operation Manager	5
Pollution Control Manager(Vibration)	9	Organic Solvent Operation Manager	67
Energy Manager(Electricity Type1)	2	Oxygen Depletion Hazardous Job Manager (Type 1)	1
Energy Manager(Heat Type2)	2	Oxygen Depletion Hazardous Job Manager (Type 2)	3
Electrical Management Engineer (Type2)	2	Specific Chemical Materials Operation Manager	20
Electrical Management Engineer (Type3)	2	Poisonous and Deleterious Substances Operation Manager	2
Waste Disposal Facilities Supervisor (intermediate Treatment Facilities)	1	Environmental Measures (concentration)	1
Waste Disposal Facilities Supervisor (Incineration Facilities)	1	Working Environment Measurement Manager (Type1)	3
Industrial Waste Special Manager	4	Working Environment Measurement Manager (Type2)	2
Environmental Management System Jury	2	Hazardous Materials Chief Officer	101
Sanitary Manager in Sanitary Engineering	3	High-Pressure Gas Safety Production Supervisor(Class A Mechanical)	7
Sanitary Manager	34	High-Pressure Gas Safety Production Supervisor(Class B Chemical)	33
Boiler Engineer(Advanced)	6	High-Pressure Gas Safety Production Supervisor(Class 1 Refrigeration)	8
Boiler Engineer(Intermediate)	12	High-Pressure Gas Safety Production Supervisor(Class 2 Refrigeration)	39
Boiler Equipment Specialist	4	High-Pressure Gas Safety Production Supervisor(Class 3 Refrigeration)	72

Data from Shimizu

Nature-Friendly Products



We have changed to a new refrigerant with No Ozone Depletion Potential and we strive to consider the environment when we are creating our products. We also concentrate on the reduction of environmental impact with resource saving, energy saving and chemical substance reduction.

New Refrigerant

We are switching from HCFC with Ozone depletion potential to HFC with no Ozone Depletion Potential. We completed 76% of our products in FY2002 and we will finish the switch over by December 2003.

*HCFC refrigerant *HFC refrigerant

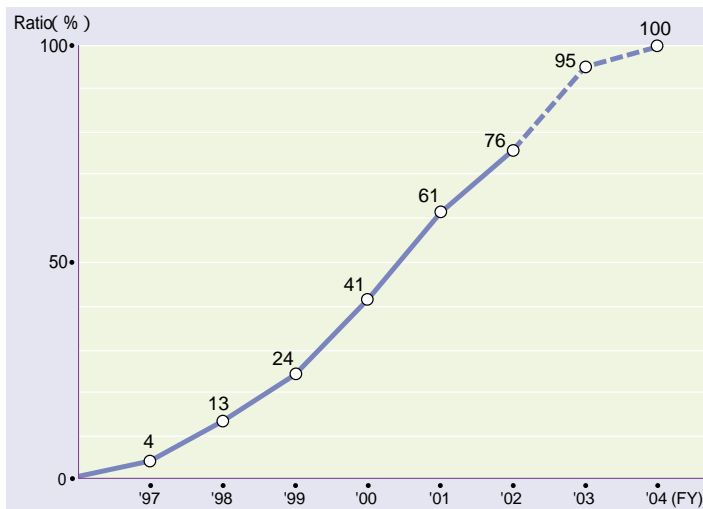
Eco-Products

We have introduced the Design for Environment Assessment System (hereafter, "DFE") based on the DFE concept and we have developed products under this assessment. The principle of this system is to minimize the environmental impact of a product over the course of its life cycle, from the selection of a product's component materials, manufacturing, distribution, use, recovery, disassembly and proper disposal. It is applied to each product during the development stage; however a product can be labelled as an "Eco-Product" if it has a superior environmental rating. Eco-Products are certified by the following criteria: Eco- Products must receive a minimum rating of 2 points out of total 5 points for each assessment item and a total average of 3 points or more. So far, we have developed 63 of products that are classified as "Eco-Products". We are continuing to endeavour to further increase this figure.

Chemical Substances Used in Products

We do not use any chemical substances prohibited by domestic law. Furthermore, to come into line with future European Regulations, we have started working towards the goal of abolishing other chemical substances such as hexavalent chromium, lead, mercury, cadmium, and bromine-based flame retardants (PBB and PBDE) by fiscal 2005. Additionally we are switching to lead-free solder for all our electrical circuit boards that are manufactured on our sites.

The Plan of Switching to New Refrigerant







Design For Environment Assessment System Criteria

No.	Category	Life Cycle Stage	Assessment Criteria
1	Resource reduction	Materials, Production, Distribution	Resource conservation, Compactness, Lightweight, Conformity, High yield, Standardization (include packing)
2	Product longevity	Usage	Ease of upgrade, repair and maintenance, Durability, Reliability
3	Resource recycling	Reuse, Recycle, Distribution	Select reusability materials, Conformity of materials, Use of recycled materials, Promotion of resource recycling, Labelling materials (include packing)
4	Ease of disassembly	Disassembly	Ease of disassembly and separation, Labelling of materials, Select materials
5	Ease of processing	Production, Distribution, Usage, Distribution	Crumbling, Fragmentation, Disassembly and separation, Ease of processing,
6	Environmental Safety	Materials, Production, Distribution, Usage, Disassembly, Disposal	Potential toxicity, Potential harmfulness, Explosion, Implosion, Potential hazard (include packing)
7	Energy conservation	Usage, Production	Energy conservation, Longer durability, Energy efficiency
8	Provision of information	Usage, Disassembly	Provision of information regarding treatment and product disposal



Development of Eco-products

1. Inverter-Driven Outdoor Units (Hi-Inverter IVX 15 models registered)			4. Constant Speed Type Outdoor Units for Shops (Highly Efficient Type 3 models registered)		
 <p>RAS-NP50HVR registered in 2003 as Restriction-complied product</p>	Energy Saving	COP4.85(2 horse power) (top class in our industry)	 <p>RAS-P140HGR registered in 2002 as Restriction-complied product</p>	Energy Saving	Qualification of Law on Promoting Green Purchasing Standard2.43(conventional model) 3.12(60Hz)
	Resource Saving	Top class light weight and compact design weight 69kg(conventional model) 47kg volume 0.214m ³ (conventional model) 0.142m ³		Resource Saving	Top class compact design
	Recycling-ability	Styrene foam-less packing Woody cardboard reduction for packing Use recyclable PP plastic Labelling of plastic materials		Recycling-ability	Styrene foam-less packing Woody cardboard reduction for packing Use recyclable PP plastic Labelling of plastic materials
	Environment Protection	Refrigerant reduction Styrene foam-less packing Use alternative refrigerant R410A		Environment Protection	Styrene foam-less packing Use alternative refrigerant R407
7. Spot Cooler (Floor-Mounted Type 3 models registered)			9. Electric Hot Water Heater (Full-Automatic Type, 1 model registered)		
 <p>SR-20YE1 Registered in 2002 as Restriction-complied product</p>	Energy Saving	30% reduction in power consumption (comparison with current model)	 <p>BEB-4670BFAWU registered in 2002 as Restriction-complied product</p>	Energy Saving	40% reduction in power consumption for re-heating bath (By equipping re-heating heat exchanger)
	Resource Saving	20%reduction in weight of products (top class light weight design)		Resource Saving	1200 lit/month saving as additional hot water for bath (By re-heating function)
	Recycling-ability	Recyclable ratio is 88%.		Recycling-ability	Recyclable ratio is 82%.
	Environment Protection	Styrene foam-less packing		Environment Protection	Styrene foam-less packing Hot water supply by electricity without exhausting dirty air

Eco-Products

No.	Registered Products	Num. of registered products	Note
1	Inverter-Driven Outdoor Units (Use R410A)	15 models	Hi-Inverter IVX
2	4-Way Cassette System Indoor Units	13 models	For Alternative Refrigerant
3	Hi-Inverter Series Outdoor Units (Use R407)	11 models	Hi-Inverter RZ
4	Constant Speed Type Outdoor Units for Shops	3 models	Highly Efficient Type
5	4- Way Cassette Type Indoor Units	3 models	Highly Efficient Type
6	Ceiling Type Indoor Units	3 models	Highly Efficient Type
7	Spot Cooler	3 models	Floor-mounted type
8	Electric Hot Water Heater	1 model	Semi-Automatic Type
9	Electric Hot Water Heater	1 model	Full-Automatic Type
10	Electric Hot Water Heater	1 model	Equipped inside Square Pipe
11	Electric Hot Water Heater	1 model	Round Type
12	Ice Storage Type Multi packaged Air Conditioner for Building Outdoor Units	4 models	High Peakshift Type
13	Ice Storage Type Multi packaged Air Conditioner for Building Storage Units	4 models	High Peakshift Type

Total 63 models

Eco-Factories



Our concept is to supply Eco-products to market from our Eco-factories. We focus on production activities along global movements for prevention of global warming, energy conservation and zero emissions.

Energy Conservation (Prevention of Global Warming)

To prevent further global warming, there is a 6% green house effect gases reduction target for Japan in the Kyoto Protocol. So with all our employees, we promote energy conservation following the guidelines set by our Energy Conservation Measuring Group; 1 Rationalization and efficiency in energy usage, 2 Adoption of new energy conservation system, 3 Changing manufacturing process. In FY2002, we reduced our CO₂ emissions but did not reach our target on sales-related energy usage. We positively promoting energy conservation activities and will continue trying to reduce sales-related energy usage.

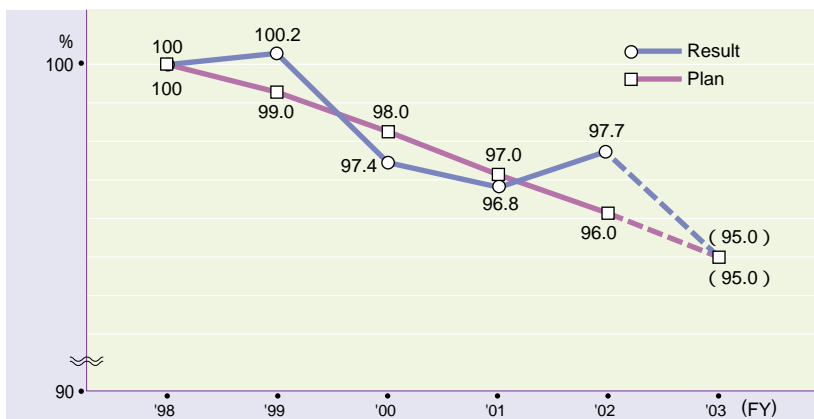
The Plan of Energy Conservation Activities

- Sales-related energy usage: based on FY1998 level - reducing 5% by FY2003
- Sales-related CO₂ emissions: based on FY1990 level - reducing 35% by FY2010

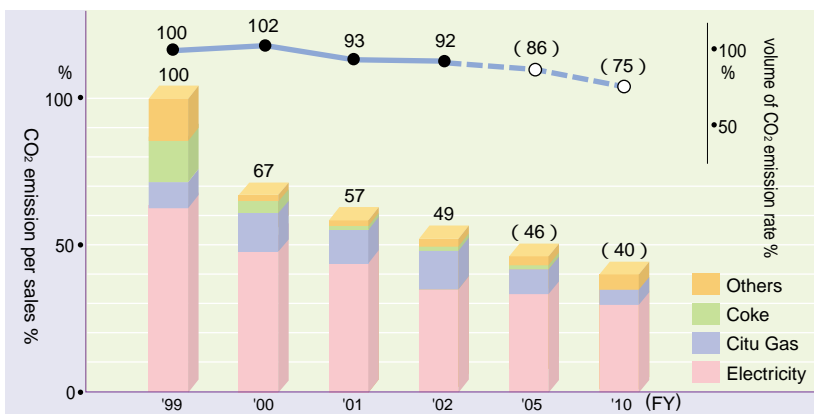
Main Energy Conservation Measures

Category	Main Energy Conservation Measures	
Transformer	Centralization of transformer	Adoption of energy conservation type of amorphous transformer
Dust Catcher Machine	Improvement of linked operation with machine facilities	
Lightning	Set up detection of human presence sensor lights	Switch to inverter lighting in the offices
Compressor	Control the number of air compressors	Prevent air from leaking
Pump	Change fan pumps to inverter	
Other	Stop unused electric for energy conservation	

Plan and Result to Reduce Sales-Related Energy Usage



Plan and Result to Reduce CO₂ Emission Plan:



Data from Shimizu



Zero Emission (PROC FY2002)

When we received ISO14001 certification, we set out our environmental policy "For reduction of industrial waste, we promote recycling and zero emission sites." All our employees promote recycling and focus upon the guidelines set by our Industrial Wastes Measuring Group. Exfoliate paper is very difficult to recycle, so previously we had to dispose of it, but in FY2002 we tried to recycle exfoliate paper as a base material for paper. We also tried to reduce waste by limiting the number of pallets that are brought onto our site. Our target for zero emission was set for FY2004, but due to our efforts, we reduced our disposal volume considerably and achieved zero emission in FY2002.

The Definition of Zero Emission in Hitachi

Final disposal rate is 1% or less of final disposal volume or Final disposal volume is less than 5 tons/year

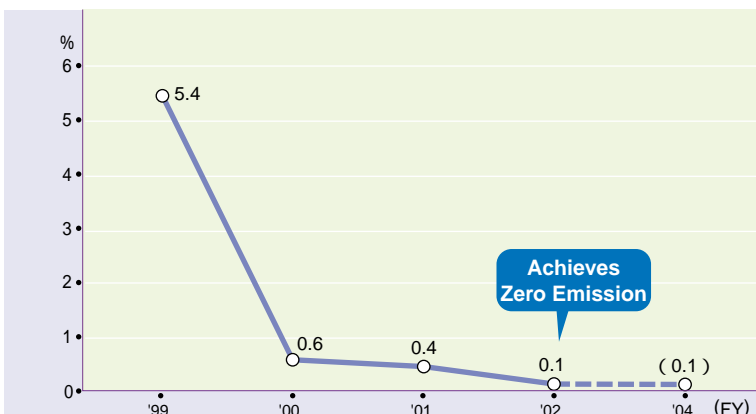
- Final disposal rate = $\frac{\text{Final disposal rate}}{\text{Volume released}}$
- Final disposal volume = $\text{Disposal without treatment} + \text{Disposal with treatment}$

Main Measures for Reduction of Industrial Wastes

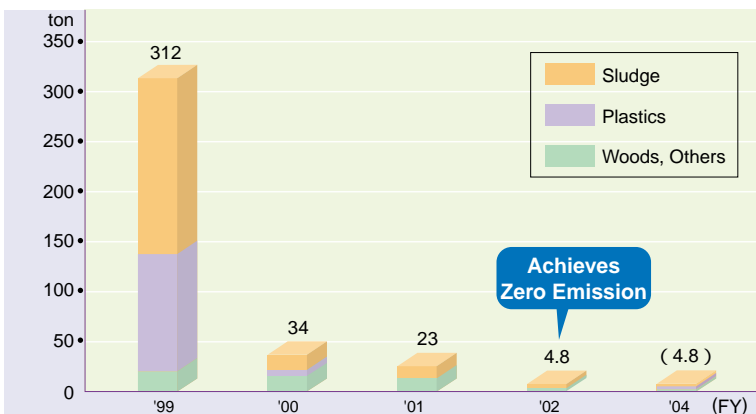
Category	Main Measures for Reduction of Industrial Wastes
Sludge	Base material for cement Base material for roadbed
Oil	Reuse as recycle oil
Plastics	Recycle material for blast furnaces As alternative fuel of Coal in cement burning Reuse as recycle oil
Paper	improvement of recyclable rate by separating disposal paper Reduce computer discharge paper Recycle of Exfoliate paper
Wood	Base material for paper and board Control of bringing pallet and recycle Thermal recycle Use as fertilizer
Glass	Base material for glass
Slag	Base material for cement

is implementation items in FY2002

Final Disposal Rate



Final Disposal Volume



Data from Shimizu



Chemical Substances Management

Hitachi's Chemical substances management system CEGNET is responsible for monitoring and also trying to reduce the use of chemical substances used in manufacturing process and that could possibly effect environment and human health.

Prohibited Substances. There are 103 Prohibited Substances by the Hitachi group

We do not use any prohibited chemical substances throughout manufacturing process.

Substances Specified for Reduction. There are 274 substances specified for reduction by the Hitachi group

We will achieve a 15% reduction by FY2003 (based on FY2000).

We will achieve a 30% reduction by FY2005 (based on FY2000).

We use 12 chemical substances specified for reduction in domestic sites.

Example: Xylene, R-22, R-134A, Toluene,

PRTR Results(Units:kg)

Data from Shimizu

		Xylene		HCFC-22	
		2001	2002	2001	2002
	Volume Handled	8,344	8,746	505,873	89,357
Discharged	For Atmosphere	8,344	8,746	22,854	2,935
	For Waterways	0	0	0	0
Transferred	As Wastes	0	0	0	0
	For outside	0	0	3,371	0
Others	Consumed as Products	0	0	477,820	83,710
	Volume Disassembly and Treated	0	0	0	2,310
	Volume Recycled	0	0	1,833	402

Data from Ibaraki

		HCFC-22		Toluene
		2001	2002	2001
	Volume Handled	6,710	5,600	5,231
Discharged	For Atmosphere	203	168	4,963
	For Waterways	0	0	0
Transferred	As Wastes	0	0	0
	For outside	67	56	268
Others	Consumed as Products	6,440	5,367	0
	Volume Disassembly and Treated	0	9	0
	Volume Recycled	0	0	0

Toluene was not covered by FY2002 notification (Under 5t)

Pollution Control Measures

In our domestic sites to reduce environmental impact we have a self imposed standard stricter than Japanese national regulations. We regularly monitor water, air, vibration and smell to promote a nature-friendly factory.

Water Pollution Prevention

There are 20 Water-related law notification facilities

Implementation of discharged water analysis every two week (twice a month)

Result of Measurement in FY2002

Data from Shimizu

	PH	COD	SS	Copper	Iron
Regulation	5.8 ~ 8.6	25	70	3.0	10.0
Self-imposed standard	6.2 ~ 8.2	15	30	0.9	2.45
Result	8.2	5.2	14.0	ND	1.29

ND...Under detection limit

Air Pollution Prevention

There are 10 Air Pollution Control Law notification facilities

Implementation of smoke analysis every 6 month (twice a year)

Result of Measurement in FY2002

Data from Shimizu

		A section	B section	C section
smoke	Regulation	0.10	0.10	Out of Adoption
	Self-imposed standard	0.01	0.05	0.15
	Result (Maximum)	ND* ¹	ND* ²	ND* ²
NO _x	Regulation	150	150	Out of Adoption
	Self-imposed standard	75	75	90
	Result (Maximum)	67	79* ³	82

ND*¹...Under detection limit (0.05) ND*²...Under detection limit (0.03)

*excess self imposed standard because of soot

Air pollution reduction measures

- Change boiler fuel from illuminating kerosene to manufactured gas
- Exclusion of energy loss by control operation of boiler

Noise Pollution Prevention

There are 322 Noise-related facilities

Implementation of noise measurement at 12 points around the border of our site every 6 months

Under self-imposed standards (regulation value is -5dB)

Vibration Control

There are 127 Vibration-related facilities

Implementation of noise measurement at 12 points around the border of our site once a year

Under self-imposed standards (under detection limit)

Smell Pollution Prevention

There are 322 Smell-related facilities

Implementation of noise measurement at 7 points around the border of our site once a year

Under self-imposed standards (under detection limit)

Stakeholder Collaboration

We give due consideration to environmental preservation of our neighbours and around our offices.

It is our policy. We promote environmental preservation activities with our stakeholders.

We hold an information exchange meeting with our neighbours ever year to allow them to understand our environmental activities. In this meeting, we explain our clean up and tree planting activities around our sites, and disclose our air and water measuring data. We also open our factory to the public to allow the local community to come and see the Hotaru (firefly) that live naturally in the streams around our sites.

Environmental Communication with the self-governing body and the consumer association



Information exchange meeting with the neighbourhood self-governing body



Explain our environmental activities for governing association of Shida, Haibara area.

Opening of our factory and introduction of our environmental activities



Hitachi Festival



Hitachi Festival



Introduction Zone of Our Environmental Activities

Continually implementation of clean up activities with our neighbors



Join in the volunteer clean-up on Miho beach with the Shimizu Environmental Preservation association



Clean up around Shimizu Works

Stock a stream with Firefly larva and raised natural



We open our factory to the community to enjoy fireflies during the night in July.

Awards

**Our environmental activities are evaluated in various ways.
We have received awards and encouragement for
endeavouring to achieve harmony with the environment.**

Awards in Hitachi Air Conditioning Systems

Systems	August,1997	Acquiring ISO certification in Taiwan Hitachi Co., Ltd.
Systems	October,1997	Acquiring ISO certification in Shimizu Works
Products	May, 1998	Technology Prize from JSRAE* ¹ (Air Conditioner for cold region)
Systems	November,1998	Acquiring ISO certification in Ibaraki Works
Products	February,1999	Nikkei Excellent Product and Service Prize (ECO-ICE mini)
Systems	May,1999	Acquiring ISO certification in Hitachi Air Conditioning Products Europe S.A.
Products	May,1999	Technology Prize from JSRAE* ¹ (All-year-around Cooling Air Conditioner)
Activities	May,1999	Prize from the Shizuoka Prefecture Governor (Proper Treatment of Industrial Waste)
Products	May,1999	Agency for Natural Resource and Energy Director General's Prize (ECO-ICE mini)
Activities	May,1999	The Shimizu City Environmental Conservation Cooperation Society Contributor
Products	May,2000	Technology Prize from JSRAE* ¹ (Inverter- Driven Scroll Type Refrigerating Machines)
Activities	May,2000	Special Prize from Shizuoka Prefecture CFC Recovering Business association
Products	June,2000	HPTCJ* ² Chairperson's Prize (Gas Absorption Type Large Temperature Difference System)
Activities	June,2000	Contribution Prize from the Shimizu City Environmental Conservation Cooperation Society
Activities	June,2000	The Shimizu City Environmental Conservation Cooperation Society Contributor
Activities	June,2000	Contributor Prize from Shizuoka Prefecture appropriate Disposal of Industrial Waste
Activities	October,2000	Recycling Promotion Council Chairperson's Prize
Products	February,2001	Chairperson's Prize from the Energy Conservation Center, Japan (Gas Absorption Type Large Temperature Difference System)
Products	May,2001	Technology Prize from SHASE* ³ (All-year-around Cooling Air Conditioner)
Activities	May,2001	The Shimizu City Environmental Conservation Cooperation Society Contributor
Products	June,2001	HPTCJ* ² Promoter Prize (the Packaged Air Conditioning for Cold Regions "System Free SAMUSASHIRAZU")
Activities	June,2001	Contributor Prize from Shizuoka Prefecture appropriate Disposal of Industrial Waste
Products	January,2002	Minister of Economy, Trade and Industry Prize (CO ₂ Heatpump hot water supply machine)
Products	June,2002	Agency for Natural Resource and Energy Director General's Prize (CO ₂ Heatpump hot water supply machine)
Products	February,2003	Japan Association of Refrigerating and Air Conditioning Facilities Chairperson's Prize (Energy saving by renewal)
Systems		
Products		
Activities		

*1 JSRAE: Japan Society of Refrigerating and Air Conditioning Engineers

*2 HPTCJ: Heat pump and Thermal Storage Technology Center of Japan

*3 SHASE: The Society of Heating, Air-Conditioning and Sanitary Engineers of Japan

Our Offices and Factories



We have established a comprehensive network with business and service bases all around Japan, capable of handling with care and attention to detail, all customer requests and problems. We also currently carry out international activities in various fields through six affiliated companies in Taiwan, China and Europe.

Company Profile

Corporate Name: Hitachi Air Conditioning Systems Co., Ltd.
Principal office: Oki Sudacho Bldg., 23-2,1-chome Kanda Suda-cho, Chiyoda-ku, Tokyo
Incorporated: November 26,1998
Capital: ¥10 billion (as of March 31,2003)
Representative: Yoshihiko Nakayama, President and Director
Number of offices and factories: Domestic offices and factories: 34
 Domestic Affiliated Companies: 8
 Overseas Affiliated Companies: 4
Main Products: Air conditioning control systems, Freezing and refrigerating control systems,Clean air systems,
 Biological control systems, Environmental test equipment, House-use cooling, heating and hot water systems
Sales: ¥90.3 billion (FY2002)
Number of Employee: 1,795 (as of March 31,2003)

Headquarter, Sales Division, Branches, Marketing Offices

Headquarter Tel:81-3-3255-7201
 23-2,1-chome, Kanda Suda-cho, Chiyoda-ku, Tokyo 101-0041

Hokkaido Branch Office Tel:81-11-231-5301
 4-1, Kita-nijo-nishi, Chuo-ku, Sapporo 060-0002

Tohoku Branch Office Tel:81-22-266-1321
 9-7, Futsukamachi, Aoba-ku, Sendai 980-0802

Fukushima Marketing Branch Tel:81-24-921-5550
 5-15 Midori-cho, Koriyama 963-8023

Tokyo Sales Division Tel:81-3-3255-7179
 23-2,1-chome, Kanda Suda-cho, Chiyoda-ku, Tokyo 101-0041

Tokyo Facilities Sales Division Tel:81-3-3255-7231
 23-2,1-chome, Kanda Suda-cho, Chiyoda-ku, Tokyo 101-0041

Yokohama Marketing Branch Tel:81-45-337-6422
 105-1, Okazawa-cho, Hodogaya-ku, Yokohama 240-0062

Hokuriku Branch Office Tel:81-76-429-4051
 627-3, Kurosaki, Toyama 939-8214

Chubu Branch Office Tel:81-52-251-0371
 13-20, 3-chome, Sakae, Naka-ku, Nagoya 460-0008

Kansai Branch Office Tel:81-6-6531-9111
 10-10, 1-chome, Nishihonmachi, Nishi-ku, Osaka 550-0005

Chugoku Branch Office Tel:81-82-240-6151
 3-2-31, Ootemachi, Naka-ku, Hiroshima 730-0051

Shikoku Branch Office Tel:81-87-833-8701
 1-5, 1-chome, Hanazono-cho, Takamatsu 760-0072

Kyushu Branch Office Tel:81-92-561-4851
 9-17, 4-chome, Shimizu, Minami-ku, Fukuoka 815-0031

Factories

Shimizu Works Tel:81-543-34-2081
 390 Shimizu Muramatsu, Shizuoka 424-0926

Ibaraki Works Tel:81-72-622-5122
 5-11, 4-chome, Higashiota, Ibaraki-shi, Osaka 457-0012

Affiliated Companies

Tokyo Hitachi Air Conditioning and Refrigeration Co., Ltd.
 Osaka Hitachi Air Conditioning and Refrigeration Co., Ltd.
 Kyushu Hitachi Air Conditioning and Refrigeration Co., Ltd.
 Kitakanto Hitachi Air Conditioning and Refrigeration Co., Ltd.
 Niigata Hitachi Co., Ltd.
 Reinetzu Engineering Co., Ltd.
 Hitachi Air Conditioning SE Co., Ltd.
 Hitachi Shimizu Technology Co., Ltd.

Tsukuba Business Institute

Training Center

Tokyo Training Center
 Kansai Training Center
 Kyushu Training Center

Service Engineering Center

Hokkaido Service Engineering Center
 Tel:81-11-611-5146

Tohoku Service Engineering Center
 Tel:81-22-225-5972

Fukushima Service Engineering Center
 Tel:81-24-921-5553

Tokyo Service Engineering Center
 Tel:81-3-3649-3811

Nishitokyo Service Engineering Center
 Tel:81-42-328-3611

Yokohama Service Engineering Center
 Tel:81-45-337-6400

Saitama Service Engineering Center
 Tel:81-48-652-9767

Koyama Service Center
 Tel:81-285-31-6571

Jousou Service Engineering Center
 Tel:81-4-7167-4330

Numazu Service Center
 Tel:81-559-29-7676

Hokuriku Service Engineering Center
 Tel:81-76-429-6861

Chubu Service Engineering Center
 Tel:81-568-72-0131

Toyohashi Service Center
 Tel:81-532-33-5668

Kansai Service Center
 Tel:81-6-6303-6159

Kyoto Service Engineering Center
 Tel:81-75-315-4115

Hyogo Service Engineering Center
 Tel:81-78-575-8431

Chugoku Service Engineering Center
 Tel:81-82-283-9374

Yamaguchi Service Center
 Tel:81-836-84-0964

Shikoku Service Engineering Center
 Tel:81-87-833-8701

Kyushu Service Engineering Center
 Tel:81-92-561-4854

Our Network is capable of responding to worldwide needs.

Taiwan Hitachi Co.,Ltd.
Hitachi Air-conditioning & Refrigerating Product (Guangzhou) Co.,Ltd.
Hitachi Air Conditioning Products Europe S.A.
Hitachi Air Conditioning Products Brazil S.A.

Determinations as a Global Citizen



Our environmental activities are being carried out world wide. Here is a selection of comments from some employees of Hitachi Air Conditioning Systems group.

Shimizu Works

Toshio Maezawa

We continue our efforts to achieve the lowest emissions of refrigeration during testing.

Shimizu Works

Yoshihisa Satsukawa

For global environmental preservation, we try to achieve the lowest emissions of freon gas into the air.

Shimizu Works

Fumitoshi Katou

We promote environmental preservation to allow the next generation to enjoy the beautiful natural areas of Japan, such as Mt Fuji.

Ibaraki Works

Kiyohito Sawai

For resource conservation, we promote recycling and waste reduction.

Tokyo Service Center

Naoki Kubo

We try to get the latest technology for environmental preservation and always provide nature-friendly services.

Kansai Branch Office

Morio Kobata

We Hitachi Air Conditioning Systems promote global environmental preservation under the themes of harmony with people and nature.

Chubu Branch Office

Takashi Ogino

We are always conscious of the environment even with our small and everyday activities.

Kyushu Branch Office

Shinya Okabe

We recommend and sell Eco-products. We create the future and spread the dreams of people and companies.

Hitachi Air Conditioning Products Europe S.A.

Oscar Meca Rabadan

Through the environmental education for all our employees, all our employees try to be environmental engineers.

Hitachi Air Conditioning Products Brazil S.A.

Carlos Henrique Soares

We work to give top priority to environmental preservation by clean and efficient manufacturing processes.

Hitachi Air-conditioning & Refrigerating Products (Guangzhou) Co., Ltd.

Liu Shi Ling

We provide nature-friendly air conditioner systems, try to keep the earth beautiful and preserve natural resources and ecological balance.

Taiwan Hitachi Co., Ltd.

Lai Feng Hsiang

Water originates from forests. We are planning at least ten trees every year to ensure that this beautiful natural environment of ours is passed onto our descendants.

contact

Hitachi Air Conditioning Systems Co., Ltd

390 Shimizu Muramatsu, Shizuoka 424-0926

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FAX 81-543-34-4287