

# 2005

---

## Environmental & Social Report



# Contents

- Top Messages ..... 3
- Corporate Overview ..... 5
- Corporate Philosophy and CSR ..... 7

## Environmental Report

- Environmental Management** ..... 10
  - Environmental Policy ..... 10
  - Corporate Activities and Environmental Impacts ..... 10
  - New Voluntary Plan for the Environment ..... 11
  - Organization ..... 11
  - Environmental Management System ..... 11
  - Environmental Audits ..... 12
  - Company-wide Unified Auditing ..... 12
  - Environmental Education ..... 14
  - Environmental Accounting ..... 15
  - Overall Achievements under the Fiscal 2004 and Fiscal 2005 Plans ..... 17
    - 【Reference】FHI Environmental Conservation Program ..... 19
  - Environmental Incidents ..... 21
  - Environmental Communication ..... 21
- Development Phase/Products** ..... 22
  - Automotive Business Unit**
    - Fuel Economy ..... 22
    - Exhaust Emissions ..... 23
      - 【Reference】Fiscal 2010 Fuel Economy Standards and Exhaust Emission Regulation Values ..... 25
    - Clean Energy Vehicles ..... 26
      - Joint Development of Energy-Saving Gasoline Engines by Industry, Academia, and Government ..... 26
    - Noise ..... 27

- LCA Activities ..... 27
- Aerospace, Industrial Products,  
Eco Technologies Companies, and Clean Enterprise
  - Aerospace Company ..... 28
  - Industrial Products Company ..... 29
  - Eco Technologies Company ..... 30
  - Clean Enterprise ..... 31

- Production** ..... 32
  - Reduction of Waste Materials ..... 32
  - Reducing Water Consumption ..... 33
  - Prevention of Global Warming (Energy Saving) ..... 34
  - Management of Chemical Substances (the PRTR Law) ..... 34
  - Reducing Substances with Environmental Impact ..... 35
  - Green Procurement ..... 35
    - 【Topics】Utsunomiya Manufacturing Division's Cogeneration System ..... 36

- Recycling** ..... 37
  - FHI's Fundamental Philosophy ..... 37
  - Law on Recycling End-of-Life Vehicles ..... 37
  - Design ..... 39
  - Production ..... 40
  - Sales and Services ..... 41
  - Disposal ..... 41

- Logistics** ..... 44
  - Reducing the Environmental Burden of the Transportation of Completed Automobiles ..... 44
  - Reducing the Environmental Burden of the Transportation of Service Parts ..... 44
  - Reducing Packaging Materials for Overseas Knockdown Parts ..... 44

## TOPICS 2004

### Activities in Affiliated Companies—overseas- (p.50)



SCI (Subaru Canada, Inc., a Subaru sales base in Canada) and SOA (Subaru of America, Inc., a U.S. Subaru sales base) each strove to establish an environmental management system. These efforts led to their acquisition of ISO 14001 certification in January and February of 2005, respectively.

### Production Stage (p.36)



The Utsunomiya Manufacturing Division (Eco Technologies Company and Aerospace Company) started to operate the 6000 kW class natural gas engine cogeneration system in February 2005 to further promote our endeavors toward prevention of global warming.

### Development Phase/Products (p. 22)



In January 2005, FHI launched the new Subaru R1 mini car, in which the best environmental performance in the class (24 km/L) and excellent running performance were simultaneously realized. The Subaru R1 achieved exhaust emissions 50% less than required by the 2005 standards and 5% above the 2010 fuel economy standards of the Ministry of Land, Infrastructure and Transport.

### Social Involvement (p. 65)



On July 6, we convened the Subaru Environmental Exchange Meeting as a part of the class for fifth grade students from Ohta City Niragawa Nishi Elementary School. The meeting included a film screening, experiment, and quiz, which were very popular with the students.

<b>Activities of Affiliated Companies</b> .....	45
<b>Domestic Companies</b>	
Domestic Affiliated Company Subcommittee .....	45
All Subcommittee members certified to ISO 14001 .....	45
Actual Achievements of the Six Domestic Affiliated Companies in Fiscal 2004 .....	46
<b>Overseas Companies</b>	
Overview of Activities in the Five North American Companies .....	47
Environmental Accounting of North American Companies .....	48
Environmental Activities in Individual Companies .....	48
Social Contribution Activities .....	49
Commendations .....	49
【Topics】Subaru Sales Base Obtained ISO 14001 Certification .....	50
【Topics】SIA Activities Targeting Resource Circulation .....	51

## Social Report

<b>Compliance</b> .....	53
Fundamental Philosophy .....	53
System and Administration .....	53
Fiscal 2004 Results of Compliance Activities .....	54
<b>Relationship with Customers</b> .....	55
Creating Safe Automobiles .....	55
Making User-Friendly Automobiles .....	56
For Customer Satisfaction .....	57
<b>Relationship with Employees</b> .....	59
Employment .....	59
Development of Human Resources .....	60
Benefits Package .....	60

Health and Safety .....	60
<b>Social Involvement</b> .....	62
Social Contributions .....	62
Regional Activities .....	64
Cooperation/Donation/Support to Special Events .....	64
Awards .....	65
Environmental Education .....	65

## Data

<b>Plant Site Data</b> .....	66
Gunma Manufacturing Division .....	66
Utsunomiya Manufacturing Division .....	68
Industrial Products Company .....	69
Tokyo Office .....	69
<b>Product Data</b> .....	70
Automobiles .....	70
General-Purpose Engine .....	71
<b>Other Data</b> .....	71
<b>Chronology of FHI's Environmental Efforts</b> .....	72

- ◆ In this 2005 Environmental & Social Report, the following items have been added to the existing contents of the 2004 report:
  1. For sustainable development, corporate activities for social responsibility (CSR) are increasingly required. We summarized our approach to CSR activities.
  2. We summarized major topics in fiscal 2004 in the contents page.

## Introduction

### ◆ About This Environmental & Social Report

#### ● Range of the report

This report mainly contains the achievements of environmental conservation and social activities (compliance, relationship with customers, relationship with employees, social involvement, etc.) carried out in fiscal 2004 (April 2004 through March 2005). Achievements in early fiscal 2005 are also included for informational purposes.

This report mainly covers the activities of FHI's business operations in Japan. To introduce its group activities, the performances of six domestic consolidated manufacturing and logistics companies, which are considered to have greater environmental impacts, are also mentioned. Activities of the North American Environment Committee, which are composed

of five affiliated companies in North America, are also noted.

#### ● Guidelines referenced

- "Environmental Report Guidelines (2000 and 2003)" by the Ministry of the Environment
- "Environmental Accounting Guidelines (2000, 2002 and 2005)" by the Ministry of the Environment

#### ● Next Issue

- Our previous Environmental Report was issued in June 2004. The next report will be published in the summer of 2006.

# Top Message

## A Company with a Strong, Appealing Presence



Thank you very much for your interest in the Fuji Heavy Industries (FHI) Environmental and Social Report. Recently, CSR (corporate social responsibility) has become as widespread among the general public as it has in the business community. Acknowledging that CSR is fundamental to our business activities, Fuji Heavy Industries (Subaru) believes that it is our mission to benefit society as a good corporate citizen by actively working to improve the health of the environment, ensure compliance, and contribute to society.

We developed CSR Policies in order to organize the current activities and approaches in each segment and to point our corporate vector in the right direction for the achievement of greater performance. Based on the CSR Policies, we will ensure that each activity responds to the expectations of society, with the goal of becoming *a company with a strong, appealing presence*. To address environmental issues, we set our management goal to *become an eco-friendly, excellent company*. Based on the idea of offering our customers clean products from a system of environmentally clean factories, logistics networks, and distributors, we have been strenuously working to conserve the global environment by developing a new voluntary plan for the environment called the FHI Environmental Conservation Program (Fiscal 2002-2006). We have achieved outstanding results to date, particularly in waste reduction and energy conservation in the production stage.

Since the Kyoto Protocol became effective this February, further reduction of CO<sub>2</sub> is required in industry, transportation, and consumer goods. As a result of our voluntary plan for the environment, we have reduced CO<sub>2</sub> levels even more than we planned by promoting energy conservation at the plants and by introducing a natural gas cogeneration system. We will continue efforts to meet the demands from the government for further reductions. Regarding our main product—the automobile—, we are working to reduce CO<sub>2</sub> emissions by improving fuel economy through weight reduction technologies. For products other than automobiles, we are working to reduce CO<sub>2</sub> emissions by using fuel-efficient general-purpose engines and wind turbine generator systems.

In January 2005, the Law on Recycling End-of-Life Vehicles came into force. We are not only promoting the recycling of resources in accordance with the law but are also developing products that are easier to recycle.

To make all these environmental activities more effective, we are advancing the establishment of an environmental management system (ISO 14001). All our business sites, including the head office and domestic and overseas affiliated manufacturing plants, have already obtained ISO 14001 certification. Thus, we are promoting the establishment of the same system for both domestic and overseas Subaru dealerships.

In conclusion, with the belief that each activity covered in this report is indispensable for the creation of a sustainable society and for the future of FHI itself, we fully intend to live up to everyone's expectations.

A handwritten signature in black ink that reads "K. Takenaka." The signature is written in a cursive, flowing style.

**Kyoji Takenaka**  
President and CEO



## Our Efforts to Address Environmental Problems

Businesses are responsible for responding to the needs of customers through direct business activities, not only by providing products and services, but also through a wide range of business activities, including compliance with laws and regulations, environmental preservation, protection of human rights, and protection of consumers. We have continually worked to fulfill such social responsibilities and to contribute to the creation of business values. We acknowledge that environmental efforts in particular are issues of great significance, as we can make contributions to the sound development of society by working toward the preservation of the global environment.

## Looking Back on the Activities of FY 2004

Further progress was made in building establishing the EMS\*<sup>1</sup> when our affiliated companies, including Subaru dealerships and domestic and overseas group companies, obtained ISO 14001 certification as a result of promoting the extension of certification to other business sites. In the area of products, we released a new mini car, the Subaru R1, which is characterized by superb driving performance and outstanding fuel economy. Moreover, in the production phase, each business site in our group implemented countermeasures against global warming, such as the introduction of a natural gas cogeneration system in the Utsunomiya Manufacturing Division. Thus, CO<sub>2</sub> emissions from business sites decreased by approximately 1.7% compared to last year.

As chairman of the Corporate Environment Committee,\*<sup>2</sup> I visited each business site and specialized committee in February and March in accordance with the Environmental Performance Assessment System,\*<sup>3</sup> which is a system we developed to check on the environmental activities of each division. As a result of hearings on their current environmental activities, I confirmed that overall environmental activities are making good progress. However, we will make further efforts toward continuous improvement, since in some areas there seemed to be room for improvement to reach our goals.

## Keeping All Stages Clean

The Law on Recycling End-of-Life Vehicles came into force in January, and the Kyoto Protocol came into effect in February. Our responsibility as a manufacturer is increasing. We will continue to focus our efforts on developing products that remain environmentally friendly throughout their lifecycles, including the development of products that are easier to recycle, improvement of fuel economy and emission performance, and reduction of substances with an environmental impact. Also in the production stage, we will further accelerate our efforts toward energy conservation, reduction of CO<sub>2</sub> emissions, and waste reduction. We will continue to work on the reduction of environmental burden in every stage from procurement through suppliers, shipment of products, sales and services, to disposal (recycling) of used products. We will promote these activities as the Fuji Heavy Industries Group, including domestic and overseas affiliates.

As businesses are expected to actively practice social responsibility, this Environmental and Social Report contains coverage about the societal impact. We would appreciate your feedback to help us improve our reports in the future.

Senior Executive Vice President  
(Responsible for the environment)

- \* 1 EMS:Environmental Management System
- \* 2 See page 11 for information on the Corporate Environment Committee
- \* 3 See page 13 for information on the Environment Performance Assessment System

## ◆ Subaru Environment Logo



In June 2005, we created the Subaru Groups environment logo. The environment logo has a leaf at the center, with green earth and blue sky to represent the globe. Into this logo, we incorporated our determination to actively work on *providing products that are friendly to the earth, society, and people*, which is stated in the FHI Environment Policy.

Subaru Group recognizes the integral relationship between the environment and its business activities, and strives to provide products that are friendly to the earth, society, and people. Subaru Group is protecting the environment to ensure our future.

# Corporate Overview

<b>Name</b>	Fuji Heavy Industries Ltd.
<b>Established</b>	July 15, 1953
<b>Paid-in capital</b>	153.7 billion yen (as of March 31, 2005)
<b>Employees</b>	(Consolidated) 26,989 (as of March 31, 2005) (Non-consolidated) 13,983 (as of March 31, 2005)
<b>Head Office</b>	7-2 Nishi-shinjuku 1-chome, Shinjuku-ku, Tokyo 160-8316 Japan TEL: 03-3347 for every division (dial information 03-3347-2111)
<b>Sales</b>	(Consolidated) 1446.5 billion yen (for the fiscal year ended March 31, 2005) (Non-consolidated) 949.5 billion yen (for the fiscal year ended March 31, 2005)

## Principal manufacturing locations and products

Gunma Manufacturing Division (Ohta City, Isesaki City, and others, Gunma Prefecture, etc.)

Legacy, Impreza, Forester, R1, R2, Pleo, Sambar

Utsunomiya Manufacturing Division (Utsunomiya City, Tochigi Prefecture)

Aircraft, aerospace-related machinery components, environmental equipment

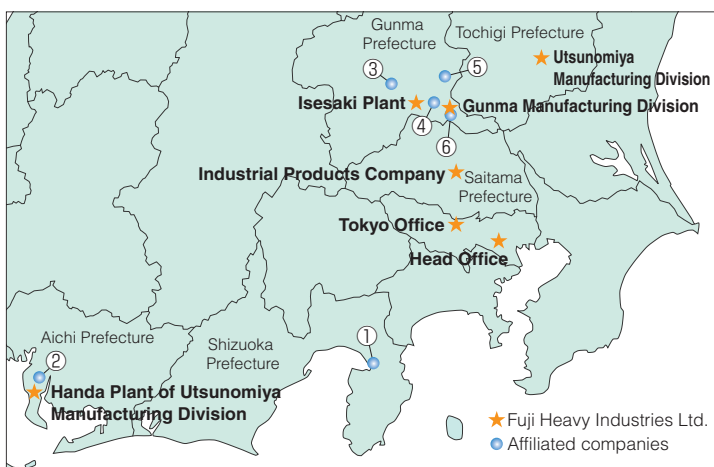
Industrial Products Company (Kitamoto City, Saitama Prefecture)

Robin-engines, engine electrical generators, pumps

## Locations

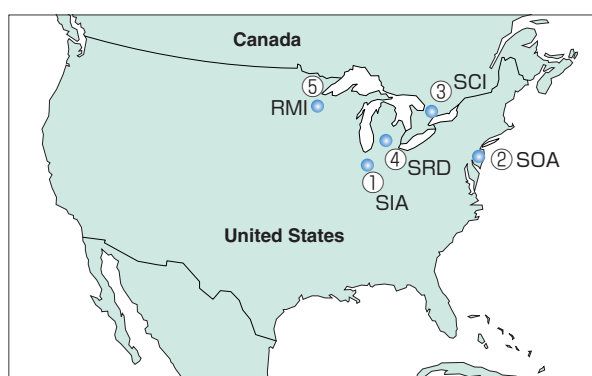
Note: Locations of major facilities of Fuji Heavy Industries Ltd. and affiliated companies mentioned in this report are shown below.

### Japan



Company name	Location	Business
① Fuji Robin Industries Ltd.	Numazu City, Shizuoka Prefecture	Manufacture, service, and sales of agricultural/forestry equipment, engines, and fire pumps
② Yusoki Kogyo K.K.	Handa City, Aichi Prefecture	Manufacture and sales of aerospace-related machinery components and crane trucks, etc.
③ Fuji Machinery Co., Ltd.	Maebashi City, Gunma Prefecture	Manufacture and sales of car parts, industrial machinery, and agricultural transmissions
④ Ichitan Co., Ltd.	Ota City, Gunma Prefecture	Manufacture and sales of forged parts for automobiles and industrial machinery
⑤ Kiryu Industrial Co., Ltd.	Kiryu City, Gunma Prefecture	Manufacture of specially equipped Subaru automobiles and logistics control of Subaru automobile parts
⑥ Subaru Logistics Co., Ltd.	Ohta City, Gunma Prefecture	Logistics and logistics-related operation of Subaru automobiles, parts, and supplies

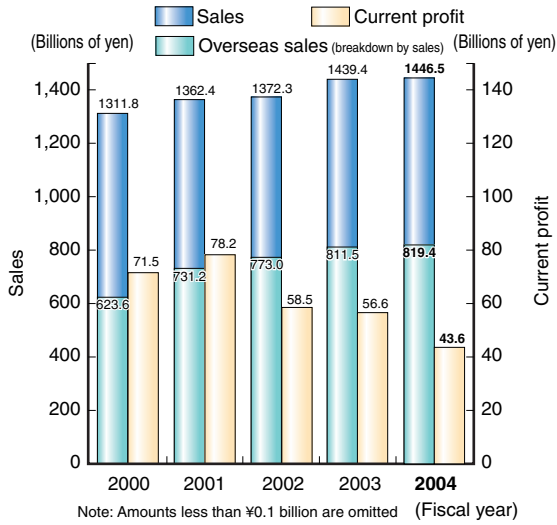
### North America



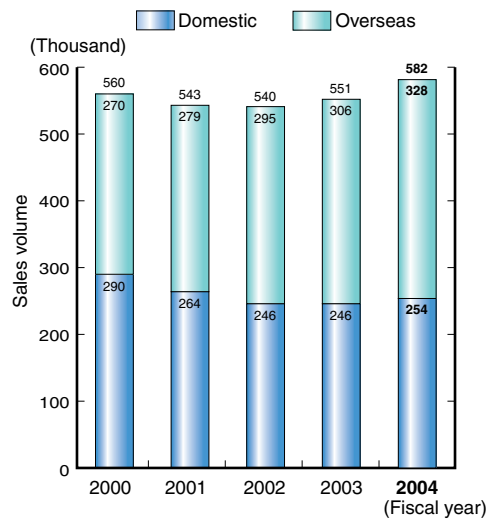
Company name	Location	Business
① SIA * 1	Lafayette, Indiana	Production base for Subaru in the U.S.A.
② SOA * 2	Cherry Hill, New Jersey	Distribution base for Subaru in the U.S.A.
③ SCI * 3	Mississauga, Ontario	Distribution base for Subaru in Canada
④ SRD * 4	Ann Arbor, Michigan	Research and development base for automobiles in the U.S.A.
⑤ RMI * 5	Hudson, Wisconsin	Production base for general-purpose engines in the U.S.A.

# Economic Indicators

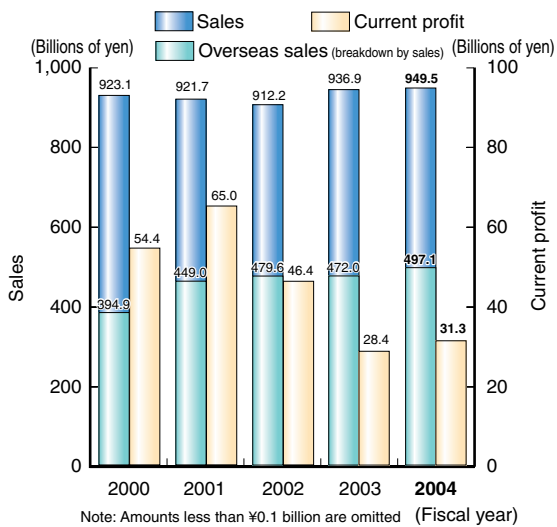
## Trends in sales and current profit (consolidated)



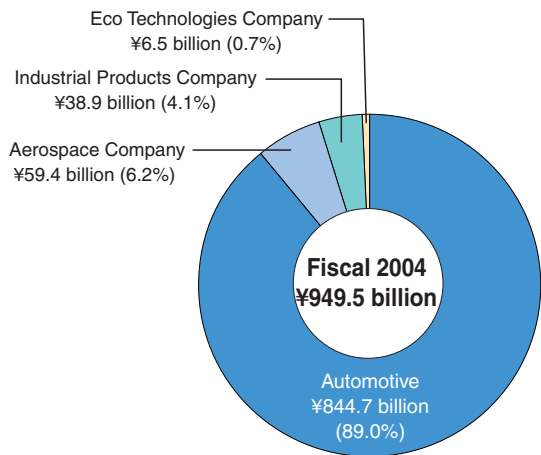
## Trends in sales volume (consolidated)



## Trends in sales and current profit (non-consolidated)

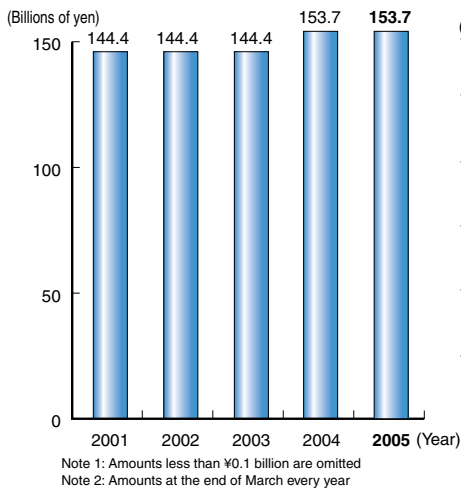


## Net sales breakdown by division (non-consolidated)

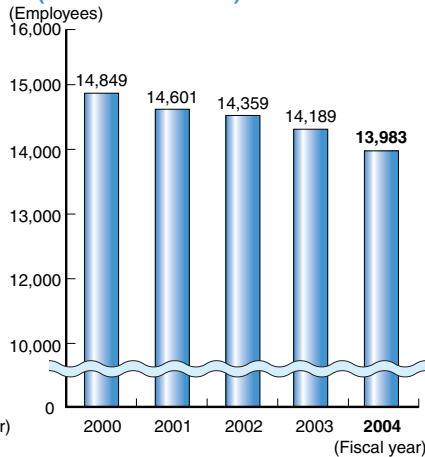


Note: Figures are rounded off to the nearest ¥0.1 billion

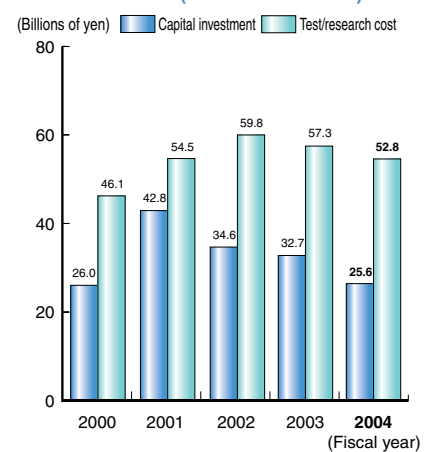
## Trends in paid-in capital



## Trends in the number of employees (non-consolidated)



## Trends in capital investment and test/research cost (non-consolidated)



# Corporate philosophy

## Corporate philosophy

The manufacturing principles of Fuji Heavy Industries Ltd. are built on the tradition of aircraft manufacture established by Nakajima Aircraft, the predecessor of FHI. The DNA of our company consists of *pursuit of the best performance*, the fundamental concepts for designing aircraft, *a concentrated, lean package* to materialize it, and *thorough implementation of safe operations under all environments*. While maintaining an emphasis on these principles, we will strive to develop new values and actively work on environmental problems and compliance issues while treasuring our tradition, so that FHI will be able to provide customers and other stakeholders with more satisfaction and reliance, and subsequently coexist in harmony with society.

- 1. We will strive to create advanced technology on an ongoing basis and provide consumers with distinctive products with the highest level of quality and customers satisfaction.***
- 2. We will aim to continuously promote harmony between people, society, and the environment while contributing to the prosperity of society.***
- 3. We will look to the future with a global perspective and aim to foster a vibrant, progressive company.***

## We Aim to Become What We Want to Be

We have been striving to move into our ideal picture of a *company with a strong, appealing presence* and develop new values. To achieve the goals, FHI reviewed the two-year plan from fiscal 2005 of the mid-term management plan, Fuji Dynamic Revolution 1, formulated the Revision FDR-1, and started new approaches. In accordance with Revision FDR-1, we aim to *evolve strategies for Subaru's unique premium brand* in order to increase profitability and, at the same time, strive to provide all customers with *pleasure and*

*a sense of security when driving any car* by integrating a higher level of Safety and Environment into Driving. It is our dream and desire to establish a Subaru brand loved and supported by customers all around the world and become a model company where employees work with pride. With these in mind, we will carry our activities forward steadily and make the most of our premium values in every business area, including automobiles, as a company which continues to evolve for the future.

## Corporate Code of Conduct

FHI set down a corporate code of conduct to comply with laws and regulations and to fulfill its social responsibilities, based on our corporate philosophy. We will continue to strive to become a company loved by all and contribute to making society more affluent by respecting individuals and the corporate code of conduct and acting on the same sense of values.

- 1. We will develop and provide creative products and services while paying sufficient attention to the environment and safety.***
- 2. We will respect the rights and characteristics of individuals.***
- 3. We will promote harmony with society and contribute to the prosperity of society.***
- 4. We will meet social norms and act honestly and fairly.***
- 5. We will maintain global perspective and aim to be in harmony with international society.***



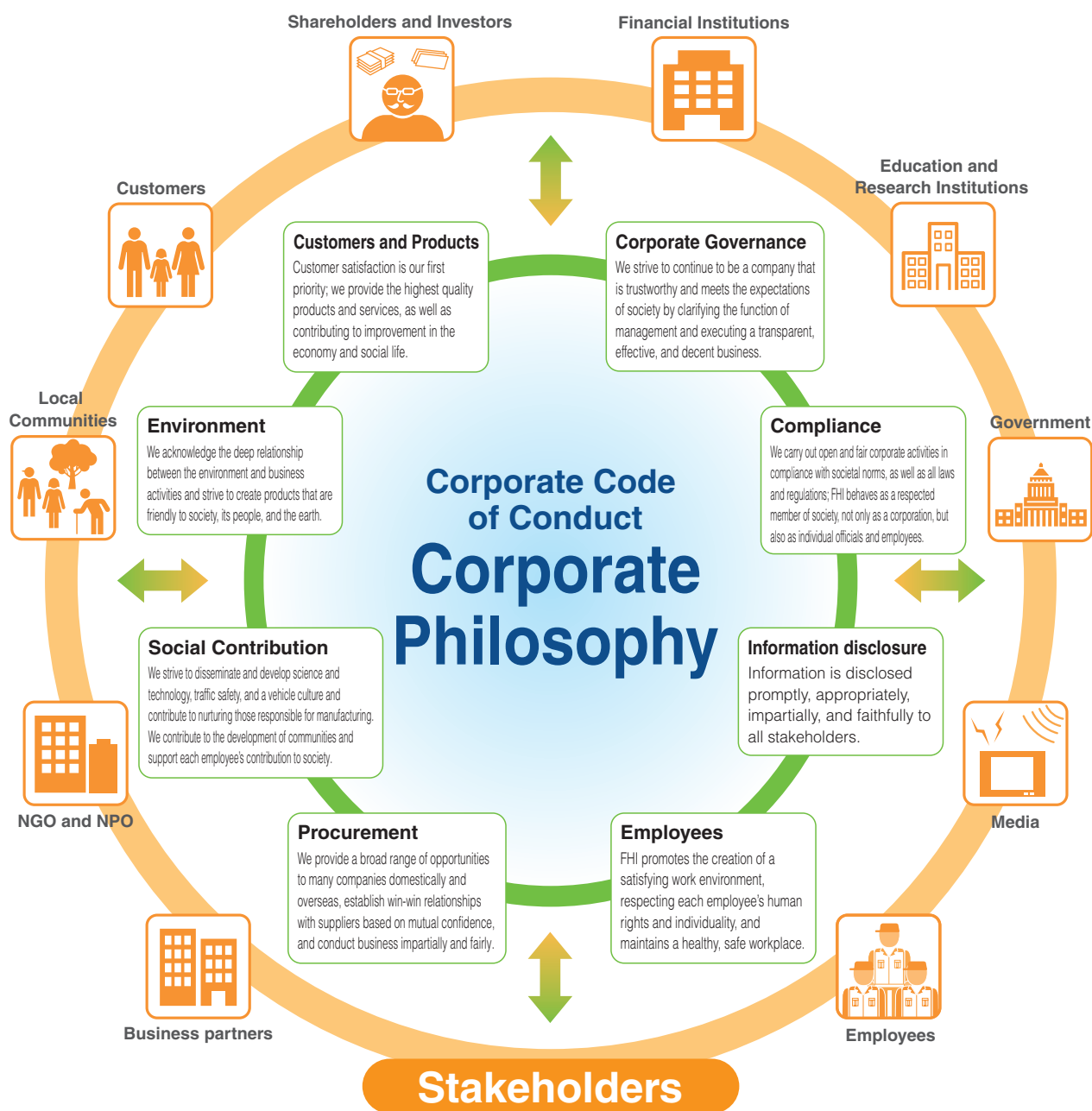
# CSR (Corporate Social Responsibility)

## FHI's philosophy concerning CSR

CSR is a corporate responsibility for promoting their business activities as members of society. FHI believes that the Corporate Philosophy is the CSR Policy, or in other words, acknowledging that CSR is a reflection of our corporate philosophy and fundamental to our business activities.

## CSR Activities

FHI has been actively working on a variety of issues, including corporate governance, environment, and compliance as its contribution to society.





# Environmental Report

Current global environmental issues have diversified while increasing in significance year by year, particularly in global warming, wastes and recycling, and chemicals. Perceiving the environmental impacts produced through its business activities, FHI has been actively tackling prevention of global warming, conservation of resources and recycling, and chemical-related management. Toward a prosperous future where the global environment will be preserved and sustainable development will be actualized, FHI will continue doing its best to conserve the global environment. FHI aims to become *an eco-friendly, excellent company* that is respected and supported by customers throughout the world, as well as by the local communities.

# Environmental Management

FHI started the Environmental Action Project in 1990 and has since taken advanced measures to protect the environment. Currently, we are working harder toward achievement of the goals specified in the FHI Environmental Conservation Program (Fiscal 2002–2006) (New Voluntary Plan for the Environment formulated and released in May 2002). In addition to developing the activities for our domestic and overseas affiliated companies, FHI is trying to reduce the environmental burden as one group.

## Environmental Policy

FHI believes that responding to the problems of the global environment is one of the important tasks of management. Based on its corporate philosophy, FHI has established an Environmental Policy, a policy for carrying out environmental conservation. FHI has also established guidelines for specific actions—the Operating Criteria for Environmental Conservation—in order to promote the Policy. Involving all of the employees, FHI is moving its activities forward.

### Environmental Policy (Established in April 1998)

FHI recognizes the integral relationship between the environment and its business activities and strives to provide products that are friendly to the earth, society, and people. FHI is protecting the environment to ensure our future.

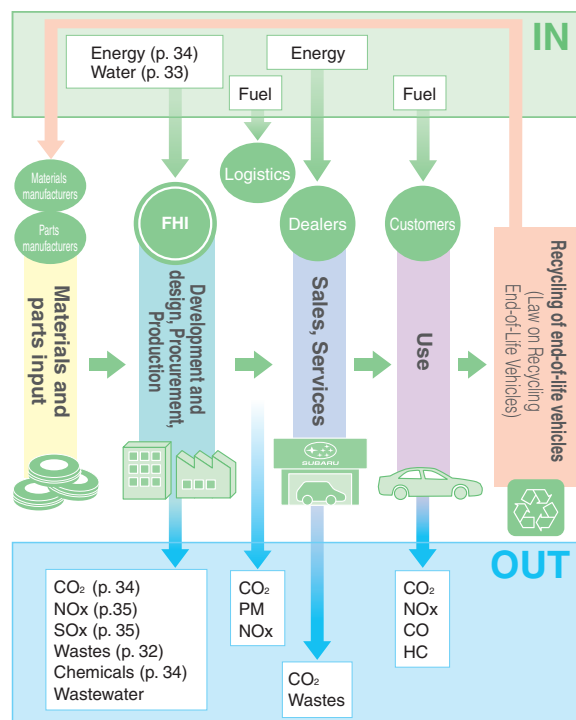
### Operating Criteria for Environmental Conservation

- 1) FHI is committed to environmental conservation and gives consideration to environmental impacts at every step of product development, design, manufacture, sales, service, and disposal.
- 2) FHI observes relevant laws regulations and agreements with communities and industries, while also promoting voluntary activities in accordance with its own environmental objectives and targets as determined by the Company.
- 3) FHI recognizes the importance of continual improvement and efforts to prevent pollution and encourages every employee to act with self-awareness and responsibility.
- 4) FHI endeavors to raise environmental consciousness by providing educational opportunities for its employees according to their job status and job description.
- 5) FHI regularly performs audits and inspections to improve its environmental conservation activities.
- 6) FHI is committed to interacting within the community and engaging in joint activities to further environmental conservation.

## Corporate Activities and Environmental Impacts

FHI is a transportation manufacturer focusing on automobiles. Automobiles, which are a convenient and comfortable form of transportation, are now indispensable for living in a modern society. On the other hand, however, automobiles require limited global resources as materials and fuels. Consequently, they emit CO<sub>2</sub>, which causes global warming, as well as carbon monoxide (CO), hydrocarbons (HC), and nitrogen oxides (NO<sub>x</sub>) that pollute the air. We believe that automobiles make life more pleasant and reflect an affluent society but fully understand that automobiles have such disadvantages, as well as advantages. With these in mind, we must work hard for a better future. FHI accepts the task of conserving both the global environment and the benefits of automobiles by considering the environmental impacts and reducing the environmental burden through the lifecycle of development, production, use, disposal, and recycling of automobiles.

### Overall Environmental Burden Concerning FHI



\*The numbers in parentheses are reference pages in this report regarding usage or discharge.

## New Voluntary Plan for the Environment

Under the new voluntary plan for the environment, FHI Environmental Conservation Program (Fiscal 2002–2006) (see p. 19–20), we consider living with society and realizing sustainable development, while improving the environment, as the ideal for FHI, which aims to become a company with a strong, appealing presence. Our goals are to offer our customers clean products from a system of environmentally clean factories, logistics networks, and dealers, in order to contribute to society with our products and to make all the stages clean.

Achievements of the items for which goals were set in fiscal 2004 are indicated in the table below.

### Goals and Achievements in Fiscal 2004

Item	Goals	Achievements	Evaluation	Page in this report
(Clean factories) Green procurement activities	[Automobile Business Unit] Establish EMS at 95% or more of the suppliers	96%	○	p.35

## Organization

FHI sets the Corporate Environment Committee, which is chaired by the senior executive vice president and operated by representatives from all of the offices as the core of its environmental conservation activities. The organization determines policies and plans, ascertains results and achievements, and is actively involved in a variety of activities to reduce the environmental burden. The Corporate Environment Committee is composed of specialized committees, the Environment Committees for individual Companies, and the North American Environment Committee. Specialized committees have the necessary subcommittees for promotion of practical activities.



## Environmental Management System

FHI acquired ISO 14001 certification in all of its main businesses. In fiscal 2004, the applicability of the certification was expanded to the Subaru Parts Distribution Center (Ohta City) and the Subaru Parts & Accessories Div. (Saitama City). Overseas FHI-affiliated companies, Subaru of America, Inc. (SOA), and Subaru Canada, Inc. (SCI), acquired ISO 14001 certification (see p. 50 for reference). Domestic Subaru dealers, Aomori Subaru Co., Ltd., and Fuji Subaru Co., Ltd., also acquired certification. Including Chiba Subaru, Inc., and Iwate Subaru, Inc., four dealers have now acquired the certification on the Subaru team. FHI will further promote establishment of the EMS.

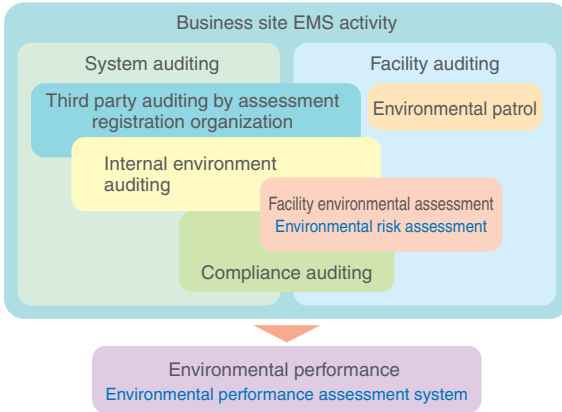
### Acquired ISO 14001 Certification

Business site	Certification date
Gunma Manufacturing Division	Main Plant
	Yajima Plant
	Ohta North Plant
	Oizumi Plant
	Subaru Test & Development Center
	Isesaki Plant
Subaru Parts Distribution Center	March 24, 1999
Industrial Products Company	May 21, 1999
Utsunomiya Manufacturing Division (Aerospace Company)	Main Plant
Eco Technologies Company)	South Plant
Head Office	South No. 2 Plant
	Handa Plant
Head Office	Shinjuku Business Site
	Ohmiya Business Site
Tokyo Office	January 19, 2004
	January 29, 2004

## Environmental Audits

FHI implements checks from different aspects to see whether we are progressing toward our voluntary environmental goals as planned and how our activities are going on to achieve the goals.

### Environmental Auditing System



### Auditing at Each Business Site

At each business site, we implement internal auditing, and third party auditing by the assessment and registration organization while operating ISO 14001. We also check the environment-related facilities through environmental patrols conducted at the Manufacturing Engineering, Maintenance, and Environment departments.

### Assessments by External ISO 14001 Assessment and Registration Organization

(*)	Type of assessment	Assessment date	Assessment
1)	Regular assessment	May 19–21, 2004	As a result of the follow-up assessment together with ISO 9001, the EMS was regarded as renewable for ISO 14001 certification, although there were minor nonconformities.
	Renewal assessment	February 15–18, 2005	As a result of the assessment, there were no nonconformities. The EMS was regarded as renewable.
2)	Regular assessment	June 21–24, 2004	As a result of the assessment, there were no nonconformities. The achievements of the environmental activities conducted within each department were acceptable so that the EMS was regarded as renewable.
3)	Regular assessment	December 2–3, 2004	As a result of the assessment, there were nonconformities, which did not influence the reliability of the effectiveness of the entire EMS. By taking corrective measures, the EMS was regarded as renewable.
4)	Regular assessment Site expansion assessment	February 2–4, 2005	As a result of the assessment, there were no nonconformities. The EMS was regarded as renewable and expandable to the Ohmiya Business Site (Subaru Parts & Accessories Div.).
5)	Renewal assessment Site expansion assessment	January 24–28, 2005	As a result of the assessment, there were no nonconformities. The EMS was regarded as being operated properly and expandable to the Subaru Parts Distribution Center.

## Company-wide Unified Auditing

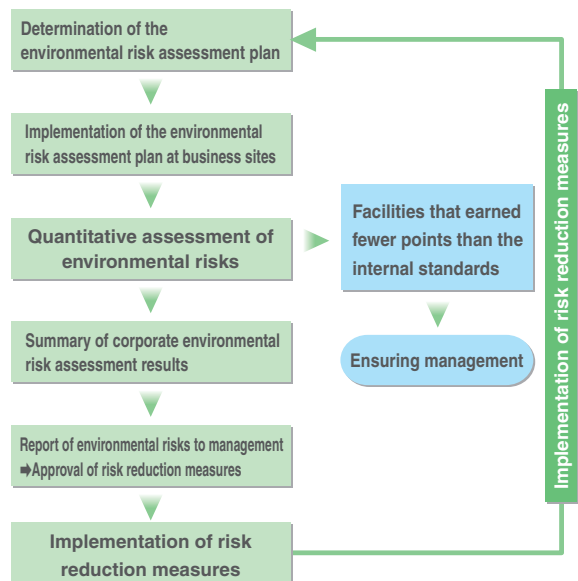
### Environmental Risk Assessment

Oil fuels and chemical materials are used in the manufacturing process and the R&D stage. These, if mistakenly handled or managed, might not only contaminate water and pollute the air, but also harm human health and affect the animal and plant ecosystems. Since fiscal 2001, FHI has implemented the Environmental Risk Assessment under our original assessment criteria for the facilities where these materials are used and stored. By identifying the risks numerically through the assessment, facilities with higher figures are being improved in terms of equipment and management to reduce potential risks. By fiscal 2003, large facilities had been assessed, and their improvements had almost been completed. In fiscal 2004, the risk assessment was conducted, focusing on management of equipment, for an upgrade of standards and education.

### Environmental Risk Assessments and Improvements

Fiscal	Number of risk assessments	Number of cases to be improved	Number of cases improved
2001	325	80	80
2002	795	54	54
2003	371	64	59
2004	290	18	13

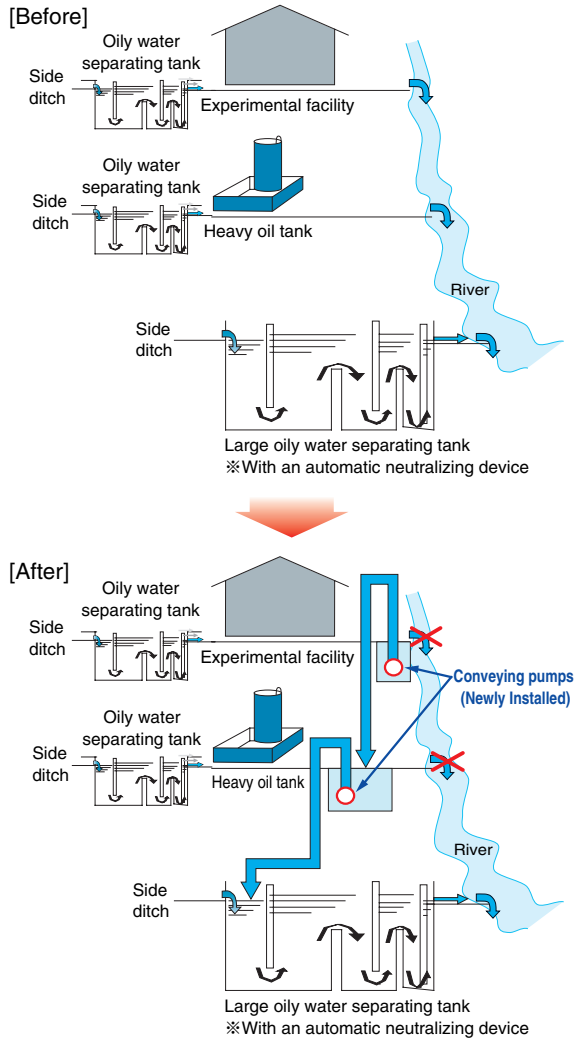
### Risk Reduction Process Using Environmental Risk Assessment



### Improved Case

The effluent and rainwater of plants where automobiles have been produced since the time of the Subaru 360 (a mini car called the Ladybug), are released into rivers by way of the separating tank, which has the ability to separate oil from water and to check the pH level. However, there were an experimental facility and a heavy oil tank downstream of some of the separating tanks. If any substance that contaminates the river should leak, it will easily flow out into the river.

Therefore, a conveying pump was installed at the end of each conduit in order to convey water to the large oily water separating tank having the automatic neutralizing function. Thus, environmental risks were reduced by this modification.



**Environmental Risk Assessments at Affiliated Companies**

We think that the environmental burden will be reduced drastically by involving affiliated companies of the group in the activities of FHI. Since acquisition of ISO 14001 certification, the related manufacturing affiliates have been making improvements continuously. In fiscal 2004, they introduced our Environmental Risk Assessment to reduce environmental risks in the levels common to the group. This year, 24 environmental facilities were assessed so that 31 improvement items were detected in management and 6 items in facilities. We will constantly implement the assessment for reduction of environmental risks in the entire Subaru Group.

**Environmental Risk Assessment Conducted at an Affiliated Company**

The following photo shows the checking of environmental risks in the effluent treatment facility at Fuji Robin Industries Ltd., where fire pumps equipped with Robin engines are manufactured. In accordance with the flow of the wastewater treatment, facility risks are

assessed, while management risks are checked based on management criteria, records of inspections, emergency measures, and education systems. Consequently, the significance, management factors, and facility factors are assessed with values. To eliminate arbitrariness, the assessment was conducted by three people: one from Fuji Robin Industries Ltd., one from the Industrial Products Company, and one from the Head Office.



Checking the pH meter and the level sensor.



Referring to drawings and data, marks are given.

**Environmental Performance Assessment System**

The Environmental Performance Assessment System was introduced in fiscal 2002. After each business site and specialized committee implements self-assessment, the officer in charge of the environment, Mr. Suzuki, senior executive vice president, visits each business site to conduct a hearing (and an audit) about the progress of the activities. Thus, we unify our activities with confirmation of the achievements and identification of the measures to take. In fiscal 2004, the assessment was implemented in 292 items. As the radar chart of assessment results shows, improvement has been

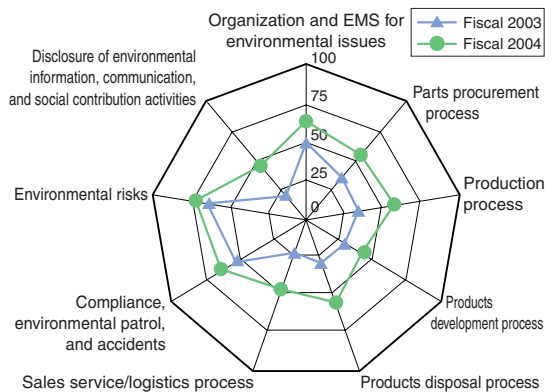


made since fiscal 2003. We are promoting the activities for further betterment.

Mr. Suzuki, senior executive vice president (second from the front on the left side) visited Industrial Products Company for a hearing.

**Environmental Performance Assessment Results\*1**

In fiscal 2004, the environmental performance was improved company-wide by about 50% (36.1%→56.6%) as compared with the results of the previous year. While achieving the goals of each department as planned, we will have to tackle the following issues: improvement of environmental activities at affiliated companies and dealers, social contributions, communication, reduction of CO<sub>2</sub> in the logistics stage, decrease in environmental complaints and accidents, and conservation of paper.



\*1. Environmental Performance Assessment Results: Regarding the most advanced activity levels as 100% by benchmarking the environmental activities implemented at leading environmental companies at home and abroad, we assess our activity levels objectively and relatively.

## Environmental Education

Our business activities are closely related to global warming, as well as the environmental problems of wastes, air pollution, and water contamination. It is important in product development and plant production activities to recognize and reduce such impacts on the environment. FHI provides a variety of environmental education: education and emergency drilling based on the Environmental Management System (EMS), education for different levels of employees ranging from new recruits to those receiving promotions by acquiring certification, using company-wide unified textbooks, and specialized education for management. In addition, we utilize all opportunities to carry out instructive activities, including environmental campaign months and environmental lectures.

### Educational Activities through Lectures and Presentations

In June 2004, when an environmental campaign was implemented, the Gunma Manufacturing Division gave an environmental lecture to its executives, inviting Mr. Hashimoto, Manager of the Environmental Affairs



Environmental lecture by Mr. Hashimoto, Manager of the Environmental Affairs Department (at that time) of Bridgestone Corporation

Department, Bridgestone Corporation, as the lecturer.

The Utsunomiya Manufacturing Division holds environmental case study presentations twice a year, where sixteen teams participated in fiscal 2004. In March 2005, the Gunma Manufacturing Division



Chief General Manager Tamura (at that time) at the Energy Conservation Case Study Presentation at the Gunma Manufacturing Division

conducted the Energy Conservation Case Study Presentation for the tenth time, where ten teams, including the engineering and indirect divisions, participated.

### The First Operations Improvement Case Study Presentation Held at Head Office

In June 2004, as a part of an environmental campaign month, the head office conducted the First EMS Operations Improvement Case Study Presentation. Eight teams mainly from the automobile sales department participated in the presentation in order to present the daily measures and achievements related to improvement of environmental impacts based on original operations in the indirect department.



The First EMS Operations Improvement Case Study Presentation at Head Office



### Adoption of e-learning

The head office is composed of the automobile sales and many other divisions. Therefore, education on environmental conservation by e-learning over the intranet was introduced in fiscal 2003 for better understanding of the EMS because of the difficulty in providing lectures directly to employees. In fiscal 2004, education on compliance, as well as the EMS, was implemented through e-learning. In fiscal 2005, education by e-learning will be developed in the Tokyo office, which has the Automobile Development Division, and the Gunma Manufacturing Division as the manufacturing division.

### Subaru Safety Environment Association

At the Gunma Manufacturing Division, the Subaru Safety Environment Association was established for the improvement of the environmental activities of its local suppliers. Through the conference, the Association exchanges information on environmental conservation such as energy conservation, waste reduction, and pollution control. The Association also supports environmental



education to new recruits of the member companies (implemented in April 2004).

Subaru Safety Environment Association (Education for new recruits of member companies)

### Stickers that Say Stop Idling

The Gunma Manufacturing Division prepared stickers that say "Stop Idling" with an illustration of the famous old car, the Subaru 360, representing safe driving that is friendly to the environment. The stickers were affixed to company-owned cars at the



manufacturing division. All departments are working on "Safe Driving, Eco Driving, and Driving without Idling."

### Emergency Drills based on EMS

At every worksite of each manufacturing division, we regularly conduct a drill according to specific procedures so



Emergency drill in case hazardous material (gasoline) should leak from a pipe (1st Engineering Sec, 3rd Production Dept, Gunma Plant).

We are well prepared for an emergency by conducting drills for checking the flow direction and using sandbags and oil fences.

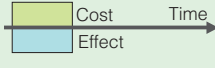

that we can take appropriate action to prevent or minimize the impact of an accident or emergency if it should happen.

## Environmental Accounting

### Concept and Calculation of Environmental Costs and Economic Effects

With reference to the guidelines of the Ministry of the Environment (year 2000, 2002, and 2005 reports), FHI formulated its own guidelines according to its environmental conservation activity organization, based on which the environmental costs and economic effects are calculated. (Those for the affiliated companies are also calculated on the basis of our guidelines. See p. 46.)

#### Definition and Categorization of Environmental Costs

1) Costs for reducing the environmental burden	1. Costs for reducing the environmental burden during the production process	
2) Investment costs	2. Costs for obtaining environmental conservation effects that continue for several terms	
3) Other costs	3. Costs not belonging to the above categories	
※ Investments in environmental facilities	For reference (facilities are included in the depreciation cost, and the declining balance method is adopted)	

### Environmental Cost Calculation Method

For related costs (depreciation costs, maintenance and management costs, etc.) of the

facilities that are used both for environmental conservation and for other purposes, and for labor costs, either the aggregated balance or the pro rata aggregation is adopted. For example, the environmental cost of energy conservation in a production facility is calculated as follows.

Environmental costs =  $K \times$  (Depreciation costs, maintenance and management costs, and other costs of the facility) where  $K$ , coefficient of environmental impact, is calculated as follows:

$$K = (\text{Total amount of investment} - \text{Cost of investment without energy conservation purpose}) / (\text{Total amount of investment})$$

### Economic Effects Calculation Method

Referring to the guidelines by the Ministry of the Environment and partially incorporating original FHI concepts, FHI determines the calculation methods based on the effects of the cost reduction and others available by reducing the environmental burden. Specifically, the effects are calculated for each cost category.

For example, the effect of reduced waste treatment costs (waste treatment costs reduced by controlling the waste and changing the treatment methods) and the effect of reduced energy costs are calculated for each cost category. As for the economic effects of facilities (depreciable assets), the effects are calculated for the depreciation period. As for the environmental improvement measures without facilities, the effects are the difference from the costs in the previous year (the difference between cases where the improvement measure was implemented and cases where it was not). For the time being, however, because of the difficulty in estimating clear-cut figures, the economic effects in those categories, such as contributions to value-added products and the effect of risk aversion (evaded responsibilities for compensation), are excluded.

### Results of Aggregated Environmental Costs and Effects in Fiscal 2004 (Subject: FHI (nonconsolidated) Period: April 2004 through March 2005)

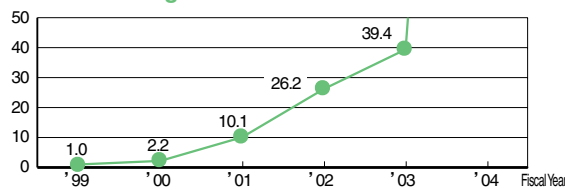
Cost Categories in [ ] at the right bottom is based on the Guideline by the Ministry of Environment*1		Environmental costs			Main activities ★: New measures in fiscal 2004	Detailed pages	Costs (¥ million)		
		Costs (¥ million)					Fiscal 2004	Fiscal 2003	Fiscal 2002
		Fiscal 2004	Fiscal 2003	Fiscal 2002					
Costs for reducing the environmental burden (Production stage)	Waste treatment and recycling				Paint sludge recycling plant				
	Waste reduction [①-3]	629	701	948	☆Maintenance of the recycling center ☆Introducing electrostatic coating for bumpers	32	19	45	80
	Energy conservation and CO <sub>2</sub> emissions reduction [①-2]	383	376	295	☆Introduction of the cogeneration system (ESCO style) ☆Introducing the use of natural gas for boilers	34	494	336	968
	Reduction of CFC alternative discharge [①-2]	5	6	8	Introduction of energy-saving compressors, robots, and high-efficiency transformers Recovery of air conditioner refrigerants	35	0	0	0
	Pollution control such as wastewater and exhaust gas treatment [①-1]	991	1,034	893	☆Partial renewal of wastewater treatment ☆Measures to address coating odors ☆Rainwater final treatment tank and modification of the coating facility	35	473	430	552
	Reduction of VOC discharge [①-1]	71	70	83	☆Introducing electrostatic coating for bumpers ☆Facilities for collecting washing thinner	35	74	144	0
	<b>Total costs to reduce the environmental burden</b>	<b>2,079</b>	<b>2,187</b>	<b>2,228</b>			<b>1,059</b>	<b>955</b>	<b>1,599</b>
Investment costs	Education and ISO 14001 related matters [③]	429	476	465	Environmental education, training, and environmental improvement activities at the worksites Maintaining ISO 14001 certification (application cost, internal auditing and assessment, labor costs)	14	—	—	—
	Product research and development [④]	16,892	20,088	21,766	Improvement of fuel economy, cleaner emissions, and better recycling efficiency Development of eco products	22	973	1,973	2,594
	<b>Total investment costs</b>	<b>17,321</b>	<b>20,563</b>	<b>22,232</b>			<b>973</b>	<b>1,973</b>	<b>2,594</b>
Other costs	Measures for end-of-life products [②]	579	259	146	Collection of used market bumpers → recycling Measures to cope with the Law on Recycling End-of-Life Vehicles	37	525	—	—
	Social contribution and other environmental measures [③⑤⑥⑦]	1,067	2,034	1,504	Preparation of environmental reports and cleaning around plants Environment-related projects by the Japan Automobile Manufacturers Association, Inc. Planting trees, measures for environmental discrepancies, etc.	63	0	7	323
	<b>Total other costs</b>	<b>1,645</b>	<b>2,292</b>	<b>1,650</b>			<b>525</b>	<b>7</b>	<b>323</b>
<b>Total cost</b>		<b>21,045</b>	<b>25,043</b>	<b>26,109</b>			<b>2,557</b>	<b>2,936</b>	<b>4,516</b>



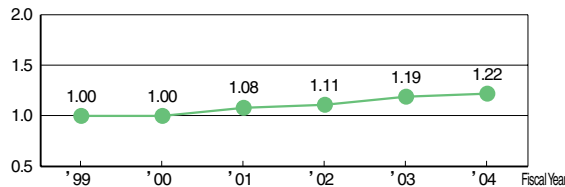
**Environmental Costs and Economic Effects in Fiscal 2004: Environmental Performance Improved**

Environmental costs were ¥21 billion, a reduction of ¥4 billion (16%) from the previous year. This was because enhanced efficiency in product research and development decreased the costs. On the other hand, economic effects totaled ¥2.3 billion, which was an increase of ¥0.3 billion (16%). This was mainly because valued materials were sold, the usages of painting and solvent were reduced, and energy costs were decreased. With fewer costs than the previous year, the environmental burden was reduced further by recycling the full amount of generated materials in all the manufacturing divisions (zero level waste generation). In addition, ISO 14001 certification was expanded to the Subaru Parts Distribution Center and other divisions, outflow risks were reduced, and the good results of development and the implementation of the system responding to the Law on Recycling End-of-Life

**Sales/Waste generation**



**Sales/CO<sub>2</sub> emissions Fiscal Year**

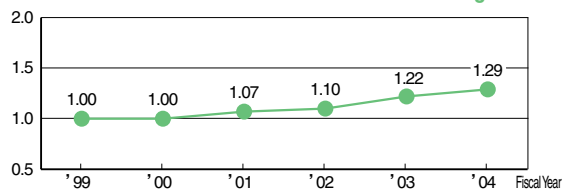


Vehicles were accomplished. The Utsunomiya Manufacturing Division introduced the ESCO-method natural gas cogeneration system. Without initial investment and risk taking, good results were produced mainly in conservation of energy and reduction of CO<sub>2</sub> emissions. (For more information, see p.36.)

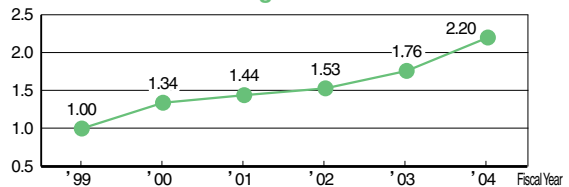
**Environmental Management Indexes**

Environmental efficiency of business activities, which is one of the environmental management indexes, was regarded as [sales ÷ environmental burden]. They are calculated with the environmental burden in the production process by regarding the fiscal 1999 levels as the standard. The results are indicated in the following graphs. Environmental efficiency has improved well for each item. Particularly, a zero waste generation level was reached in fiscal 2004 with maximum efficiency, which is impossible to indicate in the graph.

**Sales/Total amount of waste and other materials generated**



**Sales / PRTR discharge moved**



Economic effects				Environmental performance (quantitative effects)					
	Effects (¥ million)			Category	Unit	Fiscal 2004	Increase/Decrease from fiscal 2002	Fiscal 2003	Fiscal 2002
	Fiscal 2004	Fiscal 2003	Fiscal 2002						
Reduced costs through waste control and treatment method changes	1,370	1,199 *2	675	Amount of matter generated	ton	73,024	-2,893	75,917	82,325
Profit from the sales of valued materials obtained through recycling				Amount of waste generated	ton	0	-182	182	267
Reduced energy costs	524	465	257	Amount of landfill	ton	0	-6	6	13
Reduced virgin material purchasing costs by reusing recovered air conditioner refrigerants	3	3	2	Energy consumption (Crude oil equivalent)	1,000 kL	134.8	-0.5	135.3	138.2
Reduced costs by replacing cleaning agents (chemical agents)	8	9	8	Energy consumption per production	kL/¥100 million	14.3	-0.3	14.5	15.2
Reduced paint and solvent usage	374	282	264	CO <sub>2</sub> discharge	10,000 tons-CO <sub>2</sub>	23.3	-0.4	23.6	24.7
Total savings from the effects of reducing the environmental burden	2,278	1,958	1,205	Discharge of greenhouse gases other than CO <sub>2</sub>	ton-CO <sub>2</sub>	395	16	379	368
—	—	—	—	PRTR chemicals *3	ton				
(Total investment effects) N/A for the time being	0	0	0	Amount handled	ton	4,285	411	3,874	3,860
Reduced virgin material purchasing costs by using recycled materials	20	22	20	Amount released and transferred	ton	1,013	-239	1,252	1,403
Reduced costs by changing raw materials	0	0	0	VOC discharge (automobiles only)	g/m <sup>2</sup>	46.4	-0.8	47.2	49.5
Total of other effects	2,298	1,980	1,226	Note: As figures are rounded, some totals are not precise.					

**Rates of Environmental Conservation Activities in FHI Business Activities**

	Fiscal 2004	Fiscal 2003	Fiscal 2002
Proportion of the R&D cost for environmental conservation to the test and research costs	32%	35%	36%
Proportion of the investment for environmental conservation to capital investment	10%	9%	13%

\*2 There was an error in counting the amount of waste-related effects in fiscal 2003. Against the amount mentioned in the 2004 report, the amount in this report is reduced by ¥64 million.  
 \*3 PRTR (Pollutant release and transfer register) chemicals: Totaling the chemicals, of which annual amounts handled are one ton or more (0.5 tons or more for Class I Designated chemical substances).

## Overall Achievements under the Fiscal 2004 and Fiscal 2005 Plans

### Environmental Management

Fiscal 2004		Fiscal 2005 goals
Goals	Achievements	
Promote the establishment of environmental management systems	The Subaru Parts Distribution Center (Ohta City) and the Subaru Parts & Accessories Division (Saitama City) acquired ISO 14001 certification.	Further promote establishment of EMS
Further improve information in the 2004 Environmental Report (environmental achievements in fiscal 2003)	In the 2004 Environmental Report (environmental achievements in fiscal 2003), the report on social activities was independently sectioned as the "Social Report," the contents of which have been improved from last year's report.	Further improve information in the 2005 Environmental Report (environmental achievements in fiscal 2004)

### Development Process and Products

Category	Fiscal 2004		Fiscal 2005 goals
	Goals	Achievements	
Fuel economy	<ul style="list-style-type: none"> <li>Continue fuel economy improvement for every full model change and annual model change</li> <li>Satisfy fiscal 2010 fuel economy standards earlier by fiscal 2006</li> </ul>	<ul style="list-style-type: none"> <li>Met fiscal 2010 fuel economy standards in three ranks out of five for passenger vehicles and in six ranks out of six for mini-sized trucks</li> </ul>	Implement as planned
Exhaust emissions	<ul style="list-style-type: none"> <li>From 2003, start introducing ultra low emissions vehicles, cars with exhaust emissions 75% reduced beyond 2000 standards, and aim to introduce cars with emissions reduced 50% beyond 2005 standards; by 2005, the goal is to have 80% or more of all passenger cars be low emissions vehicles.</li> </ul>	<ul style="list-style-type: none"> <li>Introduced low emission vehicles, the "Forester NA" and the "R1", with exhaust emissions reduced 50% beyond 2005 standards.</li> </ul>	The goal is to have the exhaust emissions of 80% of the cars sold be either 50% or 75% reduced beyond 2005 standards (out of this 80% figure, half should be vehicles with emissions reduced 75% beyond 2005 standards) by 2006
Noise	Further reduce all noise levels of the automobile	Developed low-noise power units, exhaust systems, and other components during Subaru's annual vehicle improvement period.	Reduce all noise levels of the automobile for further reduction of environmental noise
Clean energy vehicles	<ul style="list-style-type: none"> <li>Hybrid vehicles: Introduce hybrid vehicles to the market by fiscal 2006</li> <li>Natural gas vehicles: Introduce the new "Legacy B4 CNG" to the market in spring 2004</li> <li>Fuel cell vehicles: Develop the next-generation FCVs</li> </ul>	<ul style="list-style-type: none"> <li>Hybrid vehicles: Continue development toward introduction to the market</li> <li>Natural gas vehicles: Introduced NGVs based on the new "Legacy" to the market</li> <li>Fuel cell vehicles: Continued development toward the next-generation FCVs</li> </ul>	<ul style="list-style-type: none"> <li>Hybrid vehicles: Continue development for introduction to the market, and aim at limited introduction to the market in fiscal 2007</li> <li>Natural gas vehicles: Continue market expansion of NGVs based on the new "Legacy"</li> <li>Fuel cell vehicles: Continue development toward next-generation FCVs</li> </ul>

### Production Stage

Category	Fiscal 2004		Fiscal 2005 goals
	Goals	Achievements	
Waste reduction	<ul style="list-style-type: none"> <li>Control amount of waste generated.</li> </ul>	<ul style="list-style-type: none"> <li>Reached zero waste generation level</li> </ul>	<ul style="list-style-type: none"> <li>Control amount of waste generated</li> <li>Maintain zero waste generation level</li> </ul>
Energy conservation	<ul style="list-style-type: none"> <li>Work to accomplish the goal for energy consumption per production (28% reduction compared with the fiscal 1990 level by fiscal 2006)</li> <li>Work to accomplish the CO<sub>2</sub> discharge reduction goal (6% reduction compared with the fiscal 1990 level by fiscal 2006)</li> </ul>	<ul style="list-style-type: none"> <li>Improved energy consumption per production by 1.9% from the previous year</li> <li>Reduced CO<sub>2</sub> discharges by 15% compared with the fiscal 1990 level</li> </ul>	<ul style="list-style-type: none"> <li>Work to accomplish the energy consumption per production goal (28% reduction compared with the fiscal 1990 level by fiscal 2006)</li> <li>Work to accomplish the CO<sub>2</sub> discharge reduction goal (6% reduction compared with the fiscal 1990 level by fiscal 2006)</li> </ul>
Reduction of substances with environmental impact (Automotive Business Unit)	Work to accomplish the paint VOC reduction goal (45g/m <sup>2</sup> or less by fiscal 2006)	Reduced generation of paint VOC (per unit area) to 46.4g/m <sup>2</sup> , a 57.4% reduction compared with the fiscal 1995 level	Work to accomplish the paint VOC reduction goal (45g/m <sup>2</sup> or less by fiscal 2006)

Category	Fiscal 2004		Fiscal 2005 goals
	Goals	Achievements	
Green procurement	<ul style="list-style-type: none"> <li>Automotive Business Unit: Establish EMS at 95% or more of the suppliers</li> <li>Industrial Products Company: Maintain EMS established at all suppliers</li> <li>Aerospace Company: Encourage suppliers to establish EMS</li> <li>Eco Technologies Company: Encourage suppliers to establish EMS</li> <li>Expand green procurement. Promote purchasing of eco products in the Head Office area.</li> </ul>	<ul style="list-style-type: none"> <li>Automotive Business Unit: Established EMS at 96% of the suppliers</li> <li>Industrial Products Company: Maintained the EMS established at all suppliers</li> <li>Aerospace Company: Held explanatory meetings for suppliers on establishment of EMS, and conducted questionnaires about research and reduction of substances with environmental impact</li> <li>Eco Technologies Company: Held explanatory meetings for suppliers on establishment of EMS</li> <li>Achieved 100% purchasing of eco products in the Gunma region</li> <li>Expanded green procurement in the Head Office area</li> </ul>	<ul style="list-style-type: none"> <li>Automotive Business Unit: Have more suppliers establish EMS</li> <li>Industrial Products Company: Proceed with reduction of substances with environmental impact</li> <li>Aerospace Company: Encourage suppliers to establish EMS</li> <li>Eco Technologies Company: Encourage suppliers to establish EMS</li> <li>Try to achieve 100% eco product purchasing of consumable office supplies in the Head Office area, and promote eco products at each company</li> </ul>

**Recycling**

Category	Fiscal 2004		Fiscal 2005 goals
	Goals	Achievements	
Improvement of recycling efficiency	<ul style="list-style-type: none"> <li>Continue to incorporate technologies developed for easier dismantling and higher recycling efficiency into vehicles under development</li> <li>Complete the establishment of the recycling system, and respond to the Law on Recycling End-of-Life Vehicles enforced on January 1, 2005</li> <li>Continuously proceed with studies of the practical applications of ELV (End-of-Life Vehicle) recycling</li> </ul>	<ul style="list-style-type: none"> <li>Incorporated a recycling design for easier dismantling and higher recycling efficiency into the R1</li> <li>Established Automotive Recycling System of Subaru (ARSS), and smoothly coped with the Law on Recycling End-of-Life Vehicles</li> <li>Promoted study of practical applications of ELV recycling, particularly glass recycling and harness recovery. Expanded adoption of PP-grade integrated materials</li> </ul>	<ul style="list-style-type: none"> <li>Continuously incorporate technologies developed for easier dismantling and higher recycling efficiency into cars under development</li> <li>Continuously promote study of practical applications of ELV recycling</li> </ul>
Recycling volume	<ul style="list-style-type: none"> <li>Increase the number of used bumpers collected from the market</li> </ul>	<ul style="list-style-type: none"> <li>Collected about 41,700 used bumpers</li> </ul>	<ul style="list-style-type: none"> <li>Increase the number of used bumpers collected from the market</li> </ul>
Reduction of substances with environmental impact	<ul style="list-style-type: none"> <li>Promote alternative technologies for the parts and substances with environmental impact newly subject to control by the EU directive from 2004</li> <li>Promote measures for the voluntary action program under Goals for Reduction of Substances with Environmental Impact in New Model Cars by the Japan Automobile Manufacturers Association (JAMA)</li> </ul>	<ul style="list-style-type: none"> <li>Dealt with the EU directive on restriction of substances with environmental impact (lead regulations came into effect in January 2005)</li> <li>In accordance with Goals for Reduction of Substances with Environmental Impact in New Model Cars by JAMA usage of lead in compact cars was reduced to 1/10 the 1996 level The goal concerning mercury was also achieved</li> <li>Progress was made in responding to the fundamental ban on use of hexavalent chromium</li> </ul>	<ul style="list-style-type: none"> <li>Promote development of alternative technology for parts containing lead that will be subject to the EU directive from 2006, and continue to study further reduction of lead usage</li> <li>Promote measures for the voluntary action program under the Goals for Reduction of Substances with Environmental impact in New Model Cars by JAMA</li> <li>Further promote development and adoption of alternative technology for hexavalent chromium</li> </ul>
Sales and services	<ul style="list-style-type: none"> <li>Respond to the Law on Recycling End-of-Life Vehicles without delay</li> <li>Further promote environmental conservation activities by dealers</li> </ul>	<ul style="list-style-type: none"> <li>Held practical business seminar meetings for dealers, and established an intra-company operation system</li> <li>Aomori Subaru Co., Ltd. and Fuji Subaru Co., Ltd. acquired ISO 14001 certification</li> </ul>	<ul style="list-style-type: none"> <li>Continuously promote responses to the Law on Recycling End-of-Life Vehicles</li> </ul>

**Logistics**

Fiscal 2004		Fiscal 2005 goals
Goals	Achievements	
<ul style="list-style-type: none"> <li>Promote logistics efficiency, and control generation of waste</li> <li>Further streamline transportation of completed vehicles</li> <li>Control generation of packing material waste</li> </ul>	<ul style="list-style-type: none"> <li>(Transportation of completed vehicles) Increased the number of vehicles transported jointly with other companies</li> <li>(Reduction of packing material waste) Improved the packing specifications for large packing boxes shipped overseas. Also improved packing materials for knock down parts for North America</li> </ul>	<ul style="list-style-type: none"> <li>Further promote reduction of the environmental burden in terms of logistics</li> </ul>

## Reference

## New Voluntary Plan for the Environment

## ◆ FHI Environmental Conservation Program (Fiscal 2002 through Fiscal 2006)

Items		Goals and actions
Clean plants	Promoting energy conservation, and curbing global warming	<ul style="list-style-type: none"> <li>◇ Aim to reduce energy consumption per production by 28% compared to the fiscal 1990 level by fiscal 2006</li> <li>◇ Aim to reduce CO<sub>2</sub> emissions by 6% from production plants compared to the fiscal 1990 level by fiscal 2006</li> </ul>
	Control and reduction of substances with environmental impact at production plants	<ul style="list-style-type: none"> <li>◇ Establish stricter standards than the current voluntary standards for newly established and remodeled environmental facilities in order to reduce the environmental burden on the air and water</li> <li>◇ Reduce emissions of chemical substances listed in the Pollutant Release and Transfer Register (PRTR) into the environment</li> <li>◇ Reduce Volatile Organic Compound (VOC) emissions in car production lines to the level of 45g/m<sup>2</sup> or less on average by the end of fiscal 2006</li> </ul>
	Reducing wastes generated at production plants	<ul style="list-style-type: none"> <li>◇ Aim at further advances in zero emissions and zero levels of landfill disposal both directly and indirectly</li> <li>◇ Promote recycling of waste materials and using them as parts of products, as well as curbing their generation</li> </ul>
	Saving water resources	<ul style="list-style-type: none"> <li>◇ Reduce the amount of water used in the production plants</li> </ul>
	Green procurement activities	<ul style="list-style-type: none"> <li>◇ Request a research report from suppliers on the contents of substances with environmental impact, and establishment of an environmental management system. The following are the target dates for establishing the environmental management system: <ul style="list-style-type: none"> <li>● Automotive Business Unit: 95% or more of the suppliers, including overseas ones, should have established a system by March 2005</li> <li>● Industrial Products Company: by the end of March 2004</li> </ul> </li> <li>◇ Promote green procurement activities in other departments, including the Aerospace Company</li> <li>◇ Develop green procurement activities with overseas suppliers (Automotive Business Unit) <ul style="list-style-type: none"> <li>● Research started in fiscal 2002 on the status of introducing the EMS and the contents of substances with environmental impact</li> </ul> </li> </ul>
Clean products	Improving fuel economy	<p>[Automobiles]</p> <ul style="list-style-type: none"> <li>◇ Continue to improve fuel economy for every full model change and annual model change</li> <li>◇ Achieve fiscal 2010 fuel economy standards for all weight ranks by fiscal 2006</li> </ul> <p>[General-purpose engines]</p> <ul style="list-style-type: none"> <li>◇ Aim to improve the average fuel economy of general-purpose engines by 15% (compared with the 1995 level) by 2005</li> </ul>
	Cleaner exhaust emissions	<p>[Automobiles]</p> <ul style="list-style-type: none"> <li>◇ Produce excellent low emission vehicles (E-LEV) or good low emission vehicles (G-LEV) for all models, except for a few, by autumn 2002</li> <li>◇ The goal is to have the exhaust emissions of 80% of the cars sold be either 50% or 75% reduced beyond 2005 standards (out of this 80% figure, half should be vehicles with emissions reduced 75% beyond 2005 standards) by 2006</li> </ul> <p>[General-purpose engines]</p> <ul style="list-style-type: none"> <li>◇ Aim to reduce the average emissions of HC and NO<sub>x</sub> from general-purpose engines by 30% (compared with the 1995 levels) by 2005</li> </ul>
	Developing products using clean energy	<p>[Automobiles]</p> <ul style="list-style-type: none"> <li>◇ Hybrid vehicles: Continue development for market launch, and aim at limited introduction to the market in fiscal 2007</li> <li>◇ Natural gas vehicles: Continue market expansion of NGVs based on the new Legacy</li> <li>◇ Fuel cell vehicles: Continue development toward next-generation FCVs</li> </ul> <p>[General-purpose engines]</p> <ul style="list-style-type: none"> <li>◇ Introduced general-purpose engines compatible with CNG and LPG fuel during fiscal 2002</li> </ul>
	Improving recyclability	<ul style="list-style-type: none"> <li>◇ Improve recyclable design for new models, and contribute to a recycling rate of 95% in 2015 <ul style="list-style-type: none"> <li>● Improve ease of disassembly in the recycling market by considering re-use and other methods</li> <li>● Use easy-to-recycle plastic materials more extensively</li> </ul> </li> </ul>

Items		Goals and actions
Clean products	Reducing substances with environmental impact	<p>[Automobiles]</p> <ul style="list-style-type: none"> <li>◇Promote development of technologies which replace substances with environmental impact, aiming at faster application to developing vehicles                             <ul style="list-style-type: none"> <li>●Further reduce the amount of lead to 1/10 or less compared with 1996 levels from January 2006</li> <li>●Stop using mercury from January 2005 except in the following parts:                                     <ul style="list-style-type: none"> <li>Liquid crystal displays, combination lamps, discharge head lamps, and room fluorescent lighting</li> </ul> </li> <li>●Stop using cadmium from January 2007</li> <li>●Stop using hexavalent chromium from January 2008</li> </ul> </li> </ul> <p>[General-purpose engines]</p> <ul style="list-style-type: none"> <li>◇Promote reducing the amounts of substances with environmental impact, such as lead and hexavalent chromium, used for general-purpose engines</li> </ul>
	Reducing exterior noise	◇Promote development of technology to reduce noise that is compatible with both fuel economy improvement and exhaust emissions reduction
	Curbing global warming regarding air conditioning refrigerants	◇Promote further reduction in the amount of refrigerant (HFC 134a) per vehicle
	Research on traffic environments	◇Work further on Intelligent Transport Systems (ITS) that realize a safe and comfortable motorized society
Clean logistics	Reducing the environmental burden caused by logistics	◇Improve logistics efficiency and work on reducing the amount of packing materials
Clean dealers	Promoting environmental conservation activities at dealers	<ul style="list-style-type: none"> <li>◇Support environmental conservation activities by dealers</li> <li>◇Promote recycling and proper disposal during the distribution and disposal stages                             <ul style="list-style-type: none"> <li>●Collect and destroy specific chlorofluorocarbons (CFC-12), collect CFC-12's substitute (HFC 134a), collect and dispose of airbags, and collect warning flares</li> </ul> </li> <li>◇Continue to collect used bumpers (ongoing)</li> <li>◇Work to comply with the Law on Recycling End-of Life Vehicles</li> </ul>
Management extension	Implementing actions contributing to society	<ul style="list-style-type: none"> <li>◇Continue to participate in environmental events, communicate with local residents at plants, and deal with visitors to plants (ongoing)</li> <li>◇Continue to participate in cleaning and tree-planting activities in the area around each plant (ongoing)</li> <li>◇Offer support and cooperation to environmental activity groups</li> </ul>
	Disclosing environment-related information	<ul style="list-style-type: none"> <li>◇Continue to publish environmental reports, and release environmental information through publicity channels from time to time</li> <li>◇Improve and upgrade the contents of environmental reports (e.g., compliance with guidelines, and reports including group businesses)</li> </ul>
	Implementing environmental education and educational campaigns	<ul style="list-style-type: none"> <li>◇Incorporate environmental education into the company education system and put it into practice. Implement educational campaigns through company newsletters and various media</li> <li>◇Continue to implement lectures and presentations of worksite improvement case studies (ongoing)</li> </ul>
	Establishing an environmental management system	<ul style="list-style-type: none"> <li>◇Establish an environmental management system at business sites that presently lack such systems, and continuously improve the environmental management system at ISO 14001-acquired sites</li> <li>◇Implement internal environmental audits and environmental facility risk assessments</li> <li>◇Strengthen the liaison with related companies, and establish consolidated environmental management systems</li> </ul>
Others	Promoting environment-related projects	◇Promote environment-related businesses, such as turbine generator systems and environmental equipment and devices

Note: In the sections called "Cleaner exhaust emissions" and "Developing products using clean energy," the contents of the goals and actions section have been partially changed.

## Environmental Incidents

### Environment-related complaints

In fiscal 2004, FHI received seven complaints about noise. The main plant of the Gunma Manufacturing Division received a complaint regarding tire noise from vehicles carrying completed cars. This was settled by changing the running speed and implementing thorough control. The Utsunomiya Manufacturing Division received a complaint due to noise caused by ground engine tests for aircraft. We responded by completely controlling the operation according to the work procedure.

In addition, we received six complaints about offensive odors. They were caused by exhaust air from the coating booth of the main plant and the Yajima Plant of the Gunma Manufacturing Division. We responded to these cases by improving the deodorizing equipment and by reducing the paint used in the coating process. We are also promoting a project to take fundamental measures for further improvement of such facilities.

### Product Recalls

In fiscal 2004, there were no environmental technology-related product recalls.

## Environmental Communication

FHI has arranged contact channels to maintain communication with local residents, and distributed environmental information in a variety of ways. FHI also presents its approaches to environmental conservation on its Web site (<http://www.fhi.co.jp>).

In December 2004, the Utsunomiya Manufacturing Division organized an exchange meeting with eighteen board members from nine neighborhood community associations near the plant, where a study tour of the environmental facilities, such as the turbine power generation system, was arranged and environmental measures were explained.

In September 2004, the Gunma Manufacturing Division organized a social gathering with fourteen heads of wards from neighborhood community associations near the plant and explained our operation.

In July 2003, the Subaru Visitor Center was opened at the Yajima Plant of the Gunma Manufacturing Division. The center has a recycling lab to introduce the approaches Subaru takes to tackle environmental issues. In fiscal 2004, about 62,000 elementary schoolchildren, as well as about 12,000 junior and senior high school students and general visitors, visited the Center.

The Utsunomiya Manufacturing Division prepared and issued an independent Environmental & Social Report 2004. FHI also participates in the Environmental Management Forum sponsored by Nikkei Business Publications.

## Mediums to Transmit Environmental Information

English version



Japanese version



Environmental & Social Reports\*1



Photos exhibited in the Recycling Lab of the Subaru Visitor Center (Gunma Manufacturing Division)



Environmental information for each car model\*1



Company brochure



Pages concerning environment in the product catalogue



Environmental & Social Report by the Utsunomiya Manufacturing Division



International photo news (for elementary schoolchildren and junior high school students)

## Development Phase/Products

—Automotive Business Unit—

In December 2004, FHI launched the new Subaru R1 minicar, in which powerful yet smooth running and excellent fuel economy performance were simultaneously actualized to higher levels. In the Subaru Forester, to which major refinements were made in January 2005, environmentally friendly specifications have been employed for fuel economy and exhaust emission performances, while the new 2.0l horizontally-opposed four-cylinder SOHC engine has been adopted for dramatic enhancement of the acceleration performance in the practical area.

### Fuel Economy

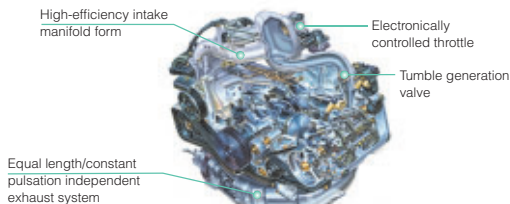
When motor vehicles consume fuel, they emit carbon dioxide (CO<sub>2</sub>) in proportion to the amount of fuel. Improving fuel economy can contribute to preventing global warming, which is caused by heat-trapping substances, including CO<sub>2</sub>, as well as saving limited energy resources.

Subaru promotes the development of technologies to improve fuel economy, including enhancement of efficiency with improved engines, reduction of transmission loss in the driveline, reduction of vehicle weight, and reduction of running resistance, while taking advantage of such features as all-wheel drive AWD and high powered engines. Subaru is gradually introducing cars that meet the fiscal 2010 fuel economy standard, which is a fuel consumption target for gasoline-powered vehicles, into the market.

### Improvement of the Engine

#### Forester

- The intake efficiency was improved by adopting electronically controlled throttles and intake manifolds with ports arranged vertically for the NA vehicle.



Forester 2.0l SOHC Engine

#### New R1 Mini-Sized Passenger Car

- Intake efficiency was improved by adopting the intake AVCS (active valve control system: variable valve timing) and electronically controlled throttles for the DOHC, 16-valve engine.

### Enhanced Efficiency of the Driveline

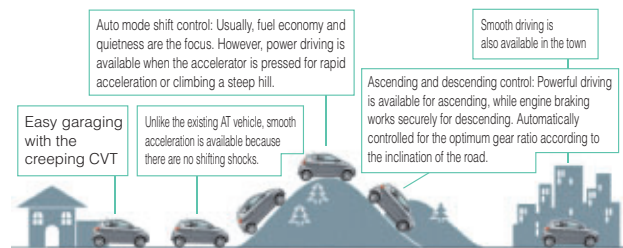
#### Forester

- Fuel consumption at idle was reduced by adopting the N control mechanism (the mechanism automatically shifts the mode to neutral when the car has been stopped by pressing the brake pedal for a certain time) also for the SOHC engine vehicle.
- The Info-ECO Mode\*<sup>1</sup> used for the turbo AT vehicle was also introduced to the SOHC engine vehicle.

### New R1 Mini-Sized Passenger Car

- The i-CVT used for the R2 was also introduced to the R1. In addition, the Info-ECO Mode was adopted for the R1 and R2 to support driving with saved fuel consumption.

#### i-CVT Running Image



### Column

#### Super Small Car

Due to their compactness, minicars, which support the bottom range of the small car market in Japan, naturally have the potential for actualizing excellent environmental performance, such as reduction of resources used in their life cycle from manufacture to disposal, as well as reduction of CO<sub>2</sub> emissions.

In particular, the Subaru R1 is even 100 mm smaller in overall length than the minicar criterion for length by focusing on personal use in urban areas. In such a small-sized car, the latest weight reduction technology developed for the New Legacy (80 kg lighter than the previous model) was adopted to realize the best fuel economy in the class (10-15 mode: 24 km/l, achieved +5% above the 2010 fuel economy standards) and excellent exhaust emission performance (50% reduced beyond the 2005 standard for exhaust emissions). For this small R1, a high quality upper class atmosphere and emotionally appealing interior and exterior design were adopted, while the



economical and environmental performances were enhanced. You can actually feel "enjoyment in driving," "pleasure in possession," and "wisdom in modesty" with the "Super Small Car" that will be a good match for the environmental age to come.

#### ● Environmental Performance of Subaru R1

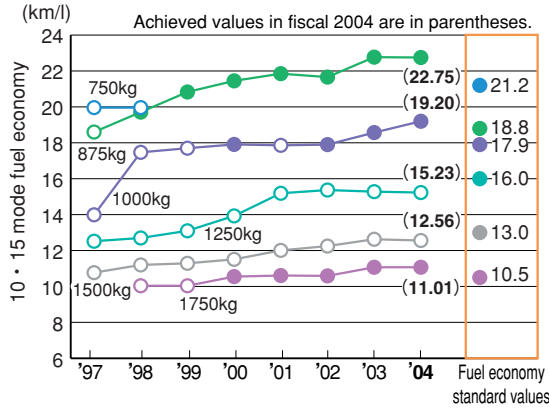
- ◆ Fuel consumption: 24.0 km/l (2WD)
- ◆ Exhaust emissions : 50% reduction beyond the 2005 standard "☆☆☆"
- ◆ Noise: Conformity to the 1998 regulations
- ◆ Air conditioner: CFC's substitute HFC134a, 400 g
- ◆ Substance with environmental impact: Achieved the 2005 goal for lead set by the Japan Automobile Manufacturers Association (1/3 or less of the 1996 level)
- ◆ Recycling: Use of materials easy to recycle and recycled materials, material indication, and implementation of design for easy dismantling

\*1. Info-ECO mode: Fuel economy was improved by optimizing the engine control, shift change control, and lock-up control of the AT. When the car is running with good fuel economy, the information lamp is lit to notify the driver of the condition.

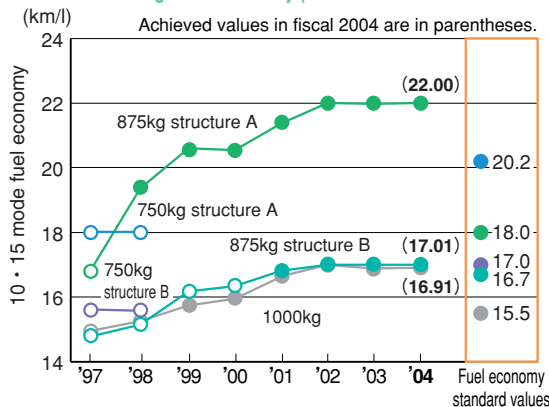
Trends in Improvement of the Average Fuel Economy by Equivalent Inertial Weight

In an effort to meet the fiscal 2010 fuel economy standards, we achieved the target in three out of the five ranks of equivalent inertial weight for gasoline passenger cars. In gasoline mini-sized trucks, we succeeded in attaining the target in all applicable ranks of the equivalent inertial weight.

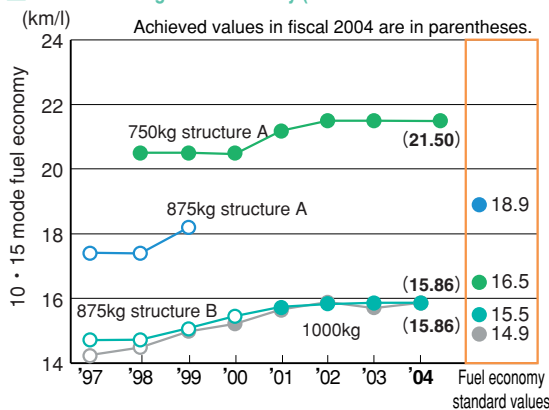
Trends in Average Fuel Economy by Equivalent Inertial Weight (Gasoline Passenger Cars) \*1



Trends in Average Fuel Economy (Gasoline Mini-sized MT Trucks) \*1

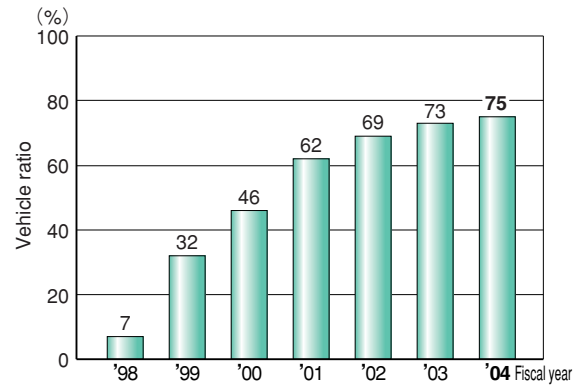


Trends in Average Fuel Economy (Gasoline Mini-sized AT Trucks) \*1

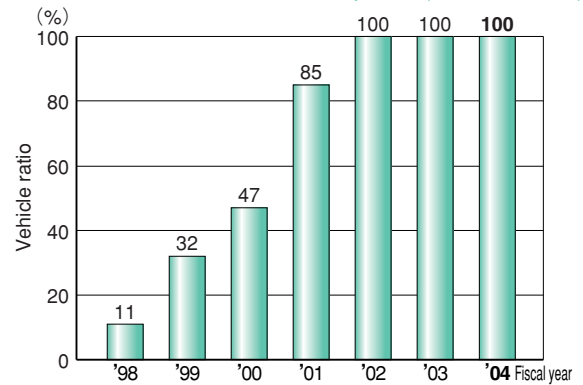


Trends in Improvement of Attainment Rates for Fiscal 2010 Fuel Economy Standards

Trends in Attainment Rates for Fiscal 2010 Fuel Economy Standards (Gasoline Passenger Cars)



Trends in Attainment Rates for Fiscal 2010 Fuel Economy Standards (Gasoline Mini-sized Trucks)



Note: Regarding the 2002 data, there were errors in the graphs of the Trends in Attainment Rates for Fiscal 2010 Fuel Economy Standards in the 2004 Environmental & Social Report. They have been corrected as shown in the above graphs.

Exhaust Emissions

Substances such as carbon monoxide (CO), hydrocarbons (HC), and nitrogen oxides (NOx), which are emitted from automobiles, are one of the causes of air pollution in metropolitan areas where there is intensive motor traffic. In order to improve the state of the air, Subaru is gradually launching low emission vehicles (certified by the Ministry of Land, Infrastructure and Transport) that meet standards stricter than the regulations.

Application Status of Low Emission Vehicles

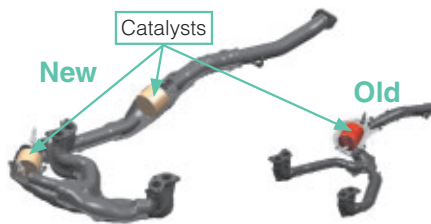
The 2.0l SOHC engine vehicle has reached the “☆☆☆☆” level, with exhaust emissions reduced 50% beyond 2005 standards by reviewing the catalyst layout in the Forester, to which major refinements were made in fiscal 2004.

Also, the new R1 minicar conformed to the “☆☆☆☆” level, with exhaust emissions reduced 50% beyond the 2005 standards.



### Exhaust Emissions Measures in Forester

The equal length/constant pulsation independent exhaust system\*<sup>1</sup> was adopted in the NA vehicle for enhancement of the purification performance of catalysts by changing their layout and size.



Change in the Exhaust System Layout

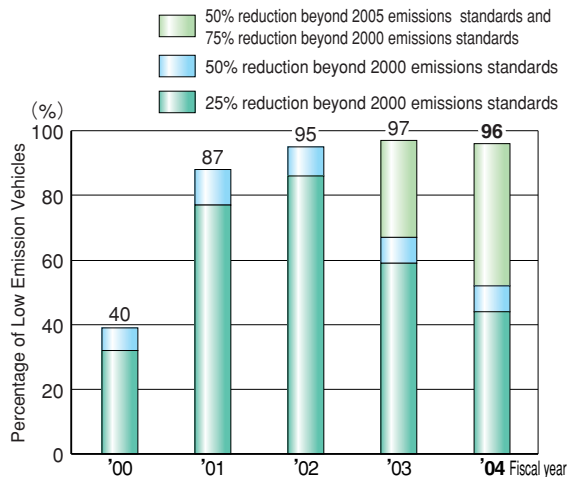
### Exhaust Emissions Measures in the New R1 Mini Car

The Active Valve Control System (AVCS) was adopted for optimization of combustion, while the air-fuel ratio control performance was enhanced by introducing electronically controlled throttle valves. The post-treatment performance was also improved by adopting the maniverter, in which the exhaust manifolds and the catalytic converter were integrated.

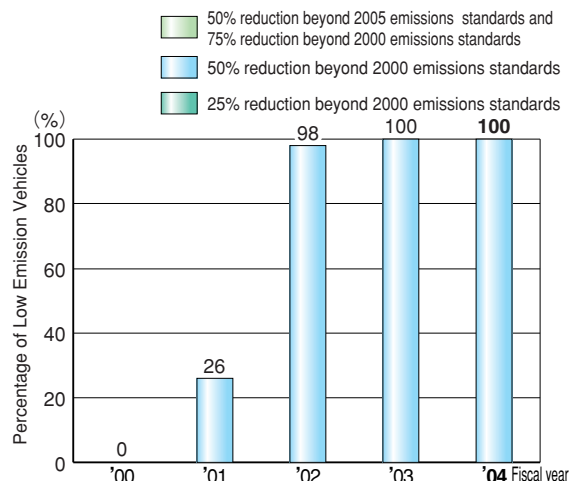
### Trends in Improvement of the Percentages of Low Emission Vehicles

The system to certify low emission vehicles started in April 2000. The percentages of the low emission vehicles shipped as Subaru are as follows.

#### Trends in Percentages of Low Emission Vehicles on Gasoline Passenger Cars



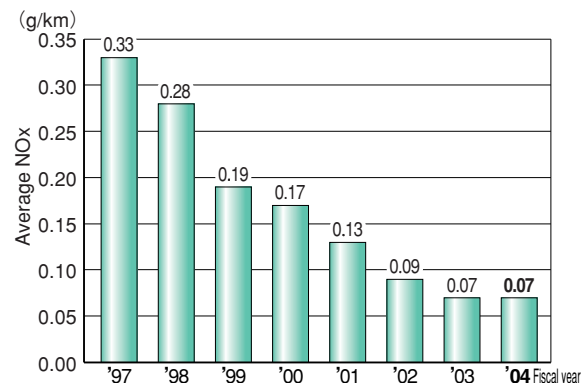
#### Trends in Percentages of Low Emission Vehicles on Mini-sized Gasoline Trucks



### Trends in NOx Averages

By launching low emission vehicles which meet the standards represented by the low emission vehicle certification standard into the market, Subaru has been able to reduce the average amount of NOx emitted by Subaru vehicles every year as shown in the chart below.

#### Trends in NOx Averages of Subaru Vehicles



- Notes:
- The figures were calculated from the regulation values (10 · 15 mode and 11 mode) at the time of shipment.
  - Going back to fiscal 2000, calculations were made with regulation or conversion values for the new test mode. The new test mode is a combined mode, where the regulation values set individually for the 10 · 15 mode and 11 mode are integrated.
  - Until fiscal 1999, the figures were calculated from the regulation values for the 10 · 15 mode.

\*1. Equal length/constant pulsation independent exhaust system: This exhaust system aims at a reduction in exhaust noise and enhancement of engine performance.

**Reference Fiscal 2010 Fuel Economy Standards (10 · 15 Mode)**

◆ Gasoline Passenger Cars

Equivalent inertial weight (kg)	~750	875	1000	1250	1500	1750	2000	2250	2500~	
Vehicle weight (kg)	Lower limit		703	828	1016	1266	1516	1766	2016	2266
	Upper limit	702	827	1015	1265	1515	1765	2015	2265	
Fiscal 2010 fuel economy standards (km/l)	21.2	18.8	17.9	16.0	13.0	10.5	8.9	7.8	6.4	

◆ Gasoline Mini-sized Trucks

Equivalent inertial weight (kg)	~750		875		1000~	
Vehicle curb weight (kg)	Lower limit		703		828	
	Upper limit	702	827			
Vehicle structure (Note)	StructureA	StructureB	StructureA	StructureB	—	
Fiscal 2010 fuel economy standards (km/l)	AT	18.9	16.2	16.5	15.5	14.9
	MT	20.2	17.0	18.0	16.7	15.5

Note: Structure A: ①  $\frac{\text{Maximum load capacity}}{\text{Gross vehicle weight}} \leq 0.3$   
 ② FF (front engine/front drive) vehicles or FF-based 4WD vehicles (excluding trucks); Pleo vans  
 Structure B: Vehicles other than Structure A; Sambar vans and trucks

**Reference Exhaust Emission Regulation Values, Low Emission Vehicle Certification Standard by the Ministry of Land, Infrastructure and Transport**

◆ New Short-term Regulations for Gasoline and LPG Passenger Cars

	10 · 15 mode (g/km)			11 mode (g/test)			Remarks
	CO	HC	NOx	CO	HC	NOx	
2000 exhaust emission regulations	0.67	0.08	0.08	19.0	2.20	1.40	
2000 emissions standards, 25% reduction level	0.67	0.06	0.06	19.0	1.65	1.05	☆☆ Good low emission vehicle
2000 emissions standards, 50% reduction level	0.67	0.04	0.04	19.0	1.10	0.70	☆☆☆ Excellent low emission vehicle
2000 emissions standards, 75% reduction level	0.67	0.02	0.02	19.0	0.55	0.35	☆☆☆☆ Ultra low emission vehicle

◆ New Long-term Regulations for Gasoline and LPG Passenger Cars

	Combined mode (g/km)				Remarks
	CO	NMHC	NOx	Combination	
2005 exhaust emission regulations	1.15	0.05	0.05	10 · 15 mode & 11 mode	
2005 emissions standards, 50% reduction level	1.15	0.025	0.025	10 · 15 mode & 11 mode	☆☆☆ low emission vehicle
2005 emissions standards, 75% reduction level	1.15	0.013	0.013	10 · 15 mode & 11 mode	☆☆☆☆ low emission vehicle

◆ New Short-term Regulations for Gasoline and LPG Passenger Cars

	10 · 15 mode (g/km)			11 mode (g/test)			Remarks
	CO	HC	NOx	CO	HC	NOx	
2002 exhaust emission regulations	3.30	0.13	0.13	38.0	3.50	2.20	
2000 emissions standards, 25% reduction level	3.30	0.10	0.10	38.0	2.63	1.65	☆☆ Good low emission vehicle
2000 emissions standards, 50% reduction level	3.30	0.07	0.07	38.0	1.75	1.10	☆☆☆ Excellent low emission vehicle
2000 emissions standards, 75% reduction level	3.30	0.03	0.03	38.0	0.88	0.55	☆☆☆☆ Ultra low emission vehicle

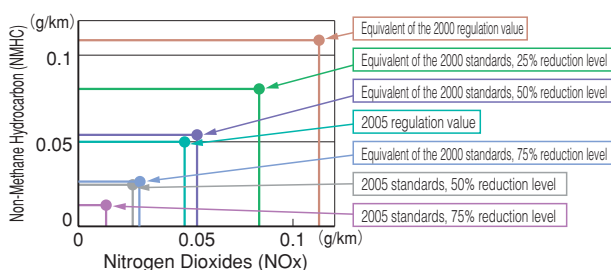
◆ New Long-term Regulations for Gasoline and LPG Passenger Cars

	Combined mode (g/km)				Remarks
	CO	NMHC	NOx	Combination	
2007 exhaust emission regulations	4.02	0.05	0.05	10 · 15 mode & 11 mode	
2005 emissions standards, 50% reduction level	4.02	0.025	0.025	10 · 15 mode & 11 mode	☆☆☆ low emission vehicle
2005 emissions standards, 75% reduction level	4.02	0.013	0.013	10 · 15 mode & 11 mode	☆☆☆☆ low emission vehicle

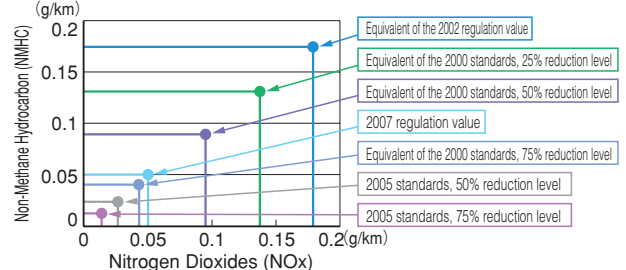
**Reference Comparison of the Exhaust Emission Regulation Values**

In 2003, the 2005 Exhaust Emission Standards were released as new criteria for gas emissions. Compared with the existing 2000 Exhaust Emissions Standards, the new standards require a further reduction of 50% or more in exhaust emissions. However, application of the regulation to mini-sized trucks starts in 2002 and 2007.

◆ Exhaust Emission Regulation Values and Low Emission Vehicle Certification Standards (Gasoline Passenger Cars)



◆ Exhaust Emission Regulation Values and Low Emission Vehicle Certification Standard (Gasoline Mini-Sized Trucks)



## Clean Energy Vehicles

Clean energy vehicles have such features as emitting fewer global warming substances (carbon dioxide) and air pollutants (carbon monoxides, hydrocarbons, nitrogen oxides, etc.) and have less of an effect on the environment than gasoline vehicles. However, there are technical problems related to cost and driving distances. Subaru has been developing clean energy vehicles that have the gasoline vehicle-level performance and utility.

### Development of Secondary Batteries (Chargeable Batteries) for Hybrid Vehicles, Electric Vehicles, and Fuel Cell Electric Vehicles

In May 2002, FHI established NEC Lamillion Energy, Ltd., jointly with NEC Corp. as a planning and development company for automotive manganese lithium-ion battery packs. By utilizing NEC's laminated manganese lithium-ion battery cell technology and Subaru's automotive battery pack technology, the new company will develop secondary batteries for hybrid vehicles, electric vehicles, and fuel cell electric vehicles, which are much thinner, lighter, and affordable, yet exhibit higher performance than existing ones. The company is aspiring to develop secondary batteries that will be accepted as an international de facto standard.

### Natural Gas Vehicles

A natural gas vehicle, the Legacy B4 2.0CNG, which is based on the new Legacy, has been on general sale since May 2004. In addition, the car was exhibited at low-pollution vehicle fairs and other events in various areas (see page. 64 for reference) so that many visitors could actually drive the CNG.

In May 2005, the improved model, where the exhaust emission performance of the CNG was drastically upgraded by reducing exhaust emissions 75% beyond the 2005 standards,



New Legacy B4 2.0 CNG



Sticker for Low-Pollution Vehicle Designated by Eight Prefectural and Municipal Governments

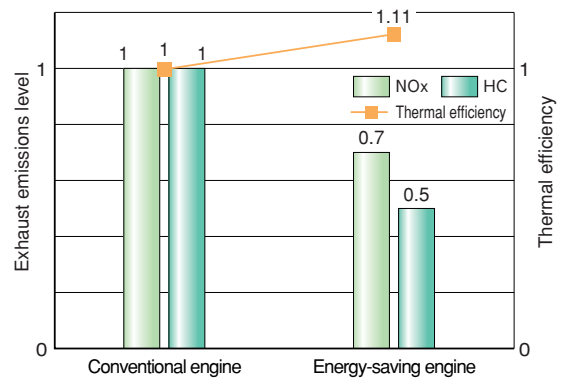
emissions reduced 75% beyond 2005 standards certified under the Low-Pollution Vehicle Designation System by eight prefectural and municipal governments.

## Joint Development of Energy-Saving Engines by Industry, Academia, and Government

For the technical development to realize cleaner, energy-saving power sources for the future, national-scale cross-sectoral approaches are required among industry, academia, and government. Subaru has been involved in the Energy Use Rationalizing Technology Strategic Development Project by the New Energy and Industrial Technology Development Organization of Japan (NEDO) since 2003.

As achievements in fiscal 2004, we obtained epochal data that the thermal efficiency was improved by 6%–11% by avoiding knock with a compression ratio of 14 while HC and NOx were simultaneously reduced from the exhaust emissions. In fiscal 2005 as the last year of the project, we aim to actualize a new gasoline engine that emits fewer pollutants yet the efficiency is as high as the diesel engine.

Exhaust Emissions Level and Thermal Efficiency of the Energy-Saving Gasoline Engine



List of Events where CNG\*1 Was Exhibited

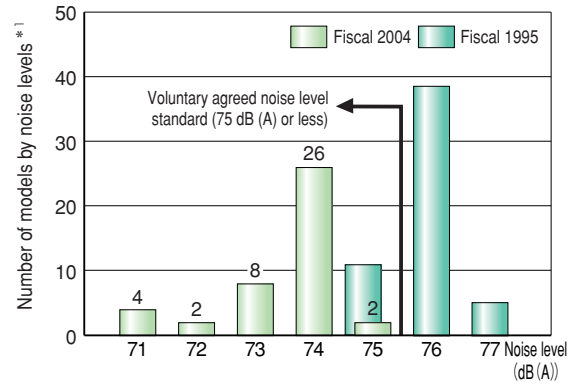
Events	Organizers	Venues
April 24 (Saturday) Fureai Festival in Ohta	Gunma Distribution Council	Gunma Sports Complex Sub-ground
May 22 (Saturday) Open Seminar on the Environment by Keio University	Keio University	Faculty of Science and Technology, Keio University Yagami Campus
June 5–6 (Saturday–Sunday) Eco Car World 2004	Ministry of the Environment, etc.	Yokohama Minato Mirai 21 Area Red-brick Warehouse Square
June 27 (Sunday) Environmental Fair 2004	Joetsu Municipal Government	Joetsu Shimin Plaza
July 14 (Wednesday) Lecture in Commemoration of Exceeding 20,000 NGVs	Japan Gas Association	Tokyo International Forum (Yurakucho)
July 16 (Friday) LEV Exhibition for the Land, Infrastructure and Transportation Day	Ministry of Land, Infrastructure and Transportation	Joint Government Building No. 3 Parking lot on the ground floor
July 22 (Thursday) Low Pollution Seminar by the Gunma Prefectural Government	Ministry of Land, Infrastructure and Transportation Gunma Land Transport Office	Maebashi Chamber of Commerce and Industry Hall
July 24–25 (Saturday–Sunday) Clean Energy Festa in Koriyama	Koriyama Municipal Government	Koriyama Culture Park
August 29 (Sunday) Official Car of the Hokkaido Marathon	Hokkaido Athletic Sports Association, etc.	Makomanai Open Stadium-Nakajima Park
September 4 (Sunday) Motor Show in Gunma	Gunma Land Transport Office	On the premises of Maebashi Land Transport Office
September 10 (Friday) Regional New Energy Seminar	Niigata Prefectural Government	Niigata Unison Plaza
September 17–19 (Friday–Sunday) LEV Fair in Osaka	Osaka Municipal Government	Asia and Pacific Trade Center
September 19 (Sunday) LEV Fair Nagoya 2004	LEV Fair Nagoya Executive Committee	Hisaya-odori Park Hikari-no-Hiroba
October 10 (Sunday) Environmental Festival by the Gunma Prefectural Government	Gunma Prefectural Government	Gunma Prefectural Government Building
October 23–24 (Saturday–Sunday) Cleanup Fair by the Tochigi Prefectural Government	Tochigi Prefectural Cleanup Fair Executive Committee	Tochigi Prefectural Children's Comprehensive Science Museum
November 7 (Sunday) Environmental Fair by the Ohta Municipal Government	Ohta Municipal Environmental Fair Executive Committee	City Hall Square

\*1. CNG: A vehicle that uses compressed natural gas as fuel.

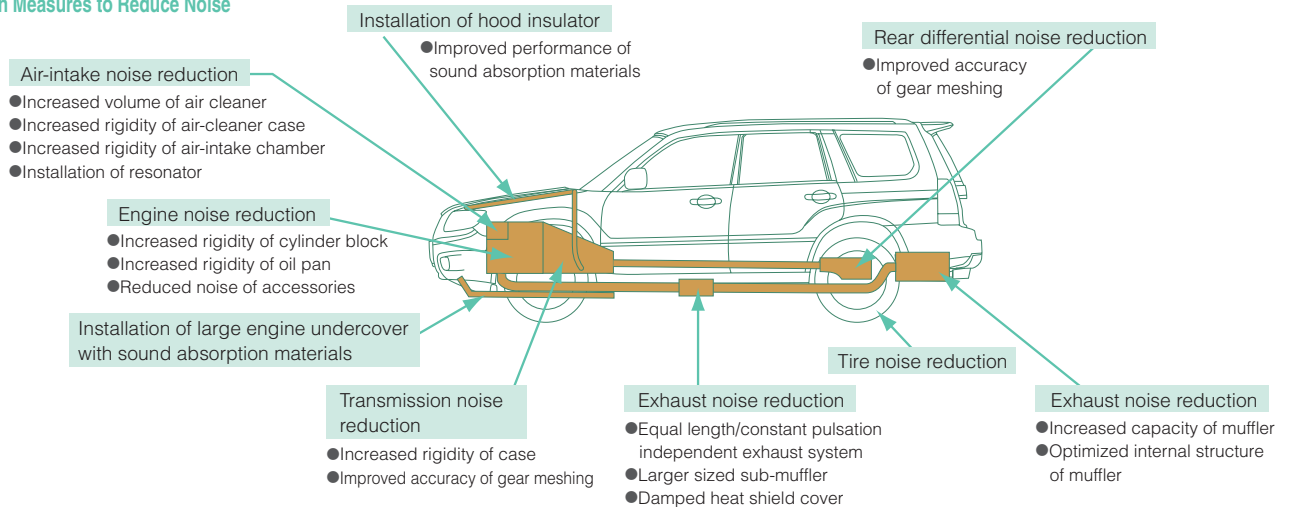
## Noise

Subaru has been actively working to reduce the noise generated from the engine, transmission, air intake and exhaust, and tires in order to reduce automobile noise. In fiscal 2004, the noise was further reduced in the Forester by significantly reviewing its air intake and exhaust system in the annual improvement. Also for other models, Subaru is promoting the reduction of noise by increasing the capacity of the exhaust system, as well as by promoting adoption of the equal length/constant pulsation independent exhaust system and large undercovers.

### Trends in Acceleration Noise (Domestic/Passenger cars)



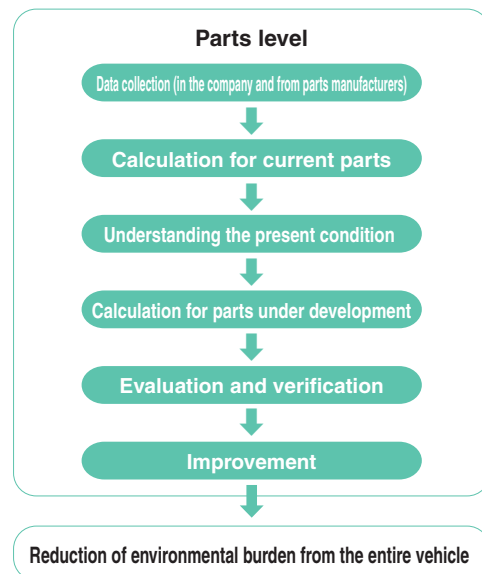
### Main Measures to Reduce Noise



## LCA Activities

Life Cycle Assessment (LCA) is a method to numerically evaluate the environmental burden over the product lifecycle starting from resource collection and manufacture to use until the disposal stage. In April 2002, Subaru established the LCA Utilization Investigative Commission. Since then, we have worked on the construction of an in-house database and the development of LCA calculation software for easy LCA application in order to reduce the environmental burden over the car lifecycle. Disseminating the LCA concept through these activities, we will continue to further improve the in-house data and study the effective application of LCA for further reduction of the environmental burden over the car lifecycle.

### Concept of Using LCA in the Development Phase



# Development Phase/Products

Aerospace, Industrial Products, Eco Technologies Companies, Clean Enterprise

FHI comprises the Aerospace Company, the Industrial Products Company for general-purpose engines, the Eco Technologies Company for environmental apparatuses and turbine generator systems, and the Clean Enterprise, besides the Automotive Business Unit. Making full use of reliable technologies accumulated so far, FHI is making every effort to provide products useful for society and people's daily lives. Each unit and company are working hard on the development of products friendly to the global environment and the creation of state-of-the-art technologies.

## Aerospace Company

In recent years, global environmental issues such as ozone holes, global warming, and marine contamination have been very controversial, while the necessity for disaster monitoring has been emphasized. Innovative research and development is indispensable for taking the initiative in finding global solutions to such issues. Under the circumstances, the Aerospace Company has been contributing with remarkable participation in research and development to actualize the stratospheric platform.

The stratospheric platform means to arrange a network base for global observation, disaster monitoring, telecommunications, and broadcasting with an unmanned airship equipped with observation sensors and communication equipment that remains in the stratosphere at an altitude of around 20 km, where meteorological conditions are relatively stable. The airship is powered by clean electric energy from solar cells and regenerative fuel cells. Toward the actualization of this, the Ministry of Education, Culture, Sports, Science and Technology has been tackling the development jointly with the Ministry of Internal Affairs and Communications. As the main manufacturer under a contract with the Japan Aerospace Exploration Agency (JAXA), the Aerospace Company has designed, manufactured, and implemented flight tests of two prototype airships (a



48-meter, non-powered, balloon-like, high-altitude, flight-testing model and a 68-meter unmanned reusable low-altitude model).

Image of the stratospheric platform (photo provided by JAXA/ISTA)

### Flight Test of 68-Meter Model

Following the success of the duration flight test in the stratosphere in August 2003, the 68-meter unmanned reusable low-altitude model manufactured by the Aerospace Company succeeded in a stationary flight test under automatic control for an hour at an altitude of 4 km on November 22, 2004. Computer controlled automatic operation is indispensable for long stationary flights of many hours at very high altitudes with no influence from airflow and other elements. This was actualized in an airship for the first time in the world.

This stationary flight test was implemented by JAXA and the National Institute of Information and Communications Technology (NICT) in Taiki-cho, Hokkaido, for about a year from December 2003. From the Aerospace Company, twenty-five engineers and manufacture-related persons stayed there to take part

in the manufacture and assembly of the airship and a variety of development tests. The goals were attained in all of the tests for global observation from the sky, telecommunications, and broadcasting, as well as stationary flight.

Thus, the Aerospace Company utilizes its cutting-edge technologies in the



environmental industry for our everyday life.

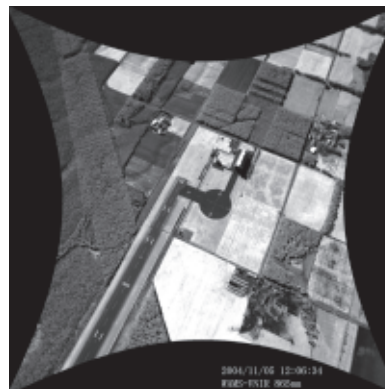
Takeoff on a test flight (photo provided by JAXA/ISTA)

#### ● Stationary Flight Test Model

- ◆ Overall length: 68 m (the largest unmanned airship in the world, the same length as the Boeing 747 jumbo jet)
- ◆ Weight : 6,400 kg
- ◆ Volume : 10,660 m<sup>3</sup>
- ◆ Power : Propeller driven by electric motors
- ◆ Control : It takes off and attains an altitude of about 100 m by remote control from a pilot. Then, it gains altitude, maintains stationary flight, and comes down for a gliding approach under automatic control by the flight control computer installed in the airship.



Automatic operation in a test flight (photo provided by JAXA/ISTA)



Observation of vegetation and the atmosphere during a test flight (photo provided by JAXA/EORC)

## Industrial Products Company

The Industrial Products Company produces general-purpose engines. These engines are loaded in machines that support our life such as construction and agricultural machinery to establish infrastructures, leisure-related equipment to fulfill our life, snow removal equipment, and engine-equipped generators for harsh environments. Product development is implemented by repeating demanding tests so that these engines and machines will always work stably under the worst conditions imaginable on the earth, such as severe heat, extreme arctic cold, blistering desert heat, and rough marine applications.

### Cleaner Exhaust Emissions and Improved Fuel Economy in General-purpose Engines

In fiscal 2004, we produced the following results.

- Fuel economy: Improved 11% compared to fiscal 1995
- Exhaust emission: Reduced 46% compared to fiscal 1995

### EH09-2 General-purpose Engine

The EH09-2 general-purpose engine, which was launched in December 2004, is an air-cooled 4-cycle OHV gasoline engine with a displacement of 86 ml. As the successor engine to the conventional side valve engine (EY08), the EH09-2 was developed as an engine friendly to the environment with excellent mounting performance. By optimizing the combustion chamber shape, intake port, and cam profile, high power was simultaneously actualized with reductions in the fuel consumption rate and the exhaust emissions level. The engine is applied to machinery used for



EH09-2 general-purpose engine

a variety of purposes, including small construction equipment, generators, pumps, and agricultural machinery as a power source useful to our life.

#### Feature 1: Friendly to the environment

High power is actualized, as well as low fuel consumption and a low exhaust emission level. The exhaust emission standards are satisfied in the US EPA Phase 2 Regulations, the CARB Tier 2 Regulations, the EU Exhaust Emission

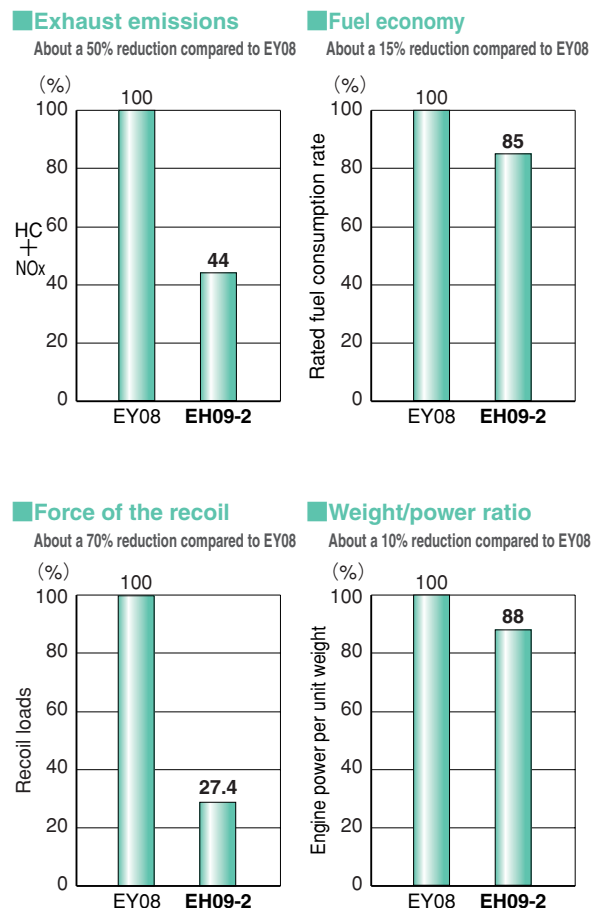
Regulations, and the Domestic Voluntary Agreed Regulations. In addition, substances with environmental impact are reduced and recyclable materials are adopted.

#### Feature 2: Gentle to people

The ignition coil with spark advance function\*1 and the mechanical decompression mechanism\*2 are adopted to ensure excellent engine starts without reverse rotation causing a kick back.\*3 The force of pulling the recoil rope to start engine is reduced to about 30% of the conventional EY08 for easier engine starting.

#### Feature 3: Excellent mounting performance

High power, durability, and excellent operability are integrated in the smallest package. Adoption of the thin recoil has increased the possibility of being mounted in a variety of equipment. In addition, the power per unit weight is the highest in its class.



\*1. Ignition coil with spark advance function: The ignition coil has an additional function that changes (advances) the ignition timing for starts against the ignition timing when the engine is operating at a high speed. This coil prevents reverse rotation causing a kick back. \*2. Mechanical decompression: This means relaxation of pressure (decompression) in the combustion chamber when starting the engine. This mechanism reduces the recoil force of the recoil starter, and facilitates starting. \*3. Reverse rotation causing a kick back reaction: For small construction machines and small general-purpose engines for agricultural use, the recoil starter, which is a manual starter using a rope, is widely used. When the rotation speed of the crankshaft is slow in starting the engine (the rope is not pulled fast enough), the crankshaft rotates in reverse and the starter rope is sometimes pulled back due to the strong reaction. By combining mechanical decompression with the ignition coil's spark advance function, startability is enhanced and the reverse rotation that causes the kick back reaction is securely prevented.

## Eco Technologies Company

Eco Technologies Company deals with a variety of products that contribute to creating comfortable living environments and a resource recycling society with an Environmentally-Sound Material Cycle, including a refuse sorting system (intermediate treatment interim disposal) and the recent refuse disposal system for skyscrapers, as well as various vehicles and equipment for waste collection, transport, and recycling. Handling the wind turbine generator systems to produce clean energy, Eco Technologies Company contributes to conservation of the global environment with its ecological products.

### Vehicles that Collect and Transport Waste

#### Development of the New Refuse Collection Vehicle with Attachable and Detachable Body<sup>\*1</sup>

This is a new multipurpose refuse collection vehicle. The carrier can be loaded with the container where a cargo box is integrated with a loader as a unit, as well as the conventional container used at factories and construction sites. The feature of this vehicle is to be able to cope with loaders of different styles as well.<sup>\*2</sup> By loading different containers according to waste types and recycling purposes, the vehicle enables diversified and multipurpose collection and transport, as well as efficient operation of attachment/detachment of containers. By connecting the dedicated portable hydraulic unit to the container where the cargo box is integrated with the loader, stationary loading operation is available at construction sites for reduction of waste volume and temporary storage of waste.



Refuse collection vehicle with an attachable and detachable body



When connected to the dedicated hydraulic unit, it loads and unloads waste at a fixed spot

#### Development of Automatic Body Weighing System for Refuse Collection Vehicles

Development of Automatic Body Weighing System for Refuse Collection Vehicles  
By attaching the system to the refuse collection vehicle, the weight of individual waste loaded into the vehicle is weighed on the spot, as well as having available a highly accurate measure of the total weight of the loaded waste (with an error of about

±0.5%). In addition, the system enables indication of the loadage, the issue of slips, and an interface with a personal computer for management and calculation based on



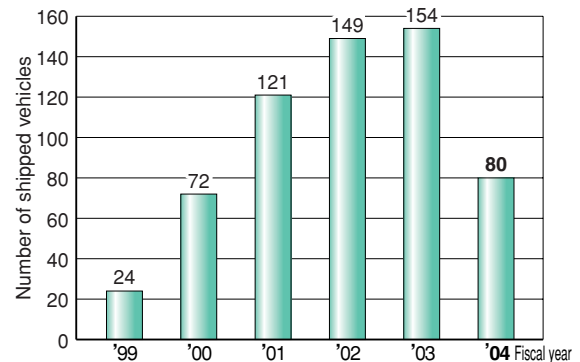
Introduction of the automatic body weighing system to the dumping discharging style refuse collection vehicle first in Japan

the data retained. This system is expected to make a contribution to promoting a reduction in waste.

#### CNG Refuse Collection Vehicles

The refuse collection vehicle that uses compressed natural gas (CNG) as its fuel for clean emission has come into wide use by making the most of its features.

#### ■ CNG Refuse Collection Vehicles Adopted



### Products Contributing to Recycling Society

#### Fuswtan, a Refuse Conveyance System for Skyscrapers

In high-rise office buildings that require further recovery of resources, efficient vertical conveyance of refuse has been demanded in recent years, rather than conventional manual conveyance by elevator. Fuswtan is a refuse conveyance and sorting system, where refuse input from each floor is left to fall without damage by controlling the speed of the fall with pressure control, and recyclable waste is sorted according to types for efficient resource recovery. In March 2005, the system was installed in the head office building of the Kansai Electric Power Company, the first in the Kansai region.



Head Office Building of the Kansai Electric Power Company  
Number of floors to be processed: From the second floor in the basement to fortieth floor

\*1. New refuse collection vehicle with an attachable and detachable body: The attachable and detachable body is composed of the carrier and a container to store waste.  
\*2. The loading method of the refuse collection vehicle is selectable from the rotary board style, pressing style, and others according to the type of waste.

## Subaru Wind Turbine Generator Systems

The wind power generation system contributes to the prevention of global warming by using natural energy for power generation. As one of the few domestic manufacturers, Subaru has commercialized the wind turbine generator systems for 40 kW and 100 kW, which were developed originally from our aircraft technology. Having state-of-the-art technologies, the systems are also friendly to the environment: easy to install, easy to start under low wind velocity, and low noise.



40 kW Wind Turbine Generator System  
(Installed at the Ashikaga Institute of Technology)

Subaru also participated in a variety of events and seminars to raise environmental consciousness and make contributions to local communities. Hoping for development of wind power generation, we also gave presentations at academic conferences and local government related meetings.



Giving a lecture at the secretariat of the National Municipal Governments Association for Promotion of Wind Power Generation

## Railroad Memorial Museum

The Railroad Memorial Museum was established to preserve the history of our railroad cars production after withdrawal from that business. The storage hall stores and exhibits representative cars FHI produced, including the rail bus\*1 for the Tarumi Railway manufactured in 1984. The material hall stores the history of wagons in materials by exhibiting photo panels of representative cars and their production processes together with commemorative products, as well as accumulated photos and materials from a line of cars. The Museum, which is open regularly, is utilized as a spot for communication among local residents and retired employees, along with a square having a green in front of the museum as a relaxation space for employees.



Railroad Memorial Museum

## Clean Enterprise

The Clean Enterprise tackled development of various running robot products, and actualized a cutting-edge elevator-interfaced cleaning robot system for conservation of energy and labor in cleaning buildings. In addition, we also provide an ozone deodorizing and purifying device applicable to various purposes.



Cleaning robot

### Degerming and Deodorizing System with Ozone Gas

The system to degerm and deodorize rooms using ozone gas has been delivered to healthcare facilities for the elderly requiring nursing care. Under the system, ozone gas generators are installed on the ceilings of the bedrooms, service stations, dining rooms, and corridors, as well as in the lavatories, in order to degerm and deodorize the air. The device installed on the ceiling has an air cleaning system, where air taken in through the activated carbon filter is degermed and deodorized with ozone before being released back into the room. It is possible to control the concentration of ozone at an optional level by computer.

Ozone has strong germicidal power, and produces good effects in degerming and deodorizing without leaving toxins. Since ozone is produced from air (oxygen), it is easy to handle anyplace. This system is expected to improve the indoor environments of such facilities.

### Robots Exhibited at the 2005 World Exposition, Aichi, Japan

At the EXPO 2005 Aichi, Japan, which started on March 25, the verification testing for prototype robots are implemented under the Project for the Practical Application of Next-Generation Robots by NEDO.\*2 At the site, visitors can watch the robots actually moving. FHI participates in the project by exhibiting four units of outdoor cleaning robots, the Subaru Robohiter RS1, and three units of garbage can carrying robots, the Subaru Robohiter T1. These robots are displayed at the Robot Station. In addition, the Subaru Robohiter RS1 robots automatically clean the main street, called the Global Loop (2.6 km in total length and about 21 m in width), and around the West Terminal during closing hours.



Left: Subaru Robohiter RS1  
Right: Subaru Robohiter T1

Subaru Robohiter RS1: By triangulation using GPS and a laser sensor, the robot recognizes the outdoor location, and cleans exterior floors with a brush on automatic drive.



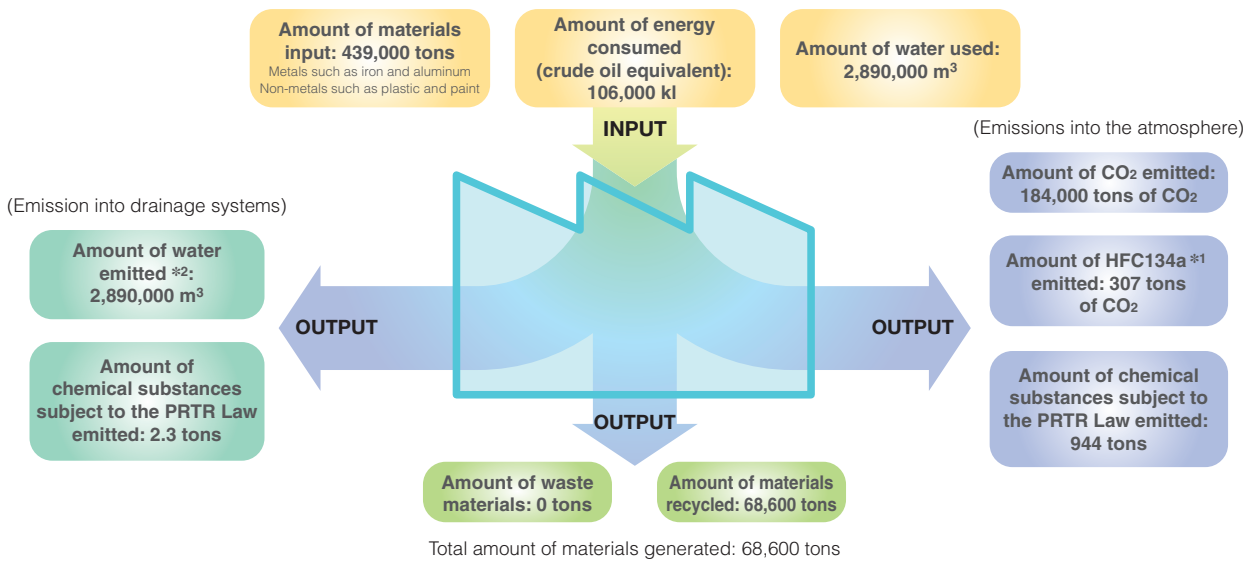
# Production

In 2004, FHI successfully achieved a zero level of waste material generation at all its plants. In addition, the Utsunomiya Manufacturing Division implemented a natural gas cogeneration system in February 2005 as a powerful measure against global warming. FHI actively commits to continuing its efforts to preserve the environment.

## Amount of Resources Input and Total Emissions at Plants

This figure shows the amount of resources used and emissions in fiscal 2004 at Gunma Manufacturing Division, our main automobile production plant in Japan.

### Amount of Resources Input and Emissions



## Reduction of Waste Materials

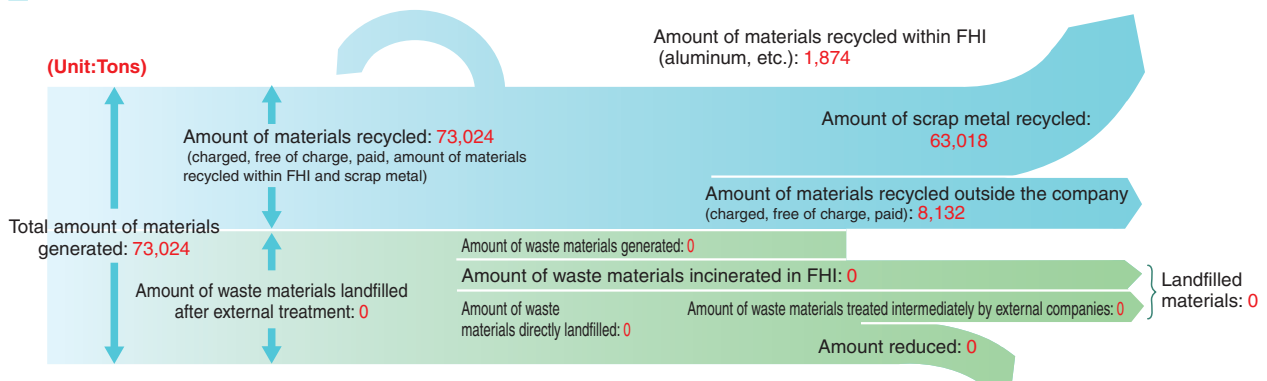
### Zero level of waste material generation achieved

FHI is actively committed to reducing waste in all its plants. At the Gunma Manufacturing Division,<sup>\*3</sup> the Utsunomiya Manufacturing Division,<sup>\*4</sup> the Industrial Products Company,<sup>\*5</sup> and Tokyo Office<sup>\*6</sup> zero emissions have already been achieved.

The total amount of materials generated, including scrap metal associated

with production activities in 2004, was 73,024 tons in total for all plants, and the materials generated were treated as the figure below shows. The amount of waste materials generated (waste materials treated intermediately by external companies plus waste materials directly landfilled) reached the zero level from 2004, due to progress in the measures for by-product sources and expansion of the recycling program. The amount of waste materials landfilled has been at the zero level since October 2003.

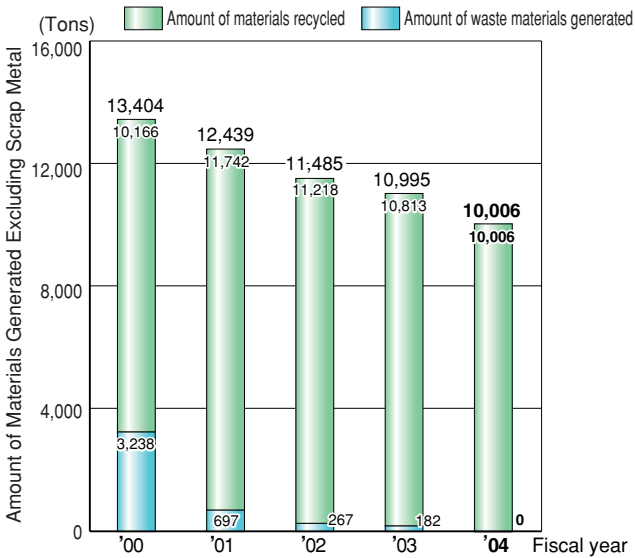
### Outline of Treatment of Materials Generated



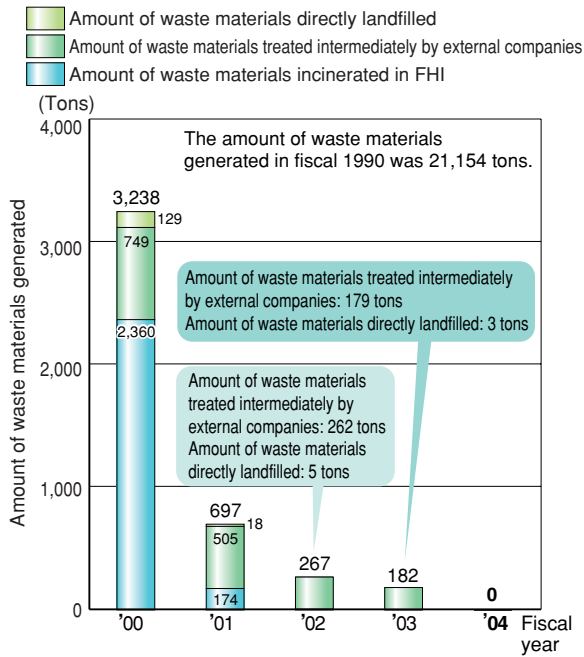
\*1. HFC134a emissions: Calculated by multiplying the amount emitted by the global warming potential \*2. Drainage Emissions: The same as the amount of the water used \*3. Gunma Manufacturing Division: Automobile development and manufacturing base \*4. Utsunomiya Manufacturing Division: The Aerospace Company and Eco Technologies Company's development and manufacturing base \*5. Industrial Products Company: Industrial product development and manufacturing base \*6. Tokyo Office: Automobile research and development base

The following chart shows trends in the amount of materials generated, excluding scrap metal, and trends in the amount of waste materials generated from fiscal 2000 to 2004. In fiscal 2004, zero level waste generation was achieved by promoting reduction in the amount of materials generated and by recycling efforts.

**Trends in Amount of Materials Generated Excluding Scrap Metal**



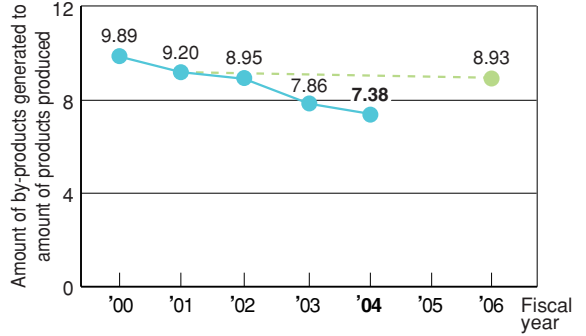
**Trends in Amount of Waste Materials Generated**



**Reducing the Amount of Scrap Metal in the Automotive Production Process**

As for metals, including iron and aluminum, the primary materials for automobiles, FHI is making efforts to generate as little scrap metal (by-products) as possible by changing the quality of materials and weight-saving design for products and improving the yield ratio during the production process, in order to improve automobile environmental performance and effectively utilize resources. The following chart shows the past records after fiscal 2000 and our future plan.

**Ratio of Amount of By-products Generated to Amount of Products Produced (Tons/100 million yen)**



**Column**

The 2004 Clean Japan Center Chairman's Prize\*1 in the Resource Recycling Technology & System Commendation Sponsored by the Ministry of Economy, Trade and Industry (METI)

FHI developed a recycling technology of paint sludge into raw material used for automobile vibration-proof parts or blast furnaces and constructed its recycling factory in the Gunma Manufacturing Division in May 2001, where effective recycling of paint sludge has been carried out (for details, refer to page 30 in the 2002 Environmental & Social Report).

For this technology and recycling performance, the 2nd

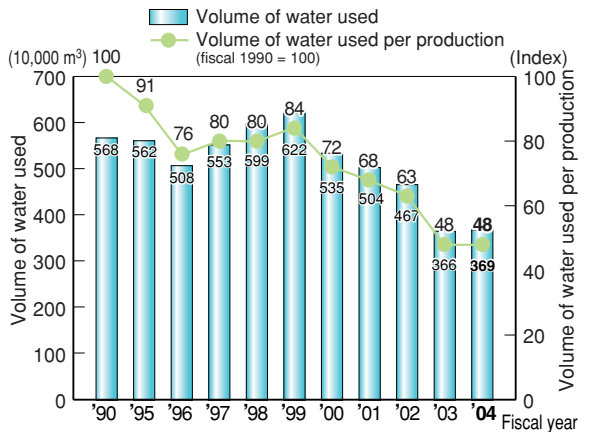


Manufacturing Engineering Dept. and the Manufacturing Environment & Safety Dept. in the Gunma Manufacturing Division were awarded the captioned prize.

**Reducing Water Consumption**

The volume of water used by FHI in fiscal 2004 was 3,690,000 m<sup>3</sup>. We will continuously implement resource saving measures in everyday operations as well as strict maintenance of water pipes in order to reduce water consumption.

**Trends in Volume of Water Used**



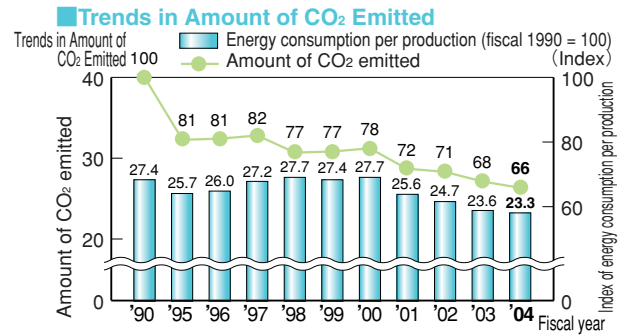
\*1. The Prize in the Resource Recycling Technology & System Commendation: a prize The Clean Japan Center awards prizes and citations under the commission of the Ministry of the Economy, Trade and Industry, with the aim of promoting the efforts of superior businesses that contribute to controlling waste generation and reuse.

## Prevention of Global Warming (Energy Saving)

Every FHI plant is committed to improving the energy efficiency of facilities to avoid waste or loss of energy. Following to the example of the Yajima Plant in Gunma Manufacturing Division, the Utsunomiya Manufacturing Division implemented a natural gas cogeneration system in February 2005.

In fiscal year 2004, our energy use stayed flat compared with the previous year to 134,700 kiloliters (crude oil equivalent) in total for all plants, mainly by continuous promotion of various measures, including improving energy consumption of production facilities and reducing air leaks, even though the number of vehicles produced increased by 3.4%, automotive production being our main business. For CO<sub>2</sub> emissions, the total amount decreased 1.5% compared with the previous year to 233,000 tons of CO<sub>2</sub> in fiscal 2004, owing to the use of natural gas for boilers and implementing the cogeneration system in the Utsunomiya Manufacturing Division. This is a 15.0% reduction compared with fiscal 1990 levels. In addition, energy consumption per production improved by 1.9% in comparison with the previous year, and a 33.6% reduction was achieved compared with the 1990 result.

The amount of greenhouse gases (methane, dinitrogen monoxide, HFC, PFC, sulfur hexafluoride) emitted, excluding CO<sub>2</sub>, was equivalent to 400 tons of CO<sub>2</sub>.



### Column

#### Winning the 2004 Prize of the Head of Kanto Economic Affairs Bureau, METI

##### By the Transmission Engineering Section of the Third Manufacturing Engineering Dep.

The Gunma Manufacturing Division worked on the improvement of parts cleaning machines which consume much energy in the transmission assembly process. This improvement was highly evaluated in the Energy Saving Excellent Case Symposium Kanto Conference sponsored by the Energy Conservation Center Japan because of the inclusion of many excellent technological elements, the availability of immediate effects, and the versatility applicable to many aspects and fields.

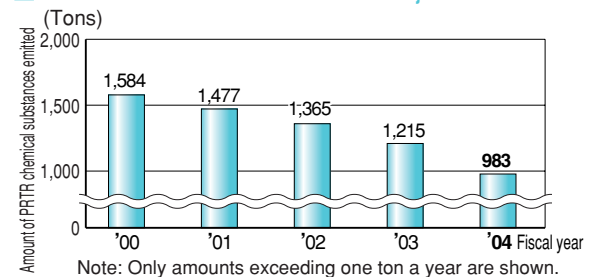


Mr. Nakamura in the Transmission Engineering Section received the prize. This activity was also presented in the national conference as an excellent case.

## Management of Chemical Substances (the PRTR Law)

In fiscal 2004, 19 chemical substances subject to the PRTR Law were used by FHI, as detailed below. The total use of such chemical substances was up 10.6%, compared with the previous year, but their release into the atmosphere and water was down 19.1%. Major reasons for this include a change in the cleaning thinner during the automotive painting process to one with less xylene, reduction in paints used, and improvement in the cleaning thinner collection rate.

### Trends in Amount of Chemical Substances subject to the PRTR Law



#### Totals of PRTR Chemical Substances Used in Fiscal 2004

(Only amounts exceeding one ton a year are shown. Substances marked with \* are Class 1 Designated Chemical Substances)(Unit: Tons per year, mg-TEQ per year (only for dioxins))

Code	CAS Number	Name	Amount handled	Amount emitted into atmosphere	Amount emitted into public water	Amount removed	Amount consumed	Amount eliminated by processing	Amount recycled	Amount treated at landfills
1	none	Soluble compound of zinc spelter	27.17	0	0.29	5.44	21.45	0	0	0
9	103-23-1	Bis (2-ethylhexyl) adipate	1.21	0	0	0	1.20	0.01	0	0
16	141-43-5	2-aminoethanol	3.45	0	0.28	0.03	0	3.14	0	0
30	25068-38-6	Polymer of 4, 4'-isopropylidene diphenol and 1-chloro-2,3-epoxypropnae (liquid)	17.05	0	0	2.47	14.39	0.19	0	0
40	100-41-4	Ethylbenzene	368.27	180.26	0	0	84.02	26.77	77.23	0
43	107-21-1	Ethylene glycol	1,623.88	0	0	0	1623.88	0	0	0
63	1330-20-7	Xylene	973.33	420.39	0	0.63	375.24	62.29	114.78	0
69*	none	Hexavalent chromium compounds	3.83	0	0	0.10	0.27	0.66	2.79	0
176	none	Organotin compounds	2.94	0	0.01	0.14	2.80	0	0	0
179*	—	Dioxins	0.24	0.24	0	0	0	0	0	0
224	108-67-8	1,3,5-trimethylbenzene	48.30	16.45	0	0	18.31	4.81	8.73	0
227	108-88-3	Toluene	1077.95	362.34	0	3.58	598.83	74.62	38.59	0
232*	none	Nickel compounds	6.70	0	0.30	4.91	1.50	0	0	0
272	117-81-7	Bis (2-ethylhexyl) phthalate	86.99	0	0	3.97	83.02	0	0	0
283	none	Hydrogen fluoride and water-soluble salts	3.91	0	1.01	2.89	0	0	0	0
299*	71-43-2	Benzene	26.20	0.02	0	0	26.18	0	0	0
309	9016-45-9	Poly (oxyethylene) = nonylphenyl ether	1.20	0	0.09	0.90	0.12	0.10	0	0
310	50-00-0	Formaldehyde	1.38	1.38	0	0	0	0	0	0
311	none	Manganese and its compounds	10.87	0	0.30	5.22	5.35	0	0	0
Total			4,284.63	980.85	2.27	30.28	2,856.54	172.58	242.12	0

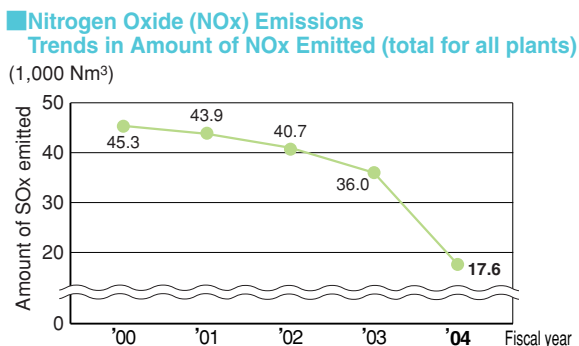
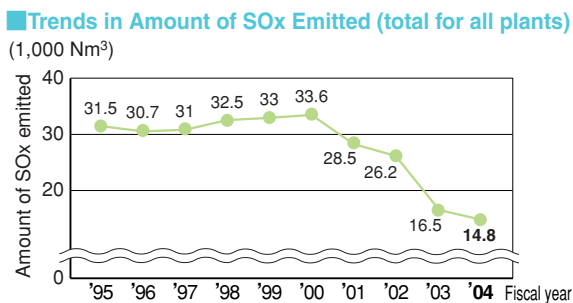
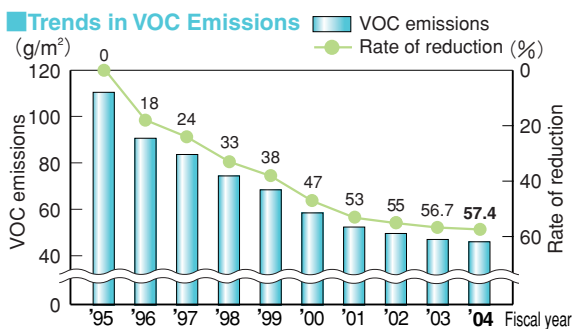
## Reducing Substances with Environmental Impact

### Reducing VOCs Generated in the Painting Process (Automobile Division)

In fiscal 2004, we reduced emissions of VOCs per unit of area painted on the vehicle body to 46.4 g/m<sup>2</sup>, thereby reducing emissions by 57.4% compared to fiscal 1995 levels. The major contributing factors were efforts to reduce the amount of use by changing the cleaning process in the color modification phase, shortening the cleaning time, and reducing the amount of thinner in the paints.

### Sulfur Oxide (SOx) Emissions

The amount of SOx emitted in fiscal 2004 was reduced compared with the previous year through such year-round efforts as introduction of a cogeneration system in the Yajima Plant in the Gunma Manufacturing Division, as well as the cogeneration system introduced and utilizing natural gas as fuel for boilers in the Utsunomiya Manufacturing Division.



### Reducing Use of HFC134a (Automobile Division)

To reduce atmospheric emissions from the vehicle manufacturing line, we have been minimizing leakage while pumping gas in air conditioners. As a result, we were able to reduce emissions by 95% compared to fiscal 1996 levels.

### Emissions of Nitrogen, Phosphorous, and BOD

The chart below shows the total amount of nitrogen, phosphorous, and BOD emitted, including drainage, from all plants in fiscal 2004.

Substance	Fiscal year	Nitrogen	Phosphorous	BOD
Amount emitted (tons per year)	2003	34	9	54
	2004	36	8	60

### Dioxin Emissions from Incinerators

Incinerators were shut down in the Gunma Manufacturing Division in December 2000 and in the Utsunomiya Manufacturing Division and the Industrial Products Company in September 2001. This means we shut down all incinerators in every FHI division, ending dioxin emissions from all sources.

## Green Procurement

### Automotive Business Unit

We held an explanatory meeting on our green procurement activities to suppliers in May 2005 to exchange ideas and to explain our efforts for the current year. We also sponsor the Subaru Safety Environment Association conference regularly every April to assist local suppliers in setting up their environmental management systems (EMS). By March 2005, the EMS had been completed by 283 out of 296 target suppliers in Japan.

We are using the International Material Data System (IMDS), a system that meets global standards to measure substances, including components, with an environmental impact, and we continue to assist our suppliers in inputting data.

### Industrial Products Company

We explained our Annual Plan for Environmental Efforts to 101 suppliers. In fiscal year 2003, all of the suppliers completed the establishment of an EMS; however, we will continue to work on activities for environmental preservation by maintaining the establishment of EMS and reducing substances with an environmental impact.

### Aerospace Company

In April 2005, we held an explanatory meeting, again requesting that they set up an EMS. In addition, we asked 257 suppliers to complete a questionnaire regarding the examination and reduction of substances with an environmental impact contained in their products.

### Eco Technologies Company

We sponsored a seminar about the establishment of EMS (Eco Action 21, promoted by the Ministry of the Environment) in February 2005 with suppliers to promote the reduction and elimination of substances with an environmental impact, as well as to improve the yield for raw materials.

### Green Purchasing

We have been promoting activities to select and use environmentally friendly products since October 2000. The ratio of environmentally friendly products purchased in the Gunma region reached 100% in fiscal year 2004. For fiscal 2005, the Head Office area will aim for a complete transition to use of environmentally friendly products, and the environmentally friendly products campaign will be promoted at each FHI company.

## Major Progress in the Prevention of Global Warming thanks to the Introduction of the Natural Gas Cogeneration System and the 6,030 kW Gas Engine Method!

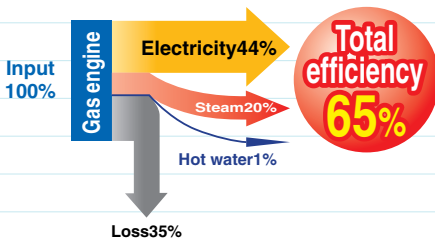
Prior to the enforcement of the Kyoto Protocol, on February 1, 2005, the Utsunomiya Manufacturing Division started to operate the 6000 kW class natural gas engine cogeneration system as the ultimate measure for prevention of global warming. This follows the introduction of the natural gas turbine cogeneration system at the Yajima plant of the Gunma Manufacturing Division in September 2002. The introduction of this system in other factories is now being considered in order to meet the unique energy demands of each factory.



The natural gas cogeneration system introduced at the Utsunomiya Manufacturing Division

### High Generation Efficiency

Compared to the efficiency levels of the other gas engine generators currently in use, this system's power generation efficiency of over 44% ranks as the highest in the world. When combined with the high-efficiency exhaust heat recovery equipment, the steam (0.8 MPa) recovery rate reaches 3.83 tons per hour, and the heat recovery rate reaches 21%, including hot water recovery.



### Effects of Introducing the Cogeneration System

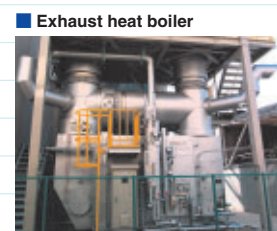
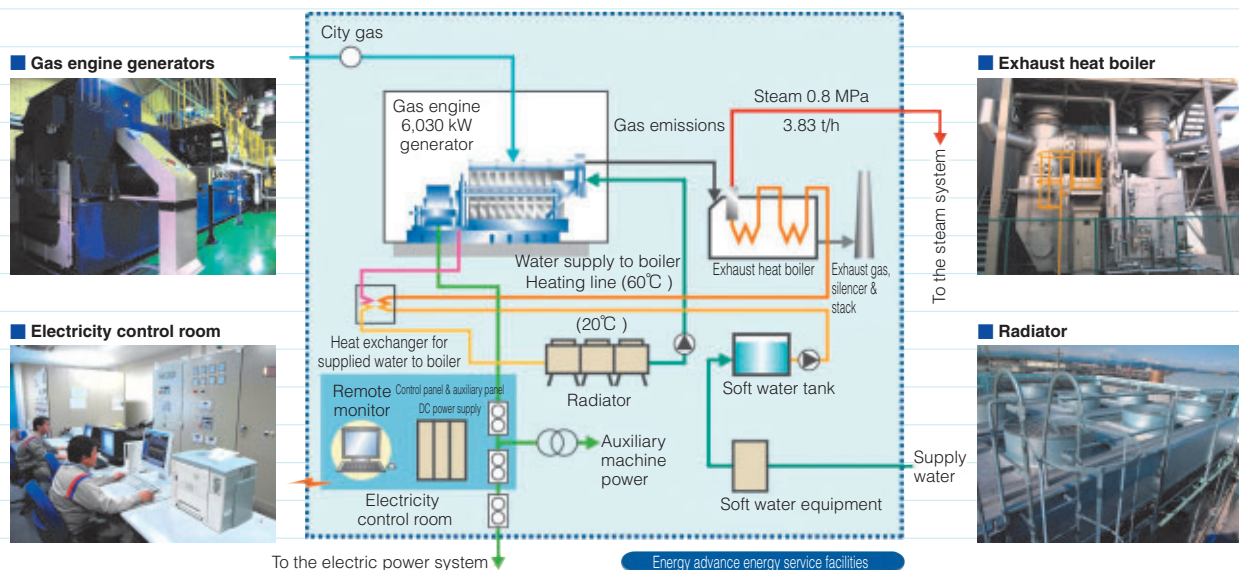
Since environmentally friendly natural gas is used as fuel, not only high power generation but also high energy-saving effects (1700 kl/year in crude oil conversion) and CO<sub>2</sub> emission reduction effects (7100 tons-CO<sub>2</sub>/year, equivalent to 20% of the 1990 emission amount) are anticipated.

### Features of the System

During installation of this system, we have given every consideration to neighboring communities and to protecting the global environment.

- Environmentally friendly design
  - ◆ An ignition engine (ignition plug system) that does not use heavy oil
  - ◆ Effective water-saving radiator cooling (compared with a cooling tower method)
  - ◆ Engine adopted anti-vibration structure. And noise insulation structures were arranged in the building and on the rooftop
  - ◆ Low exhaust emission (NOx) concentration (well within the regulated values)
- Uses a minimum of building space due to the compact design
- High reliability and power saving due to the 24-hour real-time remote monitoring system
- Upon introducing the high efficiency DSS (Daily Start, Daily Stop) operation system, we obtained subsidies from the 2003 Alternative Energy Project Support Program. Also, the adoption of the ESCO method\*1 enabled us to realize effective energy-saving policies without any initial investment.

### System Flowchart



\*1 ESCO method: The method according to which ESCO (energy service companies) provides supply customers who agree to introduce energy-saving policies with such comprehensive services as diagnoses, designing, construction, maintenance, and operation of buildings and facilities; help with procurement of project money, etc; carrying out retrofit work; and guaranteeing energy-saving effects from such projects. ESCO companies receive part of the profits resulting from customers' energy-saving results as a reward.

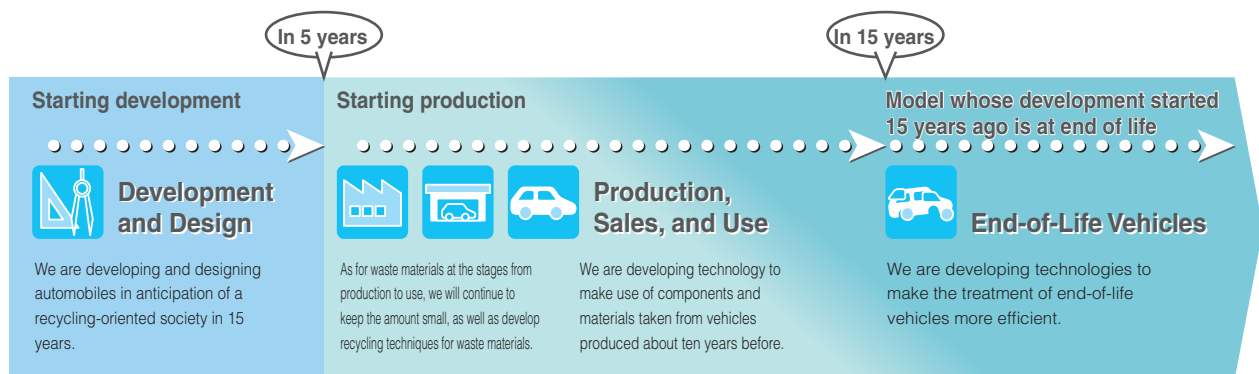
## Recycling

Automobile-related companies are obligated by the Law on Recycling End-of-Life Vehicles, which came into force on January 1, 2005, to share responsibility for recycling and to properly treat end-of-life vehicles (ELV\*<sup>1</sup>). FHI recognizes that the role of automobile manufacturers is important. In addition, we strive to comply with the regulations stated in Directive 2000/53/EC of the European Parliament and of the Council on ELVs effective since September 18, 2000.

### FHI's Fundamental Philosophy

As shown below, FHI will plan, study, and make efforts to decide what direction cars of the future as well as recycling technology should take, with the goal of further promotion of streamlining and realizing low-cost recycling based on the present situation and the future prospects of ELV.

#### Our Future Efforts



### Law on Recycling End-of-Life Vehicles

#### Directive 2000/53/EC of the European Parliament and of the Council on ELVS

The EU directive, to which FHI will respond step by step for automobiles introduced after July 1, 2003, includes the following five characteristics:

- ◆ Prohibition against using substances with environmental impact as much as possible
- ◆ Charge-free acceptance of ELVs
- ◆ Including recyclable ratio in requirements for type certificate
- ◆ Issuance of dismantling procedure manuals
- ◆ Regulation on recycling ratio

#### Law on Recycling End-of-Life Vehicles

The three characteristics of the Law on Recycling End-of-Life Vehicles:

- ◆ Automobile manufacturers must collect fluorocarbons, airbag-related products, and ASR produced, and then break down fluorocarbons and recycle the others.
- ◆ Expenses for recycling must be paid by users in advance as a recycling deposit.
- ◆ Tracking reports of ELVs after they are accepted from users until they are appropriately disposed of is required.

As for fluorocarbons and airbags, FHI established the Japan Auto Recycling Partnership in cooperation with other automobile manufacturing companies to establish a collection system to properly treat those items. As for ASR, \*<sup>2</sup> FHI established ART\*<sup>3</sup> (Automobile shredder residue Recycling promotion Team) jointly with eleven other automobile manufacturers. Moreover, as shown in the chart to the right, FHI established Automotive Recycle System of SUBARU (ARSS\*<sup>4</sup>) to respond proactively to the Law on Recycling End of end-of-Life Vehicles.

\*1. ELV: End of Life Vehicle

\*2. ASR: Automobile Shredder Residue: Residue left after shredding of the car chassis, sorted by metal type for recycling

\*3. ART (Automobile shredder residue Recycling promotion Team: Eleven companies including FHI, Nissan Motor Co., Ltd., Mitsubishi Motors Corporation, Mazda Motor Corporation, Suzuki Motor Corporation, Isuzu Motors Limited, Nissan Diesel Motor Co., Ltd., and Mitsubishi Fuso Truck and Bus Corporation, DaimlerChrysler Japan, Co., Ltd., PAG Import, and Ford Japan.

\*4. ARSS: Automotive Recycle System of SUBARU

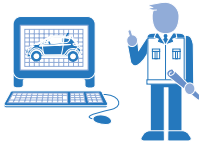
# Subaru's Car Recycling System

## The Process from New Product Development to Distribution

### Subaru Group

#### Development

- Design allows easy recycling
- Reduction of substances with environmental impact



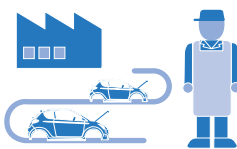
#### Research Experiments/Service

- Proper disposal of airbags
- Study of workability
- Measurement of man-hours



#### Production

- Recycling of waste generated from factories
- Utilization of waste material from other industries



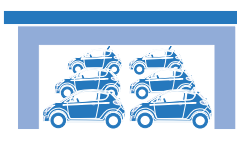
Information on car outfitting

Information on proper disposal of airbags

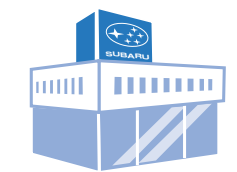
#### Distribution/ Subaru Customer Service Center



#### Shipment



#### Distribution



Issuance of Recycling Ticket



### ARSS (Automotive Recycle System of Subaru)

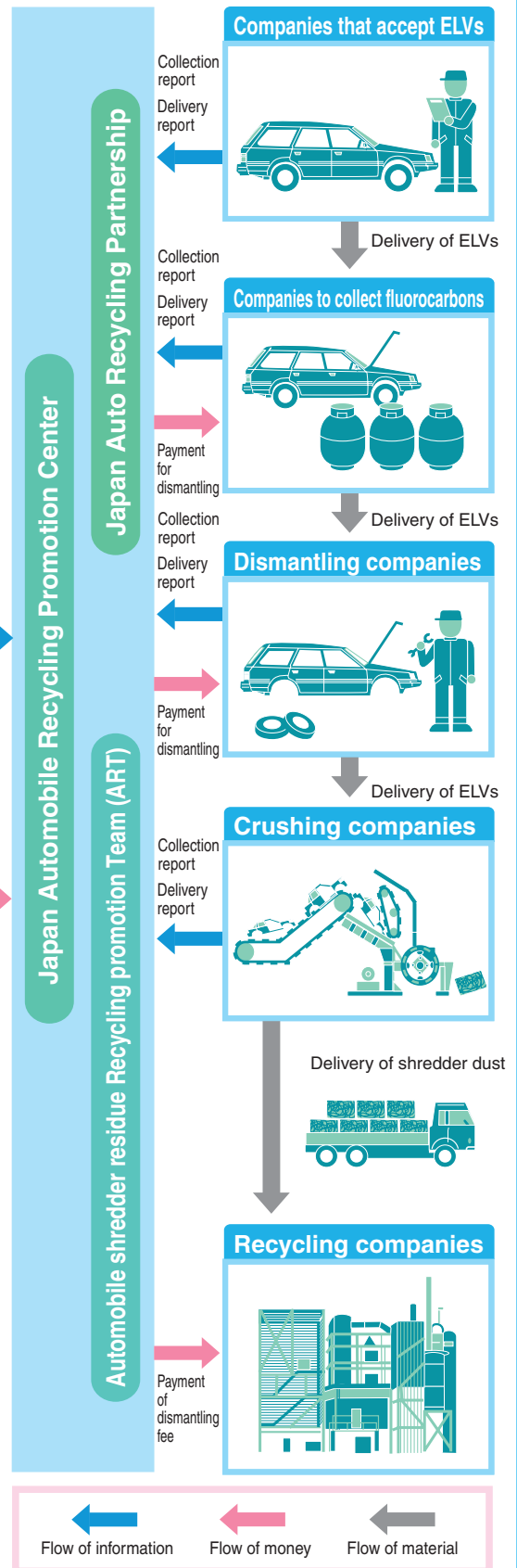
- Settlement of recycling charges/Information management of recycling charges
- Information management of vehicle maintenance
- Information management of proper disposal
- Information management of shipment data
- Information management of money on deposit and payments
- Information management of income and expenditures



Information of vehicle maintenance, shipment, and charges

Money on deposit for recycling

## Dismantling ELVs



## Design

### Promotion of Design Allows Easy Recycling

The Recycling Design Project Team researches easy-to-dismantle parts and vehicles and easily recycled parts structure and materials, gives feedback on the development and design of future vehicles, and prevents ASR from being generated.

### Recycling Market Research

The team members continuously visit dismantling companies, shredding companies, and waste disposers in various parts of Japan to exchange views on the current and future market trends for ELV treatment. The results are used to determine the principles for designing automobiles with due consideration for recycling and extract detailed subjects for future research.

### Efforts toward the Reduction of ASR

ASR includes a huge variety of materials and chemical substances used for manufacturing automobiles, and these materials consist of a complex mix. Consequently, the team members completely dismantled, disassembled, and analyzed vehicles to identify the reasons ASR is generated, and then created the ASR Calculation Guideline for calculating the amount of ASR generated from a vehicle. Next, the Recycling Design Guideline was drafted to prevent the generation of ASR. These guidelines are utilized for the development of Subaru automobiles.

### Efforts to Improve Recycle-ability

#### [Advances in Airbag Disposal]

Airbags and pretensioner belts significantly contribute to reducing shock to drivers and passengers during accidents. On the other hand, the vast majority of automobiles are put out of service with unused airbags. Automobile manufacturers are asked to dispose of these airbags and similar products under the Law on Recycling End-of-Life Vehicles, but team members are researching the optimal structure, including related components, to pursue a safer and easier way of activating airbags in automobiles and their subsequent disposal.

#### [Advances in Wire Harness Dismantling]

Most of the nonferrous metal, such as copper, contained in vehicles is already being recycled. However, it is thought that it can be collected more effectively if it can be removed before shredding the ELVs. Since wiring harnesses are installed everywhere in an automobile chassis, FHI is considering a structure that makes it possible to collect more nonferrous metal in a shorter time.



Wire harness dismantling experiment

#### [Easier Material Indication]

Most important is that the material in the parts can be seen easily when we recycle. FHI started to indicate the type of material on plastic parts in 1973 before guidelines for the industry were established. The indication was placed on the back side of the parts, but we thought if we could confirm the material type without dismantling the parts, we could avoid such wasteful situations as "we dismantled the part but it was the wrong one." FHI will change the indication position on the bumpers of all our vehicles, including the Legacy and the R2.



Now the material type can be seen without dismantling the bumpers. (Subaru R2)



An example of the material indication (">PP<": PP means polypropylene.)

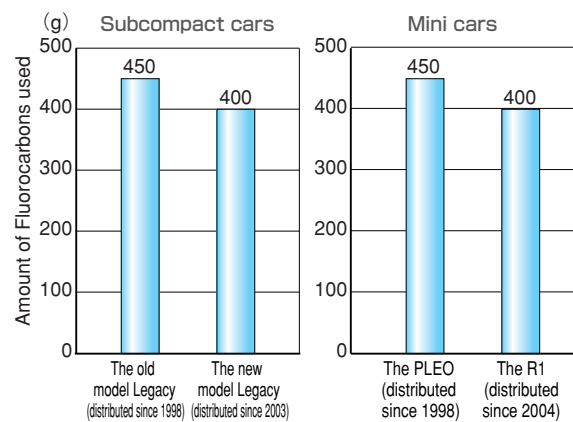
### Efforts to improve proper disposal

The Law on Recycling End-of-Life Vehicles also regulates proper disposal of substances with environmental impact, particularly fluorocarbons used as refrigerants in air conditioners, airbags, and similar products. Concerning future vehicle development, FHI recognizes it will be essential to produce vehicles that can be disposed of more easily.

### Reduction of Fluorocarbons

By 1994, FHI finished changing over from specified fluorocarbon CFC12 to HFC134a, a substitute CFC that does not harm the ozone layer. However, HFC134a is thought to influence global warming. We reduced the amount of HFC134a, and we are researching substitute refrigerants other than fluorocarbons.

#### ■ Reduction in the Amount of Fluorocarbons Used



#### Advances in Airbag Disposal

Since they are very easy to dismantle, FHI used disc-type inflators for passenger seat airbags to achieve easier disassembly of inflators.



## Reducing Substances with Environmental Impact

We are committed to curtailing our use of substances that have an environmental impact at an early date, not only to reduce the damage to the global environment, but also to remove the need for complicated recycling equipment and operations for ELV treatment. We think it is necessary to reduce substances that have an environmental impact; consequently, we are making efforts to promote the recycling of parts and materials.

### Introduction of IMDS

IMDS (International Material Data System) is a database system developed by a European automobile manufacturer that FHI is using to manage substances that have an environmental impact and for calculating recyclable ratios. After introducing IMDS in 2003, Subaru started to research a variety of vehicles. We will continuously strive to ensure that our efforts are successful to meet the requirements for 2008. In that year, the recycling rate potential will be of vital importance in Europe.

### Reducing the Use of Lead

New model compact automobiles use no lead in the wheel balancers, which reduces the amount of lead used to less than one-tenth the 1996 industry average.

### Responding to the Voluntary Activity Plan of the Japan Automobile Manufacturers Association, Inc.

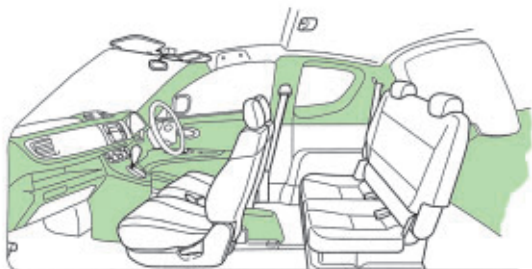
In accordance with "Substances with Environmental Impact—Voluntary-activity by the Japan Automobile Manufacturers Association, Inc." (issued by JAMA in December 2002), we will promote the reduction of mercury, cadmium, and hexavalent chromium.

## Production

### System for Grade Integration of PP Plastic

Previously, a great deal of waste was created in our materials manufacturing, compounding, and parts mold-processing procedures since we had different mixes of PP materials depending upon the parts. In order to keep such waste to a minimum, we promoted the integration of PP grades. Each integrated material for bumpers and interior parts has been applied to most vehicle parts. We are also going to further improve efficiency by making plastic materials easier to recycle.

#### ■ How Integrated Materials for Interior Parts are Used (R1)

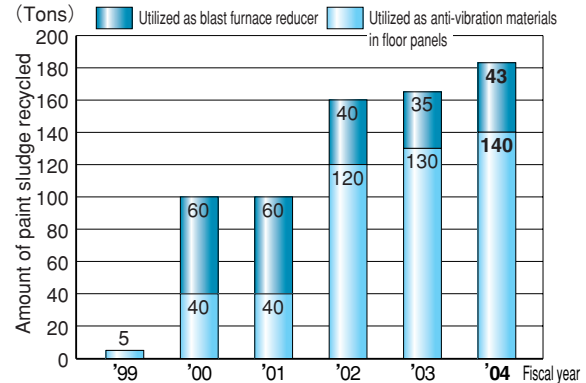


Green parts: Integrated materials are used in these parts.

## Recycling Waste Materials (Paint Sludge\* 1)

We found a way to recycle paint sludge from the paint factory. We are recycling paint sludge as anti-vibration materials for automobile floor panels and as blast furnace reducer. We are also considering recycling it for other uses. As for recycling paint sludge, the 2002 Environment Report, "Paint Sludge Recycling Plant" (see p. 30) explains the process in detail.

### ■ Amount of Paint Sludge Recycled

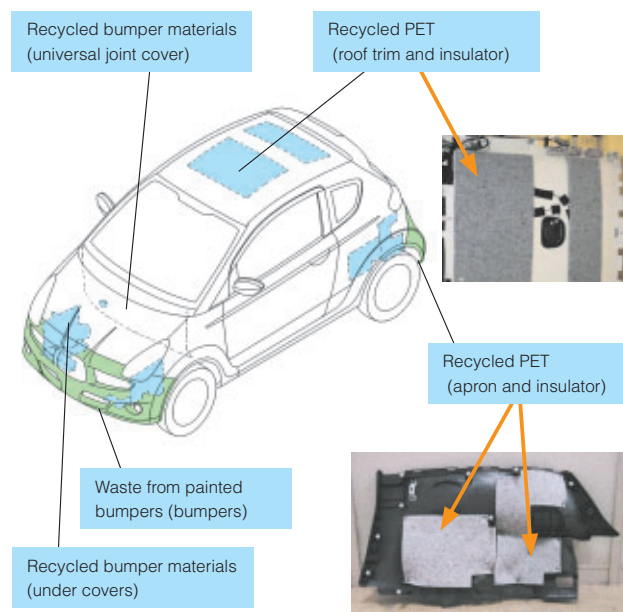


## Utilizing Other Industrial Wastes

### Continuous efforts

FHI will actively utilize recycled materials generated by industries other than the automobile industry. For waste materials generated in production plants, we are also promoting development of technology so that we can recycle and utilize the waste materials from automobile production.

#### ■ An Example of Utilizing Recycled Materials in the New Minicar Model R1



\*1. Paint sludge: Waste produced during the surfacer and the top coat in the car painting process. (Waste paint that did not adhere to the automobile body)

## Sales and Services

### Environmental Efforts by Subaru Dealers

FHI is working on environmental issues with Subaru dealerships as the Subaru team.

- ◆ Comply with environmental laws and regulations, and further contribute to the environment of the local community.
- ◆ Continue to improve the environmental management systems to create environment-friendly dealers

All dealers of the Subaru team are working on environmental compliance activities under the above-mentioned mottos. Since the simultaneous kick-off of the activities in December 2003, each sales company has set up a model base and carried out thorough inspections of environmental compliance for further improvement. In the summer of 2004, the Subaru team held workshops at seven locations throughout Japan, promoted voluntary activities, deepened the level of awareness, and aimed to expand the activities to the nationwide sales bases.

Currently FHI is continuing the thorough inspections of environmental compliance and improvement activities in the nationwide sales bases for consummation by 2005. Also, to deal with the Automobile Recycle Law enforced in January 2005, FHI has encouraged dealers to participate in the



seminars sponsored by the government and other concerned organizations, prepared the *Procedural Manual for Subaru Dealers*, and held a workshop in each sales region in the fall 2004.

Procedural manual concerning the Low on Recycling End of Life Vehicles \*1



Environmental compliance through thorough inspections and improvement activities

Regarding the environmental management system, Aomori Subaru CO.,Ltd. and Fuji Subaru CO.,Ltd. obtained ISO 14001 Certification in December 2004 and in January 2005, respectively. Now the certification has been acquired by total four Subaru teams, including Chiba Subaru Inc. and Iwate Subaru Inc.

### Using Reassembled and Used Parts

FHI has worked on environmental issues in line with nationwide Subaru dealers as the Subaru team. As one of our efforts, we are using recycled (that is, rebuilt) and used parts. Using rebuilt parts\*2, such as engines, transmissions and water pumps, was started in collaboration with the related manufacturers in 2004. Dealing with used parts, such as exterior panels, lamps, windshields and wheels, was started in collaboration with existing used parts network groups in April 2004.

#### Using Rebuilt Parts

Designated items
Engine
Automatic transmission
Manual transmission
CVT (Continuously Variable Transmission)
Alternator
Starter
ECU (Engine Control Unit)
Water Pump

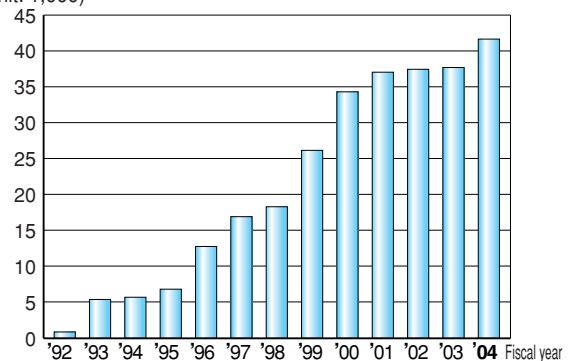
### Disposal

FHI established an in-house system in 1973 to identify the materials used in plastic parts, ahead of the timetable for industry guidelines for the establishment of such systems. This system is very helpful when the company collects scrapped bumpers to recycle for use in other parts of vehicles. In fiscal 2004, we collected 41,700 scrapped bumpers from all over Japan, which is a 1% increase from the previous year.

The scrapped bumpers were recycled for use in other parts of Subaru as shown in the graph below,

#### Progress Made in Scrapped Bumper Collection

(Unit: 1,000)



#### Parts Produced from Scrapped Bumpers

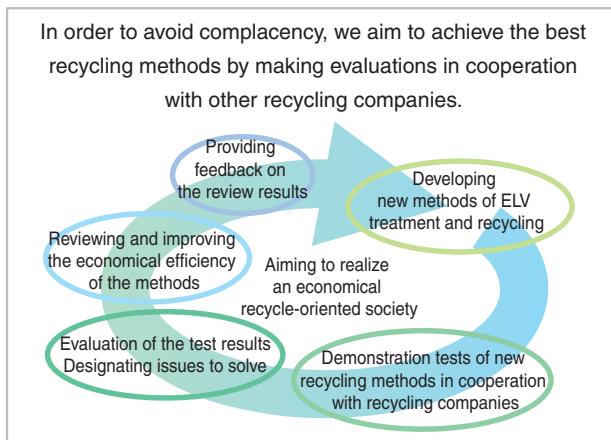
Model	Parts
R1, R2, Pleo	Universal joint cover, undercover
Legacy	Under spoiler, battery pan

\*1. This guidance describes, along with actual examples, the recycle charge deposit practice when purchasing a new car and the contractor's takeover practice at a dealer's shop.

\*2. Rebuilt parts (based on used parts called "core") mean parts that are dismantled, cleaned, reassembled, any worn or damaged interior components being replaced with used components, and then resold. Reused parts mean parts that are taken from a used automobile, cleaned, refurbished, and resold. Recycled parts consist of those two categories.

## Disposal of End-of-life Vehicles

FHI is working with companies that process end-of-life vehicles to conduct research and development for the improvement of the recycling processes. The results of joint development are made public in order to contribute to the realization of a recycling-oriented society. We are also a manufacturer that develops and sells recycling equipment as well as being an automobile manufacturer. We will continue to make a strong effort to develop more effective systems in the field of automobile recycling technology. The main technologies that we are working on include one for recycling auto window glass, one for preventing noise when the airbags activate in vehicles, and one for dismantling ELV.



### Developing Auto Window Glass Recycling Technology

Most of the automobile shredder residue from ELVs is landfilled, but FHI believes that removing and recycling auto window glass, which currently accounts for approximately 20% of the shredder residue, will contribute significantly to waste reduction and bring certain advantages.

[Advantages of glass recycling]

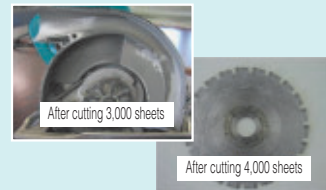
- ◆ ASR generation can be reduced  
⇒Of the 3Rs (reduce, reuse, and recycle) of ASR, reduce is achieved to the maximum extent.
- ◆ Actual recycling efficiency can be increased  
⇒The year 2015: We will increase the actual recycling efficiency up to more than 95%

- ◆ Recyclers' burden can be mitigated  
⇒By removing glass from an ELV, the press, shearing, and crushing machines used for ELV recycling will wear less, thereby reducing maintenance costs

FHI started to study a method for side-door glass recycling into glass wool in January 2000 and developed devices for side-door glass collection, windshield crushing, and inner-film separation, thus established a reuse technology for these types of glass into automobile glass. Since April 2003, we have been expanding the amount of glass collected and reused in cooperation with 12 dismantlers and 3 sheet glass providers. Through the 2003 demonstration tests, the quality of glass collected by 12 dismantlers proved to be a certain level. So we proceeded in 2004 with cost and infrastructure maintenance to incorporate the collection, recycling, and reuse jobs into monthly routines. Based on the condition that one dismantler can collect at least 8 tons per month (windshield: 5 tons, side-door glass: 3 tons) and constantly put them into a sheet glass kiln, we determined the sustainable quality as a dismantler and the acceptable quality as a sheet glass provider. Thus more practical glass recycling activities have been promoted.

### Windshield Collection Method

Glass is cut with a circular saw and collected.



Tool durability has been improved by adopting a sawtooth with carbide tip" and changing the physical-safety cover part into a bearing.

### Side-door Glass Collection Method

Glass is crushed with a hammer and dropped into a dish underneath.



Foreign material mixing prevention is improved.

### Quality Improvement of Collected Glass

The quality of collected glass has been improved remarkably by adopting a side-door glass collection tool and by educating dismantlers.

#### The Amount of Foreign Materials Included in Collected Side-door Glass (Unit: ppm)

	First test in 2001	Second test in 2003	Third test in 2004
Iron	112.2	28.0	0.6
Aluminum	none	none	none
Inflammables	31.3	15.6	4.8
Gravel	0.6	0.6	none

#### Tool Manufacturers

Company Name	Location
Makita Corporation	Anjo City, Aichi
Lobtex Co., Ltd.	Higashi-Osaka City, Osaka

#### Dismantling Companies

Company Name	Location
Car Steel Co., Ltd	Maebashi City, Gunma
Nagano Automobile Recycling Center Co-op	Tobu Town, Nagano
Ibajihan Recycling Center Co., Ltd.	Minori Town, Ibaraki
Tsuruoka Co., LOtd.	Oyama City, Tochigi
Metal Recycling Co., Ltd.	Kawashima Town, Saitama
Showa Metal	Koshigaya City, Saitama
Keiaisha Co., Ltd.	Yokohama City, Kanagawa
Renaissance Co., Ltd.	Kimitsu City, Chiba
Nippon Auto Recycle Co., Ltd.	Toyama City, Toyama
Sanomaruka Co.	Fujinomiya City, Shizuoka
Shinsei Co., Ltd.	Mihara Town, Osaka
Mitsui Bussan Raw Materials Development Co.	Sakai City, Osaka

### Efforts to Activate Airbags in Vehicles

#### - Soundproof Device -

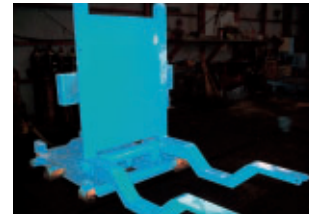
FHI is working to develop a soundproof device to reduce noise in the surrounding area, as well as to improve working conditions, in order to be able to remove airbags without dismantling the chassis. Taking both eco-friendliness and workability into consideration, we made a six-piece lead-free soundproof sheet that can cover a car chassis to muffle the sound. By improving working conditions inside the vehicles, the sound escaping from a car muffled with the sheet can be lowered by 10 decibels when the airbag is inflated.

### Overturning Machine for Dismantling: the "Tentomushi" (Ladybug)

An ELV can be anchored on the two arms of this machine and tilted or lifted so that the parts can be removed safely and effectively. The removed parts are recycled or reused. Underneath lies a workbench, which receives waste liquid (cooling water, engine oil residue, etc.) to prevent spills from dropping to the floor.



Parts can be removed easily and effectively by tilting the ELV.



The body of the "tentomushi" used for dismantling an ELV.

#### Column

#### FHI Won the JSAE Exposition Award at the JSAE Spring Forum

Our research paper on ELV Glass Recycling Technology won the JSAE Exposition Award at the 2004 JSAE Spring Forum. This prize has been set up to encourage revitalization and improvement of academic expositions. FHI was evaluated for developing state-of-the-art technology with quality and economy balanced in this field.



Takaaki Ohtake, then manager of the Material Research Department, received the JSAE Exposition Award at the JSAE 2004 Spring Forum.

# Logistics

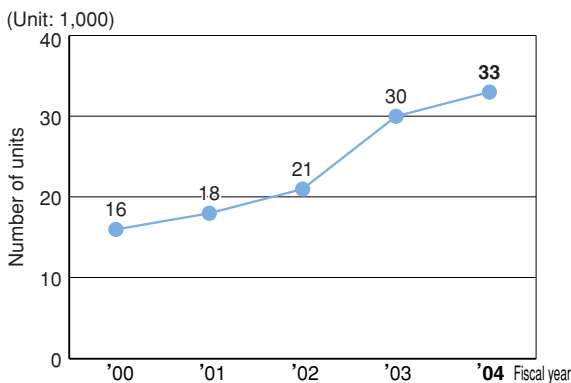
FHI is working to improve transportation efficiency, reduce packaging materials, and promote recycling, as well as reduce the environmental burden in all areas of logistics, including the transportation of completed automobiles, service parts, and overseas knockdown parts. Until recently the transportation of completed automobiles was mainly done by Subaru Physical Distribution Company, one of our affiliates, and the shipping of parts assembled in overseas plants was done by Subaru K.D. Logistics Co., Ltd., which is also one of our affiliates. These two companies merged on July 1, 2004, into a new company, Subaru Logistics Co., Ltd.

## Reducing the Environmental Burden of Transporting Completed Automobiles

### (The efforts of Subaru Logistics Co., Ltd.)

When the loading ratio of the car carrier increases and the number of car carrier trips decreases, the environmental burden of transporting completed cars can possibly be reduced. Subaru Logistics Co., Ltd., aimed at joint transportation of completed cars with other companies in the same trade. In 2004 the total number of cars carried by joint transportation (commissioned to and from other companies/our company) nearly doubled to 32,884 units compared with the figure in 2000.

### Progress in joint Transportation Volume



Subaru Logistics Co., Ltd., is conducting questionnaires on future environmental issues along with other companies in the same trade, while encouraging affiliated transportation companies to mount idling-stop equipment on their car carriers and improving drivers' eco-driving awareness. In 2004 the number of cars transported to our domestic dealers increased by 4.2% compared with that of 2003 whereas CO<sub>2</sub> emissions increased by only 1.0% compared with the previous year.\*1 Henceforward we will promote transporting a mixture of compact cars and standard-sized cars to enhance loading efficiency.

## Reducing the Environmental Burden of Transporting Service Parts

### (Efforts of the Subaru Parts Center)

Subaru Parts Center (Ohta, Gunma Pref.) obtained ISO 14001 certification in March of 2005. Packaging specifications for bulk transportation to overseas factories have been revised to reduce

the use of cardboard and wood. For example, the packaging material for splashguards was changed from cardboard to stretched film, thereby reducing the use of cardboard by 1,100 kg.



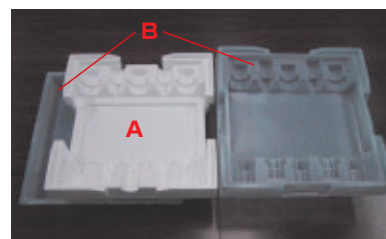
Before improvement (cardboard packaging) After improvement (stretched film packaging)

Also, the use of exclusive reusable cardboard boxes for parts transportation to domestic dealers has facilitated minimization of the amount of cardboard. In 2004, Ohta Distribution Center also began this practice, further reducing the use of cardboard material by 1,200 kg.

## Reducing Packaging Materials for Overseas Knockdown Parts

### (Efforts of Subaru Logistics Co., Ltd.)

The coverage of ISO 14001 certification accredited to Subaru Logistics Co., Ltd., was extended at the time of the ISO 14001 regular assessment in February, 2005 to cover the Parts Distribution Center (the former Subaru K.D. Logistics Co., Ltd., which was engaged in packaging and transporting knockdown parts to foreign factories). Here is an example of the packaging for one of the knockdown parts, camshafts, bound for North America. Camshafts require special packaging care because they are precision parts. We improved the packaging materials of these parts and succeeded in recycling and reuse by means of a combination of polystyrene molds (A) and foam-powder adhesive-proof trays (B); this method is now patent-pending. Until now, polypropylene-made packages were disposed of in landfills; however, polystyrene-made



Improved camshaft packaging material for transportation to North American factories

packages can be recycled to make lightweight concrete, etc., while trays, provided they are cleaned, can be reused after being returned to Japan.

\*1. CO<sub>2</sub> emissions: This is calculated by multiplying the numerical value (in ton kilometers)—which is the distance to the dealer multiplied by the weight of the completed car—by the CO<sub>2</sub> emissions coefficient of the transport method.

## Activities of Affiliated Companies

### —Domestic Companies—

FHI periodically convenes Environmental Problems Meetings with six of our affiliated companies\*1 (excluding Subaru dealers) that produce a significant environmental burden in their manufacturing or transport businesses; these meetings are part of the actions of the Domestic Affiliated Company Subcommittee, part of the Production Environment Committee, which itself is one of the subcommittees in the FHI Corporate Environment Committee. We guide and support the establishment of each company's environmental management system to reduce environmental burden, which has brought results such as waste reduction and energy saving.

### Domestic Affiliated Company Subcommittee

These meetings have been held in the respective affiliated companies. The employees of other companies can learn from each other through presentations about each company's environmental preservation activities and see their plants. Meetings were held at Fuji Robin Industries Ltd. in May 2004 and at Fuji Machinery Co. Ltd. in September, 2004.



Subcommittee meeting held at Fuji Robin Industries Ltd. (May 2004)



Subcommittee meeting held at Fuji Machinery Co. Ltd. (Sept. 2004)

Also, in April of 2004 FHI had a liaison meeting with four relatively large affiliated companies not related to manufacturing and started working on environmental preservation activities as a group.

### Examples of Activities by Affiliated Companies

In 2004, FHI's Environmental Risk Assessment and Green Procurement activities were expanded to cover affiliated companies. In addition to the Domestic Affiliated Company Subcommittee, environmental assessment study sessions were held at Gunma and Tokai districts in November 2004 in order to ensure environmental risk reduction and proactive pollution prevention. Also, since it is important for employees to understand the maintenance and control issues at their facilities, study sessions were held at each company regarding the concept of environmental risks and evaluation points. In 2005 each company will promote improvement activities based on the results of the current activities.



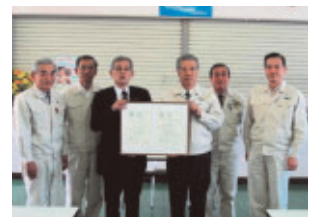
Gunma district study session at Ichitan Co.,Ltd. (Nov. 2004)



Tokai district study session at Fuji Robin Industries Ltd. (Nov. 2004)

### All Subcommittee members certified to ISO 14001

In 2004, Yusoki Kogyo K.K., Kiryu Industrial Co. Ltd., and Subaru Logistics Co., Ltd., obtained ISO 14001 certification. This means all six companies in the Domestic Affiliated Company Subcommittee have already obtained ISO 14001. Each company is currently working on improving PDCA (Plan-Do-Check-Action) based on EMS.



Subaru Logistics Co., Ltd.

On July 1, 2004, Subaru Physical Distribution Company and Subaru K.D. Logistics Co., Ltd. merged and were renamed Subaru Logistics Co., Ltd. The company considers the environment and resources essential and continues to develop a clean, eco- and consumer-friendly logistics system as well as enhancing work quality throughout the process of logistics service.

This company started collecting scrap bumpers of Subaru cars in collaboration with FHI in 1996 as one of our special activities. Since then this activity has been expanded nationwide, and Subaru Logistics Co.,Ltd undertakes the whole process from the collecting stage to the recycling stage, leading to effective waste reduction and reuse of resources. These bumpers are processed into pellets and supplied to the parts makers to reuse in a variety of interior and exterior parts for Subaru cars, including trunk trims.

Kiryu Industrial Co., Ltd., provides customers with high-quality services to satisfy their diversified needs in living and business by using its unique technology and know-how in the following businesses: Special fitting work of compact cars based on the specifications of Subaru cars; recycling of functional parts such as engines and



Kiryu Industrial Co., Ltd.

transmissions; and distribution of car spare parts and equipment. This company also recognizes the importance of the environment and seeks to do its part in making consumer and environmentally friendly goods and services.

## Actual Achievements of the Six Domestic Affiliated Companies in Fiscal 2004

### Achievements in Environmental Accounting and Environmental Performance

Regarding the environmental burden reduction activities in the manufacturing stage, although environmental costs increased by 13%, economic benefits increased by 35% compared with the previous year. Though waste generation and energy consumption increased accompanying the increase in production output, the quantity of landfill waste has been reduced by almost half, and energy consumption per production was reduced by 18%. FHI is advancing toward its goal of zero emissions.

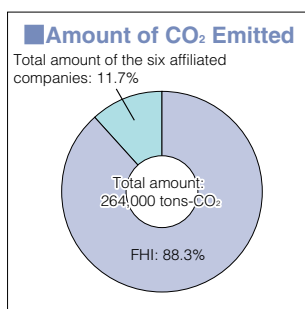
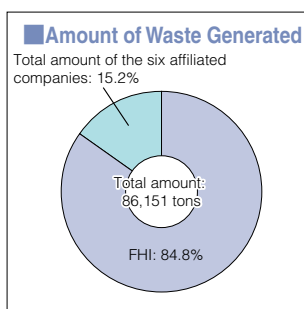
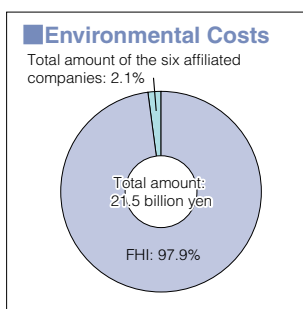
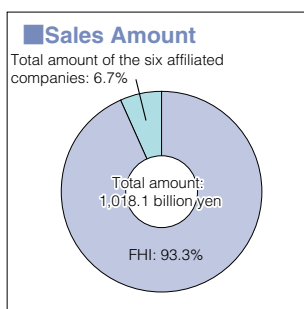
As for PRTR chemical substances, both the amount handled and the amount released and transferred have been reduced. Henceforth FHI will aim at further reduction of hazardous chemical substances.

As for ISO 14001 certification, Yusoki Kogyo K.K., Kiryu Industrial Co. Ltd., and Subaru Logistics Co., Ltd., the company resulting from the July 2004 merger of Subaru Physical Distribution Company and Subaru K.D. Logistics Co., Ltd., were all accredited, and now all six companies in the Domestic Affiliated Company Subcommittee have achieved ISO 14001 certification. Based on the results of the Environmental Risk Assessment started in 2004, FHI will continue efforts for environmental risk reduction and proactive pollution prevention in 2005.\* 1

Environmental costs				Economic Benefits			Environmental performance (quantitative benefits)						
Cost category [ ] indicates a cost category in the Ministry of Environment Guidelines	Amount (million yen)			Details	Amount (million yen)			Item	Unit	FY 2004	FY 2003	FY 2002	
	FY 2004	FY 2003	FY 2002		FY 2004	FY 2003	FY 2002						
Costs of Reducing Environmental Burden (production stage)	Waste treatment and recycling, waste reduction [①-3]	150	129	140	Reduced costs through waste control and changes in treatment methods, profit from the sales of materials obtained from recycling	158	132	96	Total amount generated	ton	13,126	12,787	14,692
	Energy conservation, CO <sub>2</sub> emissions reduction [①-2]	29	33	37	Reduced energy cost	33	9	29	Quantity of waste generated	ton	992	914	1,307
	Pollution control such as wastewater and exhaust gas treatment [①-1]	99	85	79	Reduced costs from replacing cleaning agents (chemical agents)	0	0	0	Quantity of landfill waste	ton	194	374	401
Total costs to reduce environmental burden		278	247	256	Total savings from environmental burden reduction	190	141	125	Amount of energy used (crude oil equivalent)	Kℓ	18,402	17,857	18,562
Investments costs	Education, ISO 14001 related matters, investigation, and others [③]	67	61	64	—	—	—	—	Energy consumption per production	Kℓ/100 million yen	30.37	36.91	43.48
	Product research and development [④]	89	110	112	—	—	—	—	CO <sub>2</sub> emissions	ton-CO <sub>2</sub>	30,926	30,271	31,548
	Total investment costs	156	171	176	(Total investment benefits) currently N/A	0	0	0	PRTR chemicals	Amount handled	ton	116	150
Other costs	Cost increment for material changes, measures for end-of-life products, social contribution, environmental measures, and others [②⑤⑥⑦]	17	18	41	Reduced costs by changing raw materials	0	0	0	Amount released and transferred	ton	72	89	70
	Virgin material procurement costs reduced by using recycled materials	—	—	—	—	—	—	—					
	Total other costs	17	18	41	Total other benefits	0	0	0					
<b>Total cost</b>	<b>450</b>	<b>436</b>	<b>472</b>			<b>190</b>	<b>141</b>	<b>125</b>					

Note 1. Cost categories in the Ministry of the Environment Guidelines  
 ① Business area costs  
 ①-1 Pollution control costs  
 ①-2 Global environmental conservation costs  
 ①-3 Resource circulation costs  
 ② Upstream and downstream costs  
 ③ Management activity costs  
 ④ Research and development costs  
 ⑤ Social activity costs  
 ⑥ Environmental damage costs  
 ⑦ Other costs

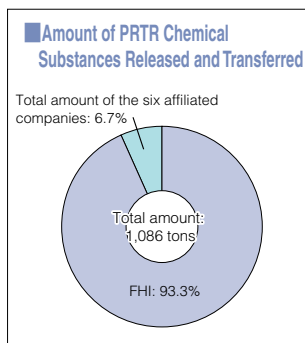
Note 2. PRTR chemicals: Only amounts exceeding one ton a year at each PRTR applicable manufacturing division were calculated (or those exceeding 0.5 tons a year for specific Class 1 Designated Chemical Substances).



### PRTR

Substances marked with the \* are specific Class 1 Designated Chemical Substances (Unit: Tons per year)

Code	CAS No	Chemical Substance Name	FY 2004		
			Amount handled	Amount released	Amount transferred
40	100-41-4	Ethylbenzene	4.80	3.25	0.08
63	1330-20-7	Xylene	47.05	30.02	0.68
68	none	Trivalent chromium compounds	5.12	0.26	0
69*	none	Hexavalent chromium compounds	7.10	0	0
227	108-88-3	Toluene	50.33	37.08	0.86
283	none	Hydrogen fluoride and its water soluble salts	1.50	0.18	0
<b>Total</b>			<b>115.90</b>	<b>70.79</b>	<b>1.62</b>



\*1. Calculation of the results for the 2004 fiscal year (April 2004–March 2005) is based on FHI Environmental Accounting Guidelines. For FHI Environmental Accounting, refer to pages 15–16.

# Activities by Affiliated Companies

## —Overseas Companies—

FHI and five affiliated companies in North America (SIA, SOA, RMI, SCI, SRD)\* have established the North American Environment Committee (chairman: Mr. Oikawa, president of SIA) under the Corporate Environment Committee, and the fourth and the fifth meetings were held at SIA in Sept. 2004 and in Feb. 2005, respectively, with the attendance of Mr. Suzuki, senior executive vice president and chairman of the Corporate Environment Committee. Through such a framework of group activities, global environmental efforts such as reporting environmental conservation activities at each company and discussing future plans have been carried out.

SCI, a sales base in Canada, and SOA, a sales base in the U.S.A., established the environmental management system and obtained ISO 14001 certification in January and February 2005, respectively.

### Overview of Activities in the Five North American Companies

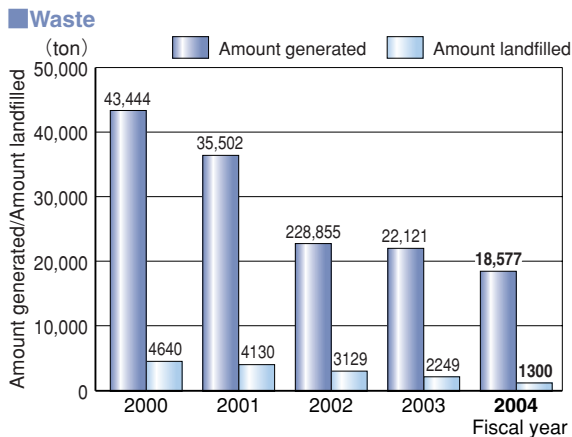
SIA, a production base of Subaru automobiles, and RMI, a general-purpose engine assembly factory, obtained ISO 14001 in 1998 and 2003, respectively. Both companies have already addressed environmental protection activities. The five North American companies have minimized waste generation and reduced the amount of waste directly landfilled by recycling waste in the factories and offices. Their energy saving measures include the following: retrenchment of unnecessary energy consumption by reviewing the machinery running hours; prevention of air leaks in the factory; cut-down of excessive lighting; and monitoring the temperature of air conditioners. Furthermore, they have worked on reducing the use of water in the offices by saving and recycling.



North American Environment Committee

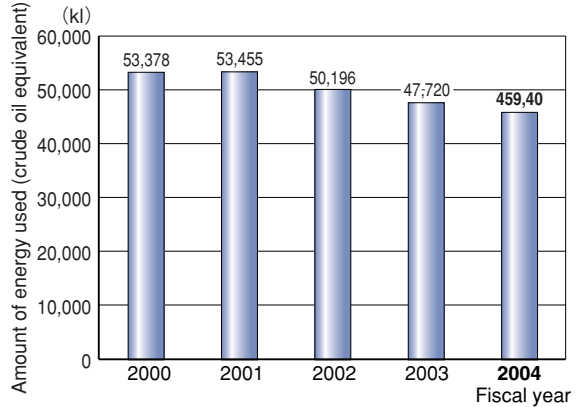


Senior Executive Vice President Suzuki is inspecting the paint sludge recycling plant



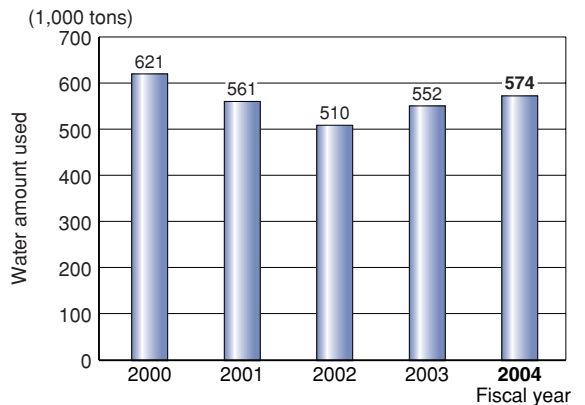
Note: 2000 & 2001: actual performance by SIA alone  
 2002: total of SIA, RMI and SRD  
 2003 & 2004: total of five companies

### Amount of energy consumed



Note: 2000 & 2001: actual performance by SIA alone  
 2002: total of SIA, RMI and SRD  
 2003 & 2004: total of five companies

### Water amount used



Note: 2000 & 2001: actual performance by SIA alone  
 2002: total of SIA and SRD  
 2003 & 2004: total of five companies



## Environmental Accounting of North American Companies

The North American group companies tentatively introduced environmental accounting in 2004 to deal with environmental issues more effectively. The following table shows the total amount of environmental costs for manufacturing, sales and research of SIA, SCI, and SRD aggregated in accordance with the guidelines of FHI's environmental accounting. The grand total of environmental protection costs stands at 1.082 billion yen (breakdown: environmental burden reduction costs: 736 million yen; investment costs: 303 million yen; and other costs: 16 million yen.) Unit: 100 million yen

Item	Description	Environmental cost
1. Costs to reduce environmental burden	Costs for reducing environmental burden caused in the production stage, waste disposal costs, energy saving costs, and pollution prevention costs	7.36
2. Investment costs	Costs for reduction of environmental impacts anticipated in the future and costs for R&D, education, ISO 14001 maintenance and management	3.3
3. Other costs	Costs except for abovementioned and cost for environmental-purpose social contribution	0.16
Total cost of environmental protection	Total of 1, 2, and 3	10.82

Note: The details of environmental effects are omitted due to the problem of accuracy.

## Environmental Activities in Individual Companies

### Reducing Waste

SIA has established a policy to bring to zero the amount of waste directly landfilled (for details refer to page 51.) SOA and SCI have replaced conventional wooden crates with repeatedly used plastic containers for packing reassembled engines and transmissions. SOA included its parts center in the coverage of ISO 14001 certification. This parts center has adopted returnable pallets for parts transportation to the vicinal retailers, recycled unnecessary used cardboard and reduced waste. RMI completely switched to returnable cardboard boxes for parts transportation. SRD, which had so far purchased oil and other liquids in small-sized containers (disposed of at landfills after use), changed them to reusable large-sized containers.



Container for rebuilt engine



Reusable large-sized container



Returnable pallet (SOA)

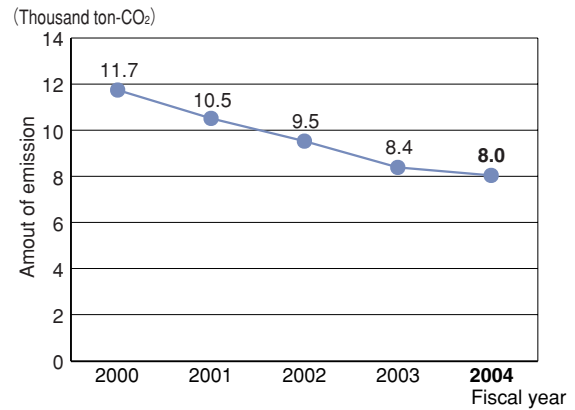


Returnable cardboard box (RMI)

## Preventing Global Warming

SIA curbed unnecessary energy consumption by reviewing the running hours of the furnace in the paint factory, reducing CO<sub>2</sub> emissions by 3,145 tons. Also, air leak prevention and excessive lighting reductions have been addressed in the factory.

### CO<sub>2</sub> emissions at SIA



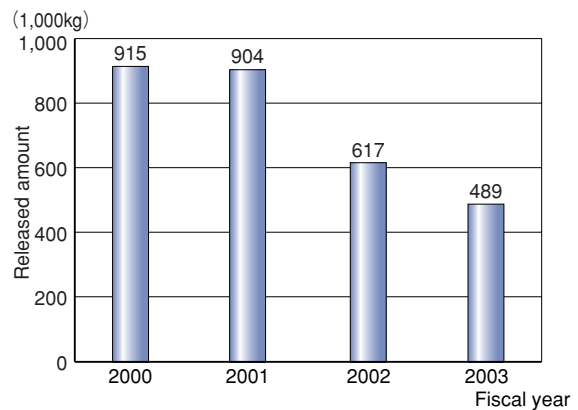
### Reducing Amount of Water Used

RMI has installed a water recycling system used for general purpose engine pressure cleaning inspections. SOA has mounted infrared water conserving faucets in every bathroom in the head office to save water. Thus each company has made efforts to reduce water use.

### Chemical Substance Control

SIA is now replacing conventional paint with a low HAP (hazardous air pollutant) content paint as one of the measures for mitigating impacts to the ozone layer. The use of TRI (toxics release inventory) chemical substances was decreased from 1.96 kg per vehicle in 2002 to 1.82 kg in 2003. Therefore, total emissions were decreased as shown in the following graph.

### Total amount of TRI chemical substance released



## Reducing Environmental Risks

SIA has taken measures against spills of gasoline or antifreeze liquid pumped into storage tanks or into paint solvent recovery facilities from tankers and reduced environmental risks. More specifically, the perimeter of the tanker stop position was covered with concrete so that liquid spills would not spread, while valves (these can be closed when liquid is being filled) were installed to prevent the spilled liquid from flowing into the storm drain.



The concrete cover installed in front of the paint solvent recovery facility



The pond within SIA premises where geese hatch every year

## Social Contribution Activities

### Subaru Cherry Blossom Festival (SOA)

The cherry trees, which were sent to Philadelphia from the Japanese government in 1926 as a symbol of the U.S.-Japan friendship, bloom beautifully every year. To perpetuate the friendly spirit, a Philadelphia Cherry Blossom Festival was held by the Philadelphia Japan-U.S. Association in 1998. Since then the association continues to present 100 cherry trees every year, aiming at planting 1,000 cherry trees by 2007. SOA has held a one-week Subaru Philadelphia Cherry Blossom Festival in front of these newly planted cherry trees every spring since 2003, contributing to the introduction of Japanese culture.



Poster of Subaru Philadelphia Cherry Blossom Festival

### Support through Fund-Raising Campaign

SIA helped the March of Dimes (a medical-related volunteer group), the American Cancer Society, the American Heart Association, and other groups with their regional fund-raising campaigns. RMI extended a helping hand to Hudson Hospital starting last year. SCl gave monetary support to Tread Lightly

(actual eco-experience activities). SOA donated a Subaru car to environmental outreach educational programs for children in New Jersey, Pennsylvania, and Delaware, sponsored by the



Subaru car in full-swing in the Environmental Conservation Program

New Jersey Academy for Aquatic Sciences (headquartered in Camden, New Jersey).

## Commendations

### SIA Received the Prize from the National Registry of Environmental Professionals<sup>\*1</sup>

SIA was recognized for its outstanding activities in waste reduction and recycling with an Environmental Excellence Prize in the category of "Solid hazardous waste" in the 2004 Environment-related Commendation (applied to activities from May 2003 to April, 2004) hosted by the National Registry of Environmental Professionals, a NGO group. SIA recycled 93%



Staff is pleased with prize winning

of its total waste generated in 2003. In the same year, its waste generation decreased by 4% compared with 2003.

### SRD Received the 2004 Overall Environmental Excellence Prize from Washtenaw County

SRD (in Ann Arbor, Michigan) won the most famous environmental prize in Washtenaw County, the Overall Environmental Excellence Prize (applied to NGOs and companies in Washtenaw) from the Washtenaw County Drain Commissioner's Office for SRD's activities in recycling chemical substances, discharging clean water, eliminating underground fuel tanks, preventing spill from fuel storage tanks, etc. The awarding ceremony was held during Pollution



Prevention Week in September 2004.



\*1. The National Registry of Environmental Professionals: A nationwide body, consisting of more than 20,000 members, which certifies environmental professionals. They are accredited by the ICAB (International Certificate Accreditation Board) and recognized by the Department of Energy, the Environmental Protection Agency, and other organizations in the U.S.A.

## SCI

SCI (Subaru Canada, Inc., a Subaru sales base in Canada) obtained ISO 14001 certification in January, 2005 together with the corporate dealer, SOMI (Subaru of Mississauga). SCI considers that reducing environmental burden and assuming responsibility for environmental improvement will bring the next generation a better life. In light of the currently growing environmental awareness of the people of Canada, it is



SCI head office receiving the certificate. SCI chairman, Mr. Osakabe holds the certification (the left)



most important to carry out eco-friendly business. SCI's better implementation of EMS will also be useful for its business operations.

SOMI, the dealer, also obtained ISO 14001 certification

## Environmental Management Policy of SCI

Subaru Canada, Inc., is a committed corporate citizen dedicated to protecting the earth's natural resources, the local and national environment, and human health. This commitment extends further than just meeting the stated environmental laws and regulations; it encompasses the integration of sound environmental practices in all of our business decisions. Specifically, Subaru Canada, Inc., is committed to:

- ◆ Complying with all environmental laws, regulations, and other requirements related to our business activities.
- ◆ Implementing effective pollution prevention systems that protect our air, water, and land.
- ◆ Implementing effective improvement activities related to energy, waste, and water reduction.
- ◆ Establishing a corporate-wide program to reduce, re-use, and recycle in all areas of our corporation.
- ◆ Implementing a culture of continual improvement as it relates to all business activities that have an impact on the environment.

## Activities in 2004

In 2004, SCI accomplished 3.5% growth in the number of sales despite a 34% decrease in energy consumption and a 64% decrease in the amount of waste landfilled compared with 2003. Major activities included the use of returnable containers for rebuilt engines and transmissions, recycling of massive cardboard, and installation of the recycling boxes for paper, plastic, bottles, etc. in the office.

## SOA

SOA (Subaru of America, Inc., the sales base of Subaru automobiles) obtained ISO 14001 certification, which covers both the head office (in Cherryville, New Jersey) and the parts distribution center in New Jersey, in February, 2005.



SOA Head Office



Kunio Ishigami,  
Chairman, President and CEO

"Environmental activities are very important for global business operations. It is especially essential that each individual employee participate in these activities and play his/her role." (Excerpt from the greeting in the Management Conference)

- ◆ Conservation of natural resources by reducing, reusing, and recycling materials.
- ◆ Continuous improvement of our Environmental Management System (EMS).
- ◆ Creation of employee awareness and commitment to SOA's Environmental Philosophy and Policy
- ◆ Working with SOA's business partners to improve their operational impact on the environment.

## Activities in 2004

The parts distribution center proactively worked on the cardboard recycling started in January, 2004 and recycled about 82 tons in a year. Also the use of returnable containers for rebuilt engines and



Used cardboard boxes no longer required are compressed by a compactor in the parts distribution center and delivered to recycling companies.

transmissions increased. The SOA head office carried out various programs, installing containers for trash separation for recycling, saving electricity during air conditioner use, and saving water by mounting infrared water conserving faucets into bathrooms.

## Environmental Management Policy of SOA

SOA understands its responsibility to the global environment, society at large, our customers, our distribution network, and our employees. As we conduct our business operations into the future, we commit to establishing and maintaining an effective environmental management system that extends further than just meeting the stated environmental laws and regulations and that encompasses the integration of sound environmental practices in all of our business decisions.

We commit to the following:

- ◆ Compliance with all environmental laws and regulations and other requirements related to our business activities.
- ◆ Implementation of effective pollution prevention systems that protect our air, land, and water.



Environmental News posted in the cafeteria.

SOA reduced energy consumption by 10.1% compared with 2004.

### SIA's efforts for Resource Circulation

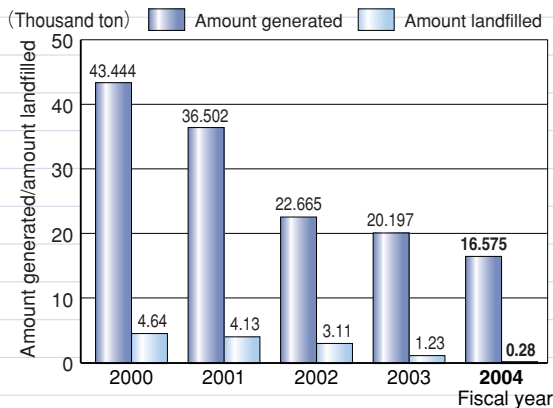
SIA obtained ISO 14001 as early as in 1998 and has since carried out active environmental protection activities. In particular, it has worked on minimizing consumption of resources to reduce as much of the environmental burden as possible by curbing waste generation, proper disposal, and cyclical use of resources. SIA started the project with professional recyclers in 2001 to increase the amount of recycled material while decreasing the amount of direct waste landfill. The transition of the amounts of waste generation and direct landfill is shown in the following graph:

### Summary of Resource Circulation in SIA

SIA deals with waste generated in the course of business as shown in the table below.






Waste is separated as minutely as possible. The waste, including moisture, is dried for the next disposal process to minimize the environmental burden in the following processes. For example, wastewater sludge, dirty paper, and cloth are disposed of in an incinerator, and then used as an energy source for urban areas and local industries in Indianapolis. In 2004, SIA directly landfilled 284 tons of waste, but after the recycling system was established, the amount of direct landfill dropped to zero since May 2004.

**Total amount of waste generation in SIA**  
**Total amount of direct landfill**



Generated waste	Reduce	Reuse	Recycle
Trim caps	Separated	Returned to vendors and reused	
Paint solvent	Collected	Reused in-house after adjusting composition	
Paint sludge	Dried		Outsourced for recycle to plastic material
Wastewater sludge	Dried		Thermally recycled
Dirty paper, cloth	Separated		Thermally recycled
Steel, aluminum	Collected and Separated		Recycled to raw material

### Examples of disposal in

Generated waste	Trim caps	Paint solvent	Paint sludge
Examples of disposal	<p>Approximately 28.1 tons of caps from transmissions, engines, etc. were returned to suppliers. Also Styrofoam etc. (approximately 51.3 tons) was returned to suppliers for reuse.</p>  <p>Various types of caps are gathered by employees on the sidelines.</p>	<p>The collection system*1 for the solvent used in the painting process was installed in 2002. In 2004 approximately 489,000 liters of thinner was quality-governed and reused after being distilled.</p>  <p>Paint solvent recycling system</p>	<p>In May 2004, a paint sludge drier was put into operation. Paint sludge includes approximately 80% of moisture, which decreases to 5% after being dried in the drier. Previously, paint sludge with high water content was outsourced to a recycler for disposal, but now the drying process minimizes the amount of water. The recycled sludge is reused as raw material for parking lot bumpers.*2</p>  <p>Paint sludge drier</p>   <p>Paint sludge is recycled into parking lot bumpers</p>



# Social Report

Fuji Heavy Industries Ltd. (FHI) has the philosophy that *we must be responsible for not only directly meeting customer needs in our operations by providing products and services but also that we must take responsibility throughout all our corporate activities, which includes compliance with laws and regulations, environmental protection, human rights protection, and consumer protection.*

In addition, we think that the economic and social/human aspects of corporate activities cannot be separated, and thus *taking social responsibility should be fundamental to our operations.* So we would like to be *a better corporate citizen* who continuously contributes to the sound, sustainable development of our society, which includes customers, local communities, shareholders and investors, affiliate companies, stakeholders, and employees.

# Compliance

In order to become a company trusted and respected by society, FHI makes group-wide efforts to ensure compliance with laws and regulations. Our basic compliance policy is provided for by the Compliance Regulations as follows.

“We regard corporate compliance as one of the most important tasks for management. We strongly recognize that our company-wide efforts toward regulatory compliance make for a solid management foundation, and therefore, we carry out open and fair corporate activities in compliance with social norms, as well as all laws and regulatory requirements and internal regulations for corporate activities.” (From our Compliance Regulations)

## Fundamental Philosophy

### Corporate Code of Conduct and Conduct Guidelines

FHI has established a Corporate Code of Conduct (see page. 7) and Conduct Guidelines (23 items in total) as the standards to ensure compliance with laws and regulations. These are described



Compliance Manual

in detail in the Compliance Manual, which all officials and employees carry in order to ensure legal and regulatory compliance in their daily actions.

### Compliance Declaration

In order to maintain strict compliance, it is essential for corporate leaders to declare the stance personally. In May 2003 FHI's president, Kyoji Takenaka, issued a declaration entitled “Toward further enhancement of company-wide compliance activities.” In the message, he declared that he would take the initiative to ensure that he and all officials and employees comply with laws and regulations in order that FHI will continuously grow to become a company that has earned society's trust.

## System and Administration

### Compliance Regulations

FHI established the Compliance Regulations in 2001 after approval of the board of directors. These regulations contain basic compliance policies, which provide for the system, organization, and operational methods related to corporate compliance.

### FHI's Compliance System/Organization and Administration

A Compliance Committee has been established as a company-wide committee organization to promote corporate

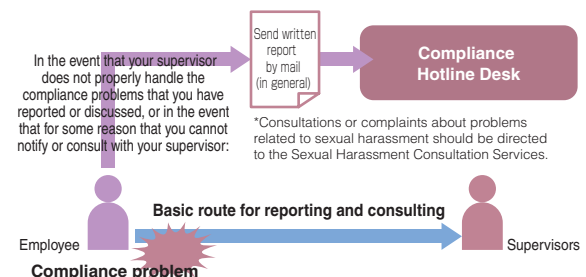
compliance. The committee conducts deliberations and discussions, renders determinations, and exchanges information on key compliance issues. The Senior Executive Vice President, Mr. Suzuki, who is responsible for the Legal Affairs Department serves as chairperson of the committee, and the committee members are essentially officials with executive power, responsible for management of the respective departments. Every year, each department devises a compliance implementation plan (compliance program) to enhance corporate compliance and takes the initiative to advance continuous and systematic implementation activities.

### Compliance Hotline System

FHI established the Compliance Hotline System as a communication route bypass, providing employees with a direct route for reporting any detected problems with compliance, in February 2003. Within the organizations, the basic flow for reporting, communications, and consultations is supposed to be from the bottom up. However, if the communication flow does not work well under some circumstances, the Hotline System can be used as a supplementary communication route.

The Compliance Hotline Desk that was set up in the company receives the report directly from the employee and then investigates and handles the matter. The name and department of the employee who reported the matter are processed under strict rules of confidentiality, unless the employee agrees otherwise. Due consideration is given to ensure that the employee does not suffer any disadvantage by reporting compliance problems.

#### Compliance Hotline



## Fiscal 2004 Results of Compliance Activities

### Examples of FHI Efforts to Entrench Corporate Compliance

#### Providing Compliance Education and Training Programs

Compliance education and training must be provided continuously and systematically so that each official and management-level employee maintains a high level of awareness of compliance and ensures compliance with laws and regulations in his or her daily actions.

In fiscal 2004, we offered an educational program of compliance and legal training through a variety of educational courses organized by our legal and personnel and training departments. More than 4,000 officials and employees in our group companies took these courses throughout the year.

In addition, as voluntary activities for each department, we provided workshops on laws and regulations with deep repercussions for each respective department, such as labor laws, the Antimonopoly Act, and the Road Trucking Vehicle Law, as well as compliance workshops using the booklet titled "100 Case Studies of Compliance Issues." The booklet presents easy-to-understand questions and answers for cases that could be happening around employees, such as issues that must be handled carefully, issues that are difficult to judge, and matters that employees should be aware of as individuals and as members of society in their everyday work situations. These booklets were distributed to officials and employees of the group companies. The 100 Case Studies have also been introduced to companies outside our group companies as requested, in an effort to make a contribution to raising the awareness of compliance with laws and regulations in society.



100 Case Studies of Compliance Issues

#### Providing Compliance Information and Educational Activities

Our legal, environmental, and personnel departments actively distribute a wide variety of information to help raise awareness of corporate compliance. Such information includes an explanation of laws and rules and information on revised rules, as well as examples of incidents and accidents involving corporate ethics either within or outside the company.



Compliance Card

We continued to provide information in more accessible ways, e.g. via company newsletters and e-mails entitled "Compliance Information" and Legal Information E-mail Magazine, in a continued effort to educate our employees.

From 2004, we have designated

October as the company-wide Compliance Month in response to guidelines for the Corporate Ethics Month specified by the Japan Federation of Economic Organizations. During the compliance month in 2004, we distributed portable cards containing a message from the compliance committee chairperson to our officials and employees, introduced e-learning over the intranet, and invited presentations from lecturers so that we could entrench the awareness regarding compliance.

#### Our efforts for Personal Information Protection

In fiscal 2004, we made preparations for the Personal Information Protection Act, which came into full force from April 2005. In response to enforcement of the act, we enhanced our previous efforts to protect personal information under our codes of conduct by reviewing our internal system and regulations and announcing our personal information protection policy (privacy policy). For domestic Subaru dealerships, because they directly handle a large amount of our customers' personal information, we managed to thoroughly overhaul our internal system for each dealer and prepared and made use of the Personal Information Protection Handbook for Subaru Dealer Staff to help each staff member properly understand personal information protection.



Personal Information Protection Handbook for Subaru Dealer Staff  
Compliance with Antimonopoly Act

#### Compliance with Antimonopoly Act

We provided workshops to pursue strict compliance with the Antimonopoly Act by publicizing the Antimonopoly Act Handbook that we newly prepared to explain instructions for business operations in detailed and concrete manner, in addition to the Antimonopoly Act Compliance Manual that we revised in fiscal 2003. On top of this, we expanded the scope of our workshops on the Act against Delay in Payment of Subcontracts, which was revised in April 2004, to include other companies in our group in an effort to ensure and preserve fair trade.

#### Activities toward Group Compliance

In order to ensure compliance with laws and regulations, not just FHI but also all the other companies in our group must join forces and work in harmony. For this reason, we sponsor compliance training at each of our affiliated companies and domestic Subaru dealers and provide handbooks and textbooks in an effort to promote group-wide compliance with laws and regulations.

# Relationship with Customers

FHI strives to provide products with good environmental and safety performance and actively promotes the development of human-friendly, impressive products, aiming for harmony between automobiles, people, and society. In order to guarantee that customers are fully satisfied, FHI also values communications with each of our customers and makes Subaru team-wide efforts to meet customer expectations.

## Creating Safe Automobiles

### The fundamental philosophy behind "Creating Safe Automobiles"

With the aim of harmony between automobiles and society, Subaru is making great progress in achieving excellent environmental and safety performance and is pursuing improvement in total safety using state-of-the-art technologies while trying to provide human-friendly automobiles.

Subaru has been making advances in high-performance AWD\*1 that can provide drivers with safe, comfortable, and fun driving on any road. In accordance with our belief that attaining ideal driving dynamics will lead to safety, Subaru has been focusing on development of sophisticated active safety technologies to prevent accidents, as well as passive safety

technologies to ensure safety in the event of an accident.

Subaru is proactively involved in development of both active and passive safety features, in an effort to achieve harmony with both environmental protection and energy saving.

High-level integration of driving, safety, and environment will create a product that will move you.



## Efforts to Create Safe Automobiles

Subaru continues to progress in developing superb vehicles with the following two safety features:

- Active Safety for improving performance of our automobile's basic drive, turn, and stop functions and to prevent accidents using advanced safety systems; and
- Passive Safety to protect passengers from collisions and to pay due consideration to and coexist with pedestrians and small vehicles.

In accordance with Subaru's concept of safety, that vehicles should be safe in any situation, and through the proactive utilization of state-of-the-art technology, Subaru is able to offer that vital capability, safety, to its customers.

## Development of Driving and Safety Technologies

True mobility demands that cars be able to drive freely anytime, anywhere, in any environment, according to the driver's will. In order to ensure compatibility between people, vehicles and society, Subaru is promoting research and development of the Subaru IVX\*2 as a vehicle for research on autonomous automatic operation, with the idea that avoiding accidents altogether would be ultimate safety.

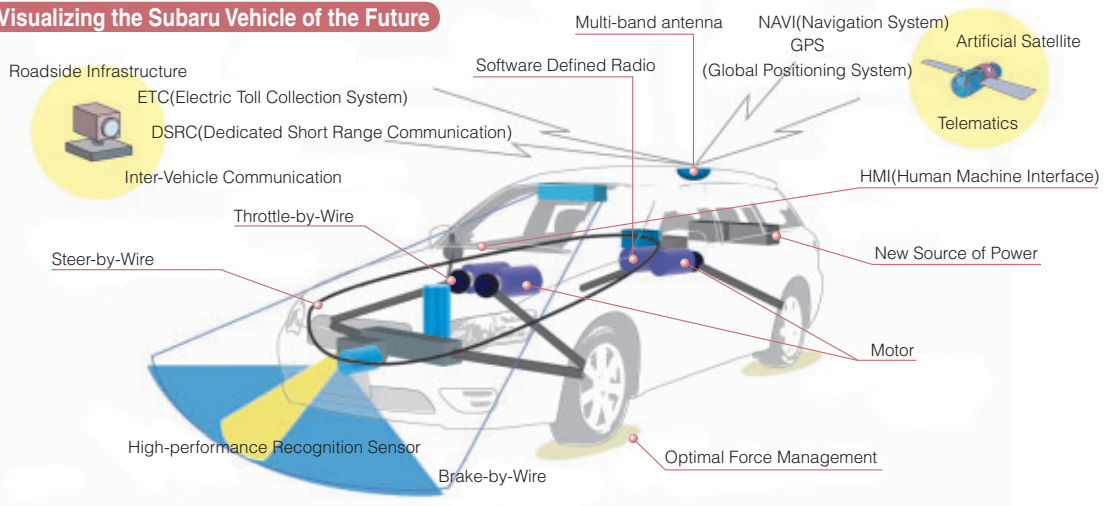
The IVX is an autonomous automatic operation vehicle that combines the Subaru core technology of forward recognition using stereo cameras with automatic guidance technology using high-precision GPS.

Subaru used ADA (Active Driving Assist), which was commercialized through

## Philosophy of Subaru's Intelligent Vehicle Development

Our philosophy is intended to provide the market with an original, innovative system resulting from our research activities that will allow vehicles to have more sophisticated and streamlined features, with the aim of compatibility between ultimate drivability and active safety.

### Visualizing the Subaru Vehicle of the Future



\*1 AWD : All Wheel Drive  
\*2 IVX : Intelligent Vehicle X



image recognition technology with a stereo camera, to achieve these functions: the lane deviation alarm, the following distance (proximity) alarm, cruise control to



Subaru ADA

maintain following distance, and the curve alarm. The Subaru ADA, an integrated system consisting of a stereo camera and a millimeter wave radar, recognizes a wide variety of traffic conditions in front of the driver, even in bad weather. The ADA provides on-target assistance to the driver's awareness and judgment and helps drivers feel more comfortable and less fatigued.

improvement in safety performance so that everyone can be relaxed and safe while driving.



Car-to-Car Collision Test Facility

### Collision Safety

Subaru is always pursuing rational car body construction on which safety, lightweight chassis, and driving are based and employs an original lightweight, high-strength, safe chassis, the ring-shaped reinforcement structure, for various models such as the Legacy and the mini cars.

The latest mini cars, the R2 and the R1, have also been designed to guarantee safety, precisely because they are small. Each of them fuses the high level of collision safety ensured by the new rib-like frame chassis with weight reduction in a well-balanced combination, making drivers feel more relaxed and letting them achieve maximum safety in case of an emergency.

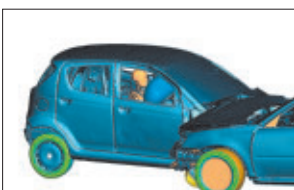


We at Subaru feel we must make every possible effort in order to minimize damage to the automobile-oriented society by taking into account patterns of accidents that may occur in actual traffic situations.

Subaru is striving to give sufficient attention to expansion of safety equipment, such as air bags and seatbelts, and adoption of a seat structure to reduce whiplash injuries, which accounts for a substantial share of injuries in accidents, as well as protection of the automobiles, motorcycles, and pedestrians with whom drivers may collide. Subaru is involved in the development of automobiles under the principle of safety called compatibility (or mutual safety), striving to complete automobiles with a wide variety of safety features.

In order to efficiently develop many of these collision safety features, Subaru uses CAE simulation technology, the all-weather car-to-car collision test facility, and the latest whiplash measurement tool, a human dummy, to develop state-of-the-art safety technologies.

Safety levels can never be too high. Thus, Subaru is tirelessly pursuing



CAE Simulation Technology



The latest whiplash measurement tool, a human dummy

## Making User-Friendly Automobiles

### About the TransCare Series

FHI has been manufacturing and selling vehicles in a series called TransCare, vehicles for the disabled, since 1980. TransCare, a word coined from "Transportation" and "Care," was registered as a trademark for Subaru's vehicles for the disabled. Subaru is now focusing its efforts on developing laborsaving devices that can be easily used by both caregivers and care-receivers.

### Outline of Vehicles for the Disabled

Subaru offers a wide selection of TransCare automobiles, from the zippy Sambar, a mini car, to the Legacy, a standard-sized car for enjoying long-range drives. In fiscal 2004, Subaru installed the TransCare Wing Seat\*1 to the new R1 (mini car) simultaneously with its launch.



R1 TransCare Wing Seat

Also, in response to the increasing demand for wheelchair accessible vehicles, our Sambar mini car offers an electrically operated wheelchair lifter\*2 that allows for loading and unloading of passengers in wheelchairs. We also offer a type equipped with a stretcher\*3, which allows for loading and unloading of passengers who are lying down.



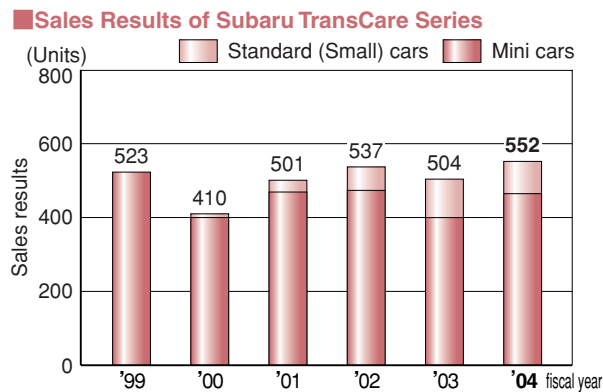
Sambar Dias Wagon TransCare Electrically Operated Lifter

\*1 Wing Seat: A rotating front passenger seat to allow for easy loading and unloading of passengers. \*2 Wheelchair Lifter: This is Japan's first wheelchair lift that uses the Side-lifting System (introduced in August 2004). This wheelchair lifter is an electrically operated lift that provides passenger security and safety by loading and unloading from the side of the car, instead of from the road. \*3 Stretcher: This is a bed with wheels to carry patients who are lying down. Subaru's Sambar is Japan's first van-type mini car that is equipped with a stretcher (as of August 2004).

## Sales Results of TransCare Series

With the aim of sharing the happiness of living with cars with all people, Subaru develops and distributes vehicles for the disabled so that disabled and aged people can enjoy a safe, comfortable ride. Our sales results are shown below.

Furthermore, we have been working on the expansion of the software for the sales of the vehicles for the disabled, promoting the acquisition of the certification of Service Care Attendant for Sales since 2004.



## For Customer Satisfaction

The Subaru Customer Center is where Subaru provides customer services under FHI's quality policy. The Subaru Customer Center consists of a Customer Relations Department where we receive questions and suggestions from customers, a CS Promotion Department for ensuring a high level of customer satisfaction, a Service Department, where a variety of service plans are developed to secure comfortable driving for customers who have purchased Subaru cars, and the Subaru Academy, which serves to provide education for Subaru dealers both domestically and overseas.

### Quality Policy

FHI considers customer satisfaction the first priority and will work constantly to improve products and services to provide world-class quality.

## Customer Relations Department

Within the customer relations department, the Subaru Customer Center has been established to gather the firsthand views of our customers. Since communication is exchanged mainly by means of telephone and letters, we ensure quick and on-target responses to inquiries and consultations from our customers, based on our action policy of promptness, sincerity, and attentive listening. In the case of questions that cannot be handled immediately, we provide responses after consulting with related departments and Subaru dealers.

Market phenomena, and requests and suggestions from our

customers are released in internal reports issued weekly/monthly/se mi-annually/annually. We believe that making use of feedback from our customers for corporate activities eventually leads to development of products and services that satisfy our customers. We believe that customers' voices represent their expectations of Subaru. Therefore, we would like to continue to serve our customers through good communication with each one and to be a company that makes our customers feel great about our relationship.

## Results of fiscal 2004 Activities

The team dedicated to customer consultation services has been providing services since its establishment in May 1982. In fiscal 2004, the number of consultations we received drastically increased, due to the increase in the standards of customer demands and the establishment of consultation by e-mail. We received a total of 60,000 inquiries (129% compared to the last year), and among them, 7,000 items (126% compared to the last year) were problems that were pointed out. A total of about 56,000 inquiries (93% of overall) were made by telephone, and 3,200 (6% of overall) were made by e-mail, and about 500 (1% of overall) were made through letters.

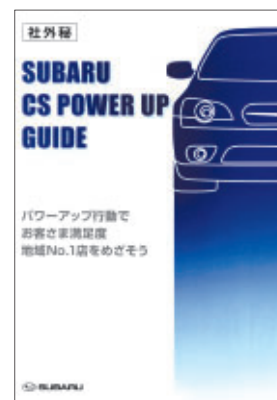
Furthermore, we created the manual for customer relationships. Thus, we enhance total quality by improving customer satisfaction by high-class customer relationships including dealerships, increasing Subaru fans through communication of Subaru's views, and reflecting customer's voices in products, quality, sales, and service of customer relationships.

## CS (Customer Service) Promotion Department

We, as the Subaru team that includes dealers, as well as all divisions and departments within the company, aim to provide the highest level of satisfaction to our customers. Customers' opinions that we have received through dealers and Subaru questionnaires for customers are incorporated into products, quality, and sales via related divisions and departments.

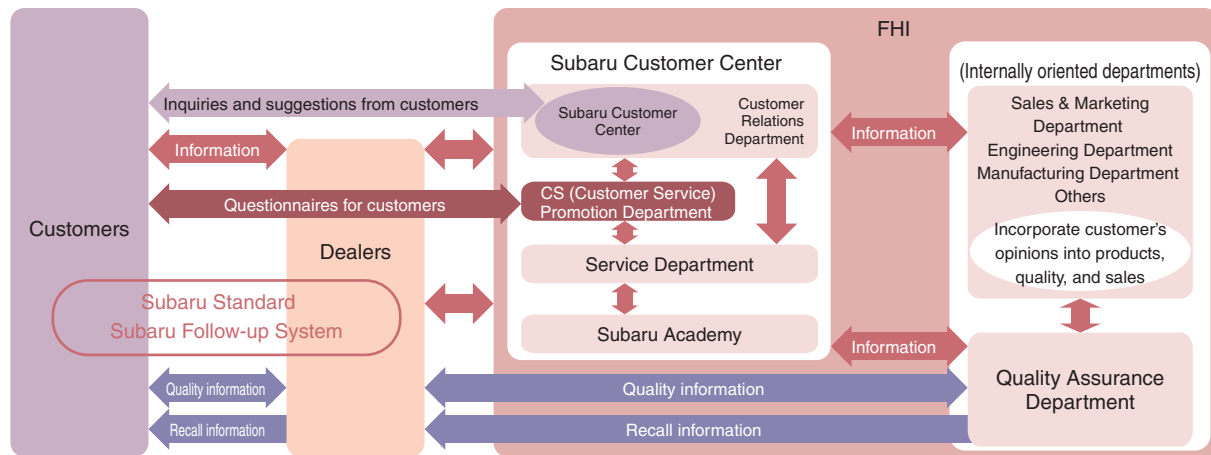
## Fiscal 2004 Results of Activities

Immediately after the Legacy was launched, we began to conduct customer satisfaction surveys every year to listen sincerely to the voices of our customers, and we have



incorporated the results of the surveys into the improvement activities of customer services and equipment at dealers. In addition, providing the Subaru CS Power Up Guide for the communication of hospitality to customers, all staff at dealers strive to create Subaru shops supported by customers.

Relationships with Customers



Service Department

Subaru has adopted the Subaru Follow-up System\*1, our service system that ensures a safe, secure, and comfortable experience with your car, with coverage from the delivery of the car to the third-year compulsory inspection. Subaru also holds nationwide service skill competitions in an effort to improve the technical skills of dealers' service mechanics.

Service Mechanics' Entry for WRC Rally

Since 1990, Subaru has sent mechanics selected from nationwide dealers to the WRC (World Rally Championship) regarded as the summit of motor sport competition. In 2004, Subaru participated in Japan's first WRC Rally Japan as the Subaru Rally Team Japan, which entered Group N, the class nearest to mass-produced cars, and let two cars complete the race. Again in 2005, 14 select drivers plan to join the WRC rally scheduled for September.

These mechanics set entry for a WRC rally as one of their goals and hone their technical skills in routine work every day. In addition, they learn a real sense of judgment, skills,



Selected mechanics maintaining an Impreza in the WRC Rally Japan

and teamwork in the harsh conditions of the rally they experienced. These experiences lead to exact, quick maintenance for customers' precious cars.

Approaches to Product Recalls

Our efforts to improve the quality of Subaru products based on information from customers all over the world contributes to product improvement and further polishes the Subaru brand. Quality information about Subaru automobiles is collected from

global dealers through our dedicated Internet network, by fax, and phone. Based on the information collected and investigations of vehicles and parts, we handle problems as follows:

- (1) Our number one priority is to provide customers with security while driving their cars. Problems are handled in accordance with domestic and overseas laws and regulations.
- (2) Announcements of product recalls are made to customers through newspapers, direct mail, and the FHI website\*2.

Subaru Academy

In response to the enhancement of the global sales network, FHI opened the Subaru Academy in January 2005 at the Subaru Comprehensive Training Center, an educational facility located in Hachioji, Tokyo. The Academy provides a two-level hierarchy of educational programs that systematically trains personnel from recruits to management. First, the Business School for Management accepts dealer management and persons in charge of administering sales and service at home and abroad, with the aim of strengthening the sales force of the entire Subaru group. Second, the Training School accepts young personnel from sales, the service front, and mechanics in an effort to improve technical skills and abilities to respond to customers. The newly established Subaru Academy is expected to accept about 12,000 trainees per year.

Education and training for domestic Subaru dealers have been previously provided in the Fuji Gakuen in the Tokyo Office located in Mitaka, Tokyo. In order to further improve customer satisfaction, however,



Appearance of Subaru Comprehensive Training Center

the name Fuji Gakuen was changed to Subaru Academy and renewed as a facility for human resource development for both domestic and overseas Subaru dealers.

\*1: For the Subaru Follow-up System, please see page 57 of the "2004 Environmental & Social Report."

\*2: FHI website: <http://www.fhi.co.jp/recall/main.htm>

# Relationship with Employees

FHI is currently seeking to reinvigorate our corporate culture, focusing on development of a free, openhearted, and aggressive creative group. Aiming at establishing a highly original, vigorous organization, we approach the development of systems from a wide range of perspectives, including the wage system, career planning programs, training programs, and benefit programs, so that employees can take on a higher level of challenges.

## Employment

### Employees Data

Concerning the hiring of new employees, we have been recruiting under the definition of seeking individuals as independent personnel who can find problems on their own, find solutions, and generate the required results, and *personnel with strong individuality*.

The number of employees over the last five years is shown below.

The number of employees over the last five years is shown below.

Month/Year	April/2001		April/2002		April/2003		April/2004		April/2005		
	Number	%	Number	%	Number	%	Number	%	Number	%	
Regular employees (including temporary and trial employees)	Male	13972	93.1	13689	93.1	13448	93.1	13242	93.1	13221	93.2
	Female	1030	6.9	1009	6.9	990	6.9	984	6.9	963	6.8
	Total	15002		14698		14438		14335		14184	
New employees (among regular employees)	Male	301	85.5	292	86.4	242	86.4	276	86.0	304	87.1
	Female	51	14.5	46	13.6	38	13.6	45	14.0	45	12.9
	Total	352		338		280		321		349	

### Establishing workplaces that allow motivated, competent women to play active roles. (Positive Action \*1)

Since 2002, FHI has worked to establish an environment that allows all employees, men and women, to work dynamically and equally in demonstrating their abilities in all workplaces, with the aim of building a free, vigorous corporate culture.

After the Law concerning the promotion of measures to support nurturing of the next generation took effect in April 2005, each company has been further required to implement measures to improve the employment environment. For this reason, we plan to gradually take positive action company-wide after April 2005.

**①Enhancing Motivation to Work and Productivity**

Allowing both male and female personnel to equally show their abilities and receive fair evaluations enhances their motivation to work and lets them make full use of their capabilities. In addition, seeing some female staff play an active role stimulates other female and male staff, leading to improvements in productivity.

**②Creating New Value**

Secure human resources with a variety of individual skills regardless of sex and let the employees make full use of their capabilities, in order to provide products and services that meet new needs and to anticipate the need for products and services in a diversified market.

Need for and Effect of Positive Action

**③Securing the Labor Force**

In this era of an aging society with fewer children, downsizing of in-house personnel, and improvement in the efficiency of operations, secure good human resources regardless of sex and a wide variety of high-quality labor force, showing that we provide a positive work environment and fairly evaluate employees' capabilities.

**④Improving the Corporate Image**

Companies that foster personnel and let them demonstrate their abilities create confidence and are regarded as promising companies by customers, partners, and shareholders.

### Employment of People with Disabilities

When the Law for Employment, Promotion etc. of Persons with Disabilities was revised in 1976, we began employing people with disabilities in fulfillment of our social responsibility. In order to enhance the employment activities of the disabled, FHI organized the universal project team in the Gunma Manufacturing Division in 1999 to incorporate the concept of normalization\*2 into the system. Currently, employment activities have been developed into activities of creating an attractive corporation where all motivated and competent people are given opportunities to contribute.

The proportion of FHI employees with disabilities was 2.0% at the end of March 2004, and 1.89% at the end of March 2005. In the Gunma Manufacturing Division, employees with disabilities accounted for 2.4% of all employees at the end of March 2004, and 2.2% at the end of March 2005.

#### Column

#### Award for Excellent Performance for Employment of Disabled Persons

FHI received the FY 2004 Award for Excellent Performance for Employment of Disabled Persons from the Tokyo Association for Employment of Disabled Persons. We believe that this award represents the high evaluation of the company-wide efforts to create an appealing corporation where all motivated and competent employees are given opportunities to contribute, with an emphasis on working together. Although in 2003, FHI's Gunma Automobile Division received the awards from the Gunma Prefectural Association for Employment of Disabled Persons and the Japan Association for Employment of Disabled Persons, this is the first time for FHI, the overall company, to receive awards.

### Labor-Management Relations

FHI and the FHI Workers' Union have established a labor-management council for promoting smooth business operations and mutual communication. In recent years, labor and management have maintained good relations. No disputes between labor and management have arisen during the past four years. The FHI Workers' Union is a member of the Confederation of Japan Automobile Workers' Union, through the Federation of Fuji Heavy Industry Labor Unions.

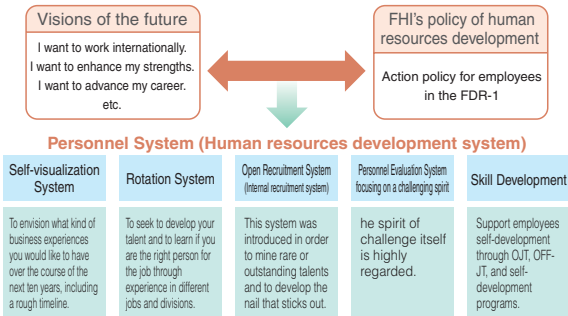
\*1: Positive Action: Company's voluntary, active efforts to abolish sex discrimination derived from the fixed awareness of separating sex roles or based on history, if it exists, in effect between male and female employees.

\*2: Normalization: One of the concepts for a welfare society or preparations to realize the concepts; i.e. socially vulnerable groups, including disabled people and senior citizens, should be given the same living opportunities as those enjoyed by other people.

## Development of Human Resources

FHI aims to develop personnel who, with a clear awareness of their missions and responsibilities, can take the initiative in developing their own future career plans, with self-actualization. The development of human resources is based on OJT (on-the-job training),\*1 which is training conducted through actual job experience. However, combining OJT with Off-JT (off-the-job training)\*2 and self-development programs on a voluntary basis enables more effective and efficient development of human resources. Furthermore, FHI pursues comprehensive development of human resources by adopting the self-visualization system, the rotation system, the open recruitment system, and the personnel evaluation system.

### Providing Motivated Employees with Opportunities to Grow



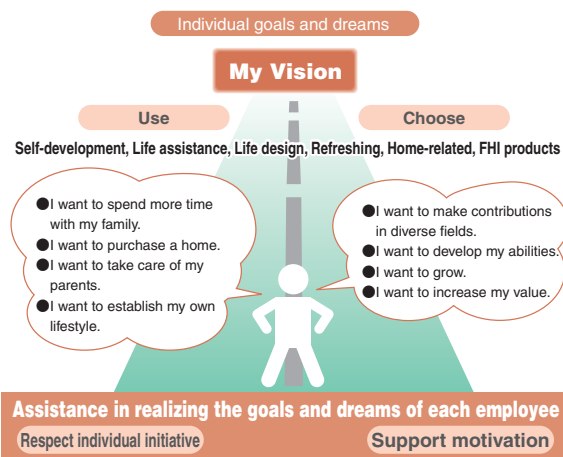
### Open Recruitment System



## Benefits Package

### My Vision

Starting in October of 2003, FHI introduced a new program for the benefits package called My Vision. The My Vision program provides assistance in diverse forms that facilitate smooth business operations and help each employee to lead a healthy, high-quality life. The main concept of the package is creation of tangible and intangible assets.



## Health and Safety

FHI strives to create safe, comfortable workplaces for employees and continuously carries out activities to prevent employee traffic accidents and to support employees' physical and mental health.

### Basic Philosophy, Basic Policy, and Promotion Organization

- Basic Philosophy of Health and Safety  
Health and Safety take priority in any business
- Basic Policy of Health and Safety  
Aiming for no disasters regarding occupational accidents, traffic accidents, diseases, and fire disasters; all employees recognize the importance of health and safety; improve the equipment, environment, and working methods; and improve management and awareness in order to create safe and comfortable workplaces.



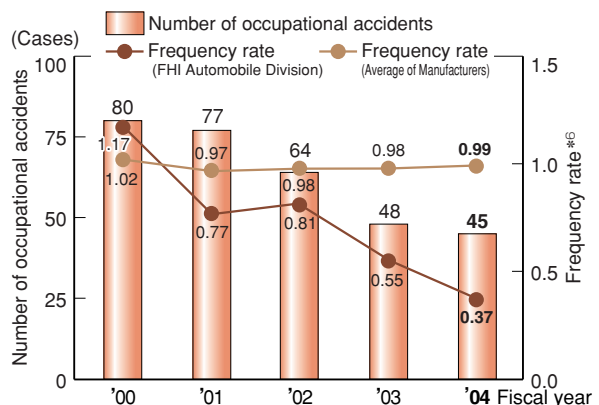
### Occupational Safety

FHI has been conducting activities to help raise each employee's safety awareness, improve management of the workplace, and eliminate risks.

To raise awareness, KYT\*3 and the Hi-yari Hatto\*4 Activity were implemented. To improve management of the workplace, a self-management activity called TSZ\*5 was introduced at an early stage in each workplace. In addition, in 2000, FHI introduced a unique small-group risk assessment system to improve each employee's safety and to eliminate risks.

As shown in the chart below, the number of accidents is decreasing. We will continue to focus our efforts on improvement, aiming at attaining zero disasters.

### Number of Occupational Accidents and Occupational Accident Rate



\*1 OJT : On the Job Training \*2 OFF-JT:OFF the Job Training \*3 KYT: Training for predicting dangers; K: Kiken (Danger); Y: Yochi (Prediction); T: Training \*4: Hi-yari Hatto: Activity to collect cases of near-miss incidents. \*5 TSZ: Total Section Zero (related departments and sections make combined efforts to attain zero disasters). \*6 Frequency rate: The number of deaths caused by occupational accidents / Actual overtime labor hours x 1,000,000

Column

**Gunma Manufacturing Division Introduced OHSMS**

With the aim of improving occupational health and safety, such as a reduction in on-the-job injuries, the Gunma Manufacturing Division introduced the Occupational Health and Safety Management System, OHSMS, in April 2005.

The OHSMS is intended to reduce on-the-job injuries and improve the level of occupational health and safety by converting main disaster control from the conventional reactive measures to proactive risk management and implementing promotion of autonomous management of occupational health and safety, clarification of duties and rules about occupational health and safety, and identification and

elimination or reduction of risk or hazardous factors.



Minoru Tamura, then chief general manager of the Gunma Manufacturing Division, giving the greeting at the OHSMS kickoff ceremony

**Health Care**

In November 2004, our medical officer and counselor exchanged opinions with each other during the panel discussion under the theme the "Current State and Prospects of Mental Health Care: For a Vigorous Workplace with a Good Atmosphere for Employees to Communicate" as a part of the 29th Company-wide Health and Safety Congress (as shown in the photo below). To help reduce the amount of employee sick leave, we have also been working



Scene from the 29th Company-wide Health and Safety Congress

on early detection and treatment of diseases by adding extra examination items to the legal diagnostic items, so that employees are always in good physical and mental condition and can take full advantage of their skills and abilities.

**Creation of a Comfortable Working Environment**

In order to implement the government guidelines for a comfortable workplace, FHI has been systematically working to improve every item addressed by the guidelines, including working environment, working methods, and environmental



Stamping press equipped with sound insulation (the Second Stamping Section, Yajima Plant, Gunma Manufacturing Div.)

equipment. Also, in order to create a more comfortable workplace, we have been working on improving lounges, restrooms, and dining halls and adopting universal-access designs in our facilities.

In July 2004, FHI started a revision of its working environment standard by

addressing the revision of laws and regulations and reviewing the standard from the employees' perspective. FHI set a standard for every item, and for some items, the FHI standards are five times as stringent as those required by law.

**Traffic Safety**

FHI undertakes various efforts to prevent traffic accidents that could occur in the course of business activities, commuting, and private time. For the major activities in fiscal 2004, outside experts presented traffic safety lectures in all our offices, and we distributed the Safety Driving Manual aiming at skill improvement as employees of transportation machine manufacturer.

Column

**Utsunomiya Manufacturing Division was Honored as a Nationwide Excellent Office for Traffic Safety**



Tsugio Kihara, then manager of Utsunomiya Manufacturing Division's Security Section, holding the certificate of commendation

In January 2005, Utsunomiya Manufacturing Division, by recommendation of the Tochigi Traffic Safety Association, was honored as one of the Excellent Offices for Traffic Safety at the 45th National Traffic Safety Campaign Central Conference. This was because daily efforts for traffic safety in the division were highly evaluated.

**Prevention of Fire and Disasters**

Disasters, including fires and explosions, would negatively influence our business activities, employee safety, and local communities. In order to eliminate disasters, or to minimize the damage in the event of a disaster, we are striving to improve facilities and equipment, to enhance management, and to conduct emergency drills on a regular basis.

Column

**Self-defense Fire Brigades Produced Good Results**

In May 2004, the Self-defense Fire Brigade of the Tokyo Office took second place in both the male and female categories at the 33rd Fire Drill Presentation hosted by the Mitaka Fire Station. In November, the Self-defense Fire Brigade of the Utsunomiya Manufacturing Division won a victory at the 28th Fire Fighting Competition hosted by the Utsunomiya Fire Self-defense Association.



These accomplishments were the result of the enhancement of the fire prevention system in recognition of the importance of early fire extinguishing and training executed to prepare for the contingency.

The Fire Brigade of the Tokyo Office produced good results

# SOCIAL INVOLVEMENT

FHI, as a member of society, would like to take on social responsibilities through activities suitable for Subaru's contribution to society, e.g., contribution to fields related to Subaru products, contribution as a manufacturer to fostering human resources for the next generation who are involved in manufacturing, contribution to the development of the communities around our factories, and providing support for each employee participating in community activities. FHI will actively promote these activities in an effort to support the sound, sustainable growth of society.

## Social Contributions

### Contributions to Development and Promotion of the Vehicle Culture

In Europe, where the automotive culture was born, motor sports are very popular and are a part of people's lives. In order to further develop and promote the automotive culture in Japan, we are involved in many activities at home



Impreza racing in WRC

and abroad, and participate in the World Rally Championship (WRC) and the Japan GT Championship. At the first WRC Rally Japan last year, Subaru Impreza became the overall champion, attracting the attention of rally fans at home and abroad. Subaru gets feedback on technical skills cultivated by the experience of participating in these motor sport competitions.

### Subaru Visitor Center

We opened the Subaru Visitor Center at the Yajima Plant of Gunma Manufacturing Division, one of our main plants, in July 2003, which is the 50-year anniversary of FHI.



Subaru Visitor Center

The first floor of the Subaru Visitor Center houses an entrance atrium, which expresses a wonderful encounter between people and cars created by Subaru technology, and an exhibition hall. On display in the exhibition hall is a Subaru 360, which played a role in the start of



Exhibition hall

Japan's motorization, a rally car that participated in the WRC, and a succession of noted Subaru models. On the second floor, there are technology and recycling laboratories where Subaru's future-oriented technologies and environmental efforts are exhibited, which allow visitors to learn about automotive culture and history. Subaru Visitor Center has an annual capacity of 100,000 persons and is open to the public.\*<sup>1</sup> The Center is also available on weekdays as a part of the social studies curriculum for elementary school children. So, visiting the

Center in combination with plant tours further strengthens children's interest in learning.

### Assisting Development of Human Resources for Manufacturing

In addition to accepting plant tours for elementary school children by the Yajima Plant of Gunma Manufacturing Division, we have a website called Subaru Virtual Land Plant Tour.\*<sup>2</sup> This website describes a series of automotive manufacturing processes using animation and photographs to help visitors easily understand, in the hope of encouraging future engineers.



Subaru Virtual Land Plant Tour

Also we have been actively involved in the development of future human resources for manufacturing, such as undertaking internship programs for students to provide job experience, holding the Parent-Child Vehicle Class during summer vacations, and sending engineers as lecturers to universities or colleges.



### Backup for Employees' Volunteer Activities

We think that even if Subaru, as a company, actively promotes contributions to society, such activities cannot generate substantial results suitable for Subaru without the motivation of each employee.



Used prepaid cards collected

For each employee to feel a real sense of contributing to society, FHI is involved in various activities to support employees' efforts, e.g., clean-up activities around the factory during lunchtime, blood donations at the company dispensary, in addition to, the readily available volunteer activities of collecting used postage stamps, prepaid cards, bellmarks, and pull-tabs from empty cans and contributing them to voluntary organizations to help developing countries or the handicapped.

\*1. It is open to the public only on the second Saturday. Reservations are required for the tour. (In fiscal 2004, about 62,000 elementary, junior high, and high school students and about 12,000 adults visited the Center.) \*2 Website of Subaru Virtual Land Plant Tour: <http://www.fhi.co.jp/child/index.html>

## Involvement in Local Events

FHI promotes exchanges with people from the community by participating in a variety of local events and by holding annual events for the public.

It has been ten years since the Gunma Manufacturing



Subaru Friendship Concert

Division jointly organized the Subaru Community Exchange Association with local partners. The Association sponsors many events every year. One of those events is a classic music concert, the Subaru Friendship Concert, played by the Gunma Symphony Orchestra and others. This annual concert is free of charge, but people who come to the concert are requested to bring such household commodities as towels, soap, or detergents as a donation for local welfare institutions. We also sponsor flower planting activities and a charity golf tournament in an effort to contribute to local communities.

The Gunma Manufacturing Division participated in the local festival, where volunteers among the employees in the division carried an employee-made, full-scale mikoshi (portable shrine); everyone enjoyed themselves.

As described above, customer appreciation festivals sponsored by each office were crowded with many local people.

### Major Events in Fiscal 2004

Division / Office	Events
Gunma Manufacturing Division	Subaru Appreciations Festival was held at the Yajima Plant Friendship and Appreciation Festival for locals and employees families was held at the Oizumi Plant Supported the Ohta City Firework Show Supported the Subaru Cup Baseball Tournament for Children Supported the Joshu Ohta Subaru Marathon Participated in the Ohta Festival Participated in the Oizumi Festival
Saitama Manufacturing Division	Summer Evening Festival. Participated in the Kitamoto Festival
Tokyo Office	Summer evening festival was held.
Utsunomiya Manufacturing Division	Friendship Festival for locals and employees families. The Bon Dance Festival for locals and employees families. Supported local summer festivals



To the Kitamoto Festival (Industrial Products Company)

## Contributions to Sports

FHI sport clubs consist of a baseball team and a track and field team.

Again last year, our baseball team represented Ohta City, Gunma Prefecture, in the Intercity Baseball Tournament and cleared the Kita-kanto preliminary to take part in the final round at Tokyo Dome.

Baseball classes for children organized by members of our baseball team are popular events in which many children who dream of becoming a major-leaguer in the future take part.

Our track and field team entered the New Year Ekiden Road Relay (All Japan Jitsugyodan Ekiden,) a local New Year's rite held in Gunma Prefecture, for the fifth consecutive year since 2001. Our team has gained a higher-ranking each year and received the enthusiastic cheers of the crowd on the roadside. In the ekiden held on New Year's Day this year, our team won an upper ranking and acquired the right to be seeded in next year's ekiden.

A member of our track and field team was chosen as one of representatives to enter the world marathon championship, which will be held this August in Helsinki, and thus attracts steeply increased attention from the track and field circle.



Baseball classes for children organized by members of our baseball team



New Year Ekiden Road Relay

## Opening the FHI facilities to Communities

FHI opens its health and welfare facilities to the communities.

For example, swimming pools, grounds, tennis courts, and employees clubs are available for general use free of charge or for a small fee.\*<sup>1</sup>



Subaru Swimming

In addition, we established a civic hall in the administrative building of our company housing, provided space for a disaster prevention warehouse, and opened a park on our site to the public as part of our contribution to the communities.

## Disaster Aid

In 2004, there were many disasters worldwide. FHI donated to disaster relief efforts around the world. In particular, we donated power generators from Industrial Products Company, which we think helped many victims in the hope of encouraging the victims by turning on the lights in areas with the electrical lifeline disconnected.



Subaru Generator (power generator)



## Regional Activities

### Cleanup Activities

#### The 17th Cleanup Campaign this year!

#### Cleanup around the plants of Utsunomiya Manufacturing Division

On Saturday June 26, we implemented the Cleanup Campaign as a part of our contributions to the local communities, with the aim of beautifying the environment around the plants of the Utsunomiya Manufacturing Division. In the early morning, 230 persons got together to pick up litter and mow the grass around each area: the main plant, south plant, and south plant no. 2. This activity was the seventeenth annual, starting from 1988 in the hope that we could contribute to the local communities with an awareness of beautifying the environment around our plants.



Picking up litter around the atelier



All participants gathering before work

#### Major Cleanup Activities in Fiscal 2004

Division / Office	Implementation Date	Other Major Cleanup Activity
Gunma Manufacturing Division	May 29	Cleanup of Kanayama, Ohta City (organized by the Subaru Community Exchange Association; about 520 people participated)
	September 5	Cleanup of Kanayama, Ohta City (organized by Ohta City; about 300 people participated from the Subaru Community Exchange Association)
Industrial Products Company	April 22	Pikapika Kitamoto Omakase Program (Kitamoto-city Voluntary Cleanup Program) The 7th Pikapika Kitamoto Omakase Program Clean up around the Division (A total of 1,195 people from the Industrial Products Company participated in the nine clean up sessions implemented in FY2004)



September: cleanup of Kanayama



May: Opening ceremony of cleanup of Kanayama (a scene in May 2005)



April: Pikapika Program



Collecting about 100 kg of litter

## Cooperation/Donation/Support to Special Events

The FHI Automotive Business Unit participated in such special events as the low pollution vehicle fairs, which allow visitors to have a firsthand look at low pollution vehicles. The Eco Technologies Company has demonstrated wind power generation systems and other environment-related products at environmental exhibitions in many areas of Japan.

#### Participations in Exhibitions

Date/Exhibition	Venue	Organizer
May 25 (Tue) – May 28 (Fri) 2004 NEW Environmental Exhibitiona	Tokyo Big Sight	Nippo Co., Ltd.
May 19 (Wed) – May 21 (Fri) Automotive Engineering Exposition 2004	Pacifico Yokohama	Society of Automotive Engineers of Japan
Jun 5 (Sat) – Jun 6 (Sun) Eco Car World 2004	Yokohama Minato Mirai 21	Ministry of Environment etc.
Oct 6 (Wed) – Oct 10 (Sun) Japan Aerospace 2004	Pacifico Yokohama	Society of Japanese Aerospace Companies
Oct 13 (Wed) – Oct 15 (Fri) International Home Care and Rehabilitation Exhibition (HCR2004)	Tokyo Big Sight	Japan National Council of Social Welfare Health and Welfare Information Association
Nov 2 (Tue) – Nov 7 (Sun) 38th Tokyo Motor Show	Makuhari Messe	Japan Automobile Manufacturers Association
Oct 19 (Tue) – Oct 24 (Sun) World Congress on ITS, Nagoya, Aichi 2004	Nagoya International Exhibition Hall	Japan Organized Committee
Oct 23 (Sat) – Oct 24 (Sun) Cleanup Fair 2004	Tochigi Science Museum	Tochigi Prefecture
Jan 14 (Fri) – Jan 16 (Sun) Tokyo Auto Salon 2005	Makuhari Messe	Tokyo Auto Salon association
Feb 11 (Fri) – Feb 13 (Sun) Camping & RV Show 2005	Makuhari Messe	Camping & RV Show Executive Committee

The Utsunomiya Manufacturing Division continuously executed green fundraising, a part of our social contributions that employees started in 2000, and raised a high amount of funds like in the previous year. The fund was donated to the Tochigi Green Promotion Committee. They are supposed to use the fund mainly for forest maintenance and conservation, which will finally help ensure our valuable water resources and prevent global warming.



green fundraising

## Awards

### Industrial Products Group received the Supplier of the Year Award

Industrial Products Company, Robin Manufacturing USA Inc. (RMI), and Robin America Inc. (RAI) received the Supplier of the Year Award from Cummins, a major US leisure-generator manufacturer. This was a result of the appreciation of the cooperation among three companies



The awards ceremony

in Japan and the United States, as the Industrial Products group are in charge of design, assembly, and sales of the V-2 cylinder engine, a generator power source made by Cummins.

### Subaru 360 and Shinroku Momose entered the Japan Automobile Hall of Fame

In the fiscal 2004 Japan Automotive Hall of Fame, the Subaru 360 was chosen as a historic car, and Shinroku Momose, the late FHI director, was admitted to the Hall of Fame. The Japan Automotive Hall of Fame was established in 2001 to honor great achievements of people or automobiles that contributed to the development of the automotive industry, academics, and culture in Japan, as well as the establishment of a prosperous motorized society, and to pass those achievements down to future generations. The Japan Automotive Hall of Fame is supposed to select a historic car and Hall of Fame inductee every year.



The awards ceremony of the Japan Automotive Hall of Fame. Mrs. Momose (far left on the stage) received the award on behalf of the late Mr. Momose at the National Science Museum in November 2004.



Subaru 360

## Environmental Education

### Elementary Children First Visited the Tokyo Office for a Social Studies Tour

On October 12, an employee of the Subaru Engineering Division of Tokyo Office visited the Musashino City Third Elementary School to conduct a class, and in return, the fifth grade students who attended



The class scene

the class visited the Tokyo Office on October 18. The Tokyo Office has not previously allowed tours because the development department in the office requires complete secrecy. As a contribution to



Visiting the Design Studio

the local community, however, the office decided to allow a tour for the first time. The students who attended the class on the automotive industry and Subaru cars enjoyed the office tour, seeing actual car design drawings, experiencing the temperature limits for cars, and test driving the Samber EV.

### Subaru Environmental Exchange Meeting for Elementary School Children

On July 6, we held the Subaru Environmental Exchange Meeting, as a part of the class for fifth grade students from Ohta City Niragawa Nishi Elementary School. Under the theme "Protect the valuable Earth!" the object of the meeting was to think about what we should and can do to protect the current and future earth. The meeting included a film screening, experiment, and quiz, which were very popular with the students. Elementary and



Environmental Exchange Meeting

junior high schools in Ohta City have a high level of environmental awareness and have actively worked to acquire the ISO 14001 certification.

### Lecture on Environment at the Prefectural Technical High School

We held a lecture on the environment titled "Manufacturing and the Environment" on July 2 at the Prefectural Utsunomiya Technical High School, which acquired ISO14001 certification from a third party in 2002. The lecturer introduced our product lines, environmental policy, flow of activities, and corporate environmental concepts, and then described our concrete efforts classified into the direct effect and indirect effect regarding manufacturing and the environment, and finally explained our future environmental activities titled "What Kind of Environment are We Aiming For?"



The lecture scene



## PLANT SITE DATA



### Gunma Manufacturing Division

Gunma Manufacturing  
Division

#### Gunma Manufacturing Division, Main Plant

[Location] 1-1, Subaru-cho, Ohta, Gunma [Site area (building area)] 590,000 m<sup>2</sup> (320,000 m<sup>2</sup>)  
[Products manufactured] Automobiles (R1, R2, Pleo, and Sambar models) [Number of employees] 3,607

##### Water Pollution Data

(Discharge: Public rivers Regulations: Water Pollution Control Law, Gunma Prefectural Ordinances)

Substance	Regulated values	Maximum values	Minimum values	Average values
pH	5.8 ~ 8.6	7.4	6.4	6.96
BOD	25	13	0.6	2.95
SS	50	23	0.4	5.23
Oil content	5.0	0.6	0	0.13
Cadmium	0.1	0.01	0.01	0.01
Lead	0.1	0.01	0.01	0.01
Hexavalent chromium	0.5	0.05	0.05	0.05

##### Air Pollution Data (Regulation: Air Pollution Control Law)

Substance	Facilities	Regulated values	Maximum values	Average values
NOx	Boiler	150	112	100.3
		180	77.0	64.0
		230	114.0	114.0
		250	129.0	84.1
	Dry-off furnace	230	52.0	27.2
PM	Boiler	0.25	0.070	0.048
		0.30	0.140	0.080
		0.30	0.009	0.004
		0.35	0.002	0.002
	Dry-off furnace	0.30	0.009	0.004
		0.35	0.002	0.002

#### Gunma Manufacturing Division, Yajima Plant

[Location] 1-1, Shoya-machi, Ohta, Gunma [Site area (building area)] 550,000 m<sup>2</sup> (230,000 m<sup>2</sup>)  
[Products manufactured] Automobiles (Legacy, Impreza, Forester models) [Number of employees] 2,457

##### Water Pollution Data

(Discharge: Public rivers Regulations: Water Pollution Control Law, Gunma Prefectural Ordinances)

Substance	Regulated values	Maximum values	Minimum values	Average values
pH	5.8 ~ 8.6	7.2	6.9	7.11
BOD	25	11.9	3.1	4.64
SS	50	4.5	0.7	2.89
Oil content	5.0	0.6	0	0.3
Cadmium	0.1	0.01	0.01	0.01
Lead	0.1	0.01	0.01	0.01
Hexavalent chromium	0.5	0.05	0.05	0.05

##### Air Pollution Data (Regulation: Air Pollution Control Law)

Substance	Facilities	Regulated values	Maximum values	Average values
SOx	Boiler	49	0.40	0.40
NOx	Boiler	70	2.40	2.27
		150	75.0	58.3
		230	108.0	105.5
		230	35.0	18.2
		250	14.0	11.1
	Dry-off furnace	0.05	0.001	0.001
PM	Boiler	0.25	0.04	0.02
		0.30	0.069	0.069
		0.20	0.012	0.005
		0.35	0.006	0.004
	Dry-off furnace	0.20	0.012	0.005
		0.35	0.006	0.004

#### Gunma Manufacturing Division, Ohta North Plant

[Location] 27-1, Kanayama-machi, Ohta, Gunma [Site area (building area)] 40,000 m<sup>2</sup> (30,000 m<sup>2</sup>)  
[Products manufactured] Automotive parts [Number of employees] 95

##### Water Pollution Data

(Discharge: Public rivers Regulations: Water Pollution Control Law, Gunma Prefectural Ordinances)

Substance	Regulated values	Maximum values	Minimum values	Average values
pH	5.8 ~ 8.6	7.9	7.2	7.45
BOD	25	3.9	0.4	1.76
SS	50	12	1.4	5.71
Oil content	5.0	1.0	0	0.24
Cadmium	0.1	0.01	0.01	0.01
Lead	0.1	0.01	0.01	0.01
Hexavalent chromium	0.5	0.05	0.05	0.05

##### Air Pollution Data (Regulation: Air Pollution Control Law)

Substance	Facilities	Regulated values	Maximum values	Average values
NOx	Boiler	250	83.0	76.5
	Dry-off furnace	230	9.0	5.5
PM	Boiler	0.30	0.084	0.046
	Dry-off furnace	0.35	0.031	0.024

#### Gunma Manufacturing Division, Oizumi Plant

[Location] 1-1-1, Izumi Oizumi-machi, Oura-gun, Gunma [Site area (building area)] 400,000 m<sup>2</sup> (180,000 m<sup>2</sup>)  
[Products manufactured] Automotive engines, transmissions [Number of employees] 1,596

##### Water Pollution Data (Discharge: Public rivers Regulations: Water Pollution Control Law, Gunma Prefectural Ordinances, Pollution Control Agreement with Ohta-city and Oizumi-machi)

Substance	Regulated values	Maximum values	Minimum values	Average values
pH	5.8 ~ 8.6	8.2	6.6	7.23
BOD	10	5.6	1.0	3.04
SS	10	4.7	0.2	2.53
Oil content	3.0	0.7	0	0.14
Cadmium	0.1	0.01	0.01	0.01
Lead	0.1	0.01	0.01	0.01
Hexavalent chromium	0.5	0.05	0.05	0.05

##### Air Pollution Data

(Regulation: Air Pollution Control Law, Pollution Control Agreement with Ohta-city and Oizumi-machi)

Substance	Facilities	Regulated values	Maximum values	Average values
NOx	Boiler	150	107.0	83.1
	Melting furnace	180	52.0	30.2
PM	Boiler	0.25	0.082	0.037
	Melting furnace	0.20	0.047	0.036
Dioxins	Dry-off furnace	5	0.011	0.010

[Data measurement] April 2004–March 2005

- Water Pollution [Notations] —pH: Hydrogen-ion concentration, BOD: Biochemical oxygen demand, SS: Concentration of suspended solids in water  
[Units] —mg/l, except pH
- Air Pollution [Notations] —HCL: Hydrogen chloride  
[Units] —SOx: m<sup>3</sup>/h, NOx: ppm, PM: g/m<sup>3</sup>N, HCL: mg/m<sup>3</sup>N, Dioxins: ng-TEQ/m<sup>3</sup>N

**Gunma Manufacturing Division, Iseaki Plant**

[Location] 100, Suehiro-cho, Iseaki, Gunma [Site area (building area)] 150,000 m<sup>2</sup> (110,000 m<sup>2</sup>)  
 [Products manufactured] Automobile repair parts [Number of employees] 94

**Water Pollution Data**

(Discharge: Public rivers Regulations: Water Pollution Control Law, Iseaki City Ordinances)

Substance	Regulated values	Maximum values	Minimum values	Average values
pH	From 5.7 to 8.7	7.6	6.7	7.11
BOD	Under 300	94	7	52
SS	Under 300	85	3	16
Oil Content	5	< 1	< 1	0
Zinc	5	1.4	0.07	0.69
Soluble iron	10	0.07	0.01	0.03
Total Nitrogen	150	20	3.9	8.03
Total Phosphorus	20	9.7	0.42	2.84
Chromium	2	< 0.01	< 0.01	0
Lead	0.1	< 0.01	< 0.01	0

**Air Pollution Data (Regulation: Air Pollution Control Law)**

Boilers had been targeted for improvement, but in September of 2001 the boilers were replaced with a smaller model and thus no targets for improvement remain.

**Gunma Manufacturing Division, PRTR (All Plants Total)****PRTR**

(Substances whose amounts were one ton and over per year are shown below. The substances marked with an \* are Class 1 designated chemical substances.) [Units: tons/year, Dioxins: mg-TEQ/year]

Code	CAS Number	Chemical Substance	Amount handled	Air release	Water emissions (public water)	Transfer	Consumption	Solvent wiping Removal	Recycle	Landfill
1	none	Zinc compound (Water-soluble)	27.17	0	0.29	5.44	21.45	0	0	0
9	103-23-1	Bis (2-ethylhexyl) adipate	1.21	0	0	0	1.20	0.01	0	0
16	141-43-5	2- Aminoethanol	3.45	0	0.28	0.03	0	3.14	0	0
30	25068-38-6	polymer of 4,4'-isopropylidenediphenol and 1-chloro-2,3-epoxypropane(liquid)	17.05	0	0	2.47	14.39	0.19	0	0
40	100-41-4	Ethylbenzene	327.90	175.88	0	0	49.12	26.49	76.41	0
43	107-21-1	Ethylene glycol	1,620.49	0	0	0	1,620.49	0	0	0
63	1330-20-7	Xylene	798.23	403.89	0	0	220.71	61.43	112.20	0
176	none	Organotin compound	2.94	0	0.01	0.14	2.79	0	0	0
179*	—	Dioxins	0.24	0.24	0	0	0	0	0	0
224	108-67-8	1,3,5-trimethylbenzene	32.36	16.45	0	0	2.37	4.81	8.73	0
227	108-88-3	Toluene	752.79	346.71	0	0	293.13	74.55	38.40	0
232*	none	Nickel compound	6.70	0	0.30	4.91	1.50	0	0	0
272	117-81-7	Bis (2-ethylhexyl) phthalate	86.99	0	0	3.97	83.02	0	0	0
283	none	Hydrogen fluoride and water-soluble salts	3.91	0	1.01	2.89	0	0	0	0
299*	71-43-2	Benzene	17.24	0.02	0	0	17.22	0	0	0
309	9016-45-9	Poly (oxyethylene) =nonylphenyl ether	1.20	0	0.09	0.90	0.12	0.09	0	0
310	50-00-0	Formaldehyde	1.38	1.38	0	0	0	0	0	0
311	none	Manganese and its compounds	10.87	0	0.30	5.22	5.35	0	0	0
Total			3711.87	944.34	2.27	25.97	2,332.84	170.72	235.74	0

Utsunomiya Manufacturing  
Division

## Utsunomiya Manufacturing Division

### Utsunomiya Manufacturing Division, Main Plant

[Location] 1-1-11, Yonan, Utsunomiya, Tochigi [Site area (building area)] Eco Technologies Company and Transportation Division: 170,000 m<sup>2</sup> (50,000 m<sup>2</sup>), Aerospace Company: 190,000 m<sup>2</sup> (90,000 m<sup>2</sup>) [Products manufactured] Eco Technologies Company: refuse collection vehicles, environmental equipment Aerospace company: Aircraft, unmanned aircraft, space-related equipment [Number of employees] Eco Technologies Company: 238, Aerospace Company: 1,623

#### Water Pollution Data (Discharge: Public sewage works Regulations: Sewerage Law, Utsunomiya City Ordinances)

Substance	Regulated values	Maximum values	Minimum values	Average values
pH	From 5 to 9	8.5	6.2	7.4
SS	Less than 600	469	< 1.0	< 105.3
BOD	Less than 600	355	0.9	67.9
Oil content (inorganic)	5	3.3	< 1.0	< 1.15
Oil content (organic)	30	10.9	< 1.0	< 6.42
Fluorine compounds	8	2.2	< 0.2	< 0.75
Cyanide	1	< 0.1	< 0.1	< 0.1
Cadmium	0.1	0.03	< 0.005	< 0.015
Total chromium	2	1.6	< 0.01	< 0.05
Hexavalent chromium	0.1	0.04	< 0.02	< 0.02

#### Air Pollution Data (Regulation: Air Pollution Control Law)

Substance	Facilities	Regulated values	Maximum values	Minimum values	Average values
SOx	Boiler	8	0.40	0.14	0.19
	Furnace	8	0.07	0.07	0.07
NOx	Boiler	250	54	54	54
	Furnace	180	60	28	50
PM	Boiler	230	43	35	39
	Dry-off furnace	0.3	0.013	0.005	0.009
		0.2	0.002	0.002	0.002

### Utsunomiya Manufacturing Division, South Plant

[Location] 1388-1, Esojima, Utsunomiya, Tochigi [Site area (building area)] 140,000 m<sup>2</sup> (30,000 m<sup>2</sup>) [Products manufactured] Aircraft [Number of employees] 483

#### Water Pollution Data (Discharge: Public sewage works Regulations: Sewerage Law, Utsunomiya City Ordinances)

Substance	Regulated values	Maximum values	Minimum values	Average values
pH	From 5 to 9	7.9	6.5	7.3
BOD	Less than 600	121	3.2	33.7
SS	Less than 600	80.2	10.9	221.8
Oil content (inorganic)	5	1.6	< 1.0	< 1.07
Oil content (organic)	30	12.8	< 1.0	< 3.6
Cadmium	0.1	< 0.005	< 0.005	< 0.005
Cyanide	1	< 0.1	< 0.1	< 0.1
Total chromium	2	0.04	< 0.01	< 0.01
Hexavalent chromium	0.1	< 0.02	< 0.02	< 0.02

#### Air Pollution Data (Regulation: Air Pollution Control Law)

Substance	Facilities	Regulated values	Maximum values	Minimum values	Average values
SOx	Boiler	8	0.11	0.11	0.11
NOx	Boiler	180	104	63	83
PM	Boiler	0.3	0.003	0.002	0.003

### Utsunomiya Manufacturing Division, South No. 2 Plant

[Location] 2-810-4, Miyanouchi, Utsunomiya, Tochigi [Site area (building area)] 100,000 m<sup>2</sup> (20,000 m<sup>2</sup>) [Products manufactured] Aircraft [Number of employees] 123

#### Water Pollution Data (Discharge: Public sewage works Regulations: Sewerage Law, Utsunomiya City Ordinances)

Substance	Regulated values	Maximum values	Minimum values	Average values
pH	From 5 to 9	7.8	6.8	7.3
BOD	Less than 600	122	< 1.0	< 31
SS	Less than 600	162	< 0.5	< 39.4
Oil content (inorganic)	5	3.3	< 1.0	< 1.21
Oil content (organic)	30	10.5	< 1.0	< 4.12
Fluorine compounds	8	0.5	< 0.2	< 0.22
Cadmium	0.1	< 0.005	< 0.005	< 0.005
Cyanide	1	< 0.1	< 0.1	< 0.1
Total chromium	2	1.6	< 0.01	< 0.05
Hexavalent chromium	0.1	0.08	< 0.02	< 0.03

#### Air Pollution Data (Regulation: Air Pollution Control Law)

Substance	Facilities	Regulated values	Maximum values	Minimum values	Average values
SOx	Boiler	8	0.52	0.2	0.2

### Utsunomiya Manufacturing Division, Handa Plant

[Location] 1-27, Shiohi-cho, Handa, Aichi [Site area (building area)] 50,000 m<sup>2</sup> (5,000 m<sup>2</sup>) [Products manufactured] Aircraft [Number of employees] 77

#### Water Pollution Data (Discharge: Public rivers Regulations: Water Pollution Control Law, Aichi Prefectural Ordinances, Handa City Ordinances, and Pollution Control Agreements with Handa City)

Substance	Regulated values	Maximum values	Minimum values	Average values
pH	6 ~ 8	7.5	6.6	6.95
BOD	25	15	1.9	6.1
COD	25	16	1.8	8.6
SS	25	6	1	3
Coliform count/ml	3000	47	30	32.8
Oil content	5	< 0.5	< 0.5	< 0.5
Cadmium	0.1	< 0.005	< 0.005	< 0.05
Cyanide	1	< 0.1	< 0.1	< 0.1
Hexavalent chromium	0.1	< 0.04	< 0.04	< 0.04
Total chromium	2	< 0.04	< 0.04	< 0.04

#### Air Pollution Data (Regulation: Air Pollution Control Law)

Substance	Facilities	Regulated values	Maximum values	Minimum values	Average values
SOx	Boiler	1.5	0.27	0.02	0.14
NOx	Boiler	180	140	59	99
PM	Boiler	0.1	0.004	0.002	0.003

[Data measurement] April 2004–March 2005

- Water Pollution [Notations] —pH: Hydrogen-ion concentration, BOD: Biochemical oxygen demand, SS: Concentration of suspended solids in water [Units] —mg/l, except pH
- Air Pollution [Notations] —HCL: Hydrogen chloride [Units] —SOx: m<sup>3</sup>N/h, NOx: ppm, PM: g/m<sup>3</sup>N, HCL: mg/m<sup>3</sup>N, Dioxins: ng-TEQ/m<sup>3</sup>N

## Utsunomiya Manufacturing Division, PRTR (All Plants Total)

## PRTR

(Substances whose amounts were one ton and over per year are shown below. The substances marked with an \* are Class 1 designated chemical substances.) [Units: tons/year, Dioxins: mg-TEQ/year]

Code	CAS Number	Chemical Substance	Amount handled	Air emissions	Water emissions (public water)	Transfer	Consumption	Solvent wiping Removal	Recycle	Landfill
40	100-41-4	Ethylbenzene	5.83	4.36	0	0	0.38	0.27	0.82	0
63	1330-20-7	Xylene	24.35	16.44	0	0.63	3.84	0.86	2.58	0
69*	none	Hexavalent Chromium	3.83	0	0	0.09	0.27	0.66	2.79	0
227	108-88-3	Toluene	22.16	15.39	0	3.58	2.93	0.06	0.19	0
Total			56.16	36.20	0	4.31	7.42	1.86	6.38	0



## Industrial Products Company

Industrial Products Company

[Location] 4-410, Asahi, Kitamoto, Saitama [Site area (building area)] 140,000 m<sup>2</sup> (90,000 m<sup>2</sup>) [Products manufactured] Multi-purpose engines (Robin engines), engine generators, engine pumps [Number of employees] 601

## Water Pollution Data (Discharge: Public sewage works Regulation: Kitamoto City Ordinances)

Substance	Regulated values	Maximum values	Minimum values	Average values
pH	5.0 ~ 9.0	8.6	6.1	7.7
BOD	600	337	92.3	281
SS	600	130	96.9	146
Oil content	30	10	3.1	6.9

## Air Pollution Data

The incinerators had been targeted for improvement, but incinerator use was suspended on September 28, 2001, leaving no targets for improvement.

## PRTR

(Substances whose amounts were one ton and over per year are shown below. The substances marked with an \* are Class 1 designated chemical substances.) [Units: tons/year, Dioxins: mg-TEQ/year]

Code	CAS Number	Chemical Substance	Amount handled	Air emissions	Water emissions (public water)	Transfer	Consumption	Solvent wiping Removal	Recycle	Landfill
40	100-41-4	Ethylbenzene	1.39	0.02	0	0	1.38	0	0	0
43	107-21-1	Ethylene glycol	3.39	0	0	0	3.39	0	0	0
63	1330-20-7	Xylene	7.18	0.06	0	0	7.12	0	0	0
227	108-88-3	Toluene	12.47	0.19	0	0	12.28	0	0	0
Total			24.44	0.27	0	0	24.17	0	0	0



## Tokyo Office

Tokyo Office

[Location] 3-9-6, Osawa, Mitaka, Tokyo [Site area (building area)] 160,000 m<sup>2</sup> (90,000 m<sup>2</sup>) [Number of employees] 1014

## Water Pollution Data (Discharge: Public sewage works Regulation: Mitaka City Ordinances)

Substance	Regulated values	Maximum values	Minimum values	Average values
pH	Over 5.7, under 8.7	8.4	7.3	8.1
BOD	300	160	4.8	59.4
SS	300	180	12	56.9
Oil content	5	ND	ND	ND
Manganese	10	0.16	ND	0.05

## Air Pollution Data (Regulation: Tokyo Pollution Control Ordinances)

Substance	Facilities	Regulated values	Maximum values	Average values
NOx	Boiler	0.263	0.066	0.052
SOx	Boiler	90	67	58
PM	Boiler	0.3	0.02	0.01

## PRTR

(Substances whose amounts were one ton and over per year are shown below. The substances marked with an \* are Class 1 designated chemical substances.) [Units: tons/year, Dioxins: mg-TEQ/year]

Code	CAS Number	Chemical Substance	Amount handled	Air emissions	Water emissions (public water)	Transfer	Consumption	Solvent wiping Removal	Recycle	Landfill
40	100-41-4	Ethylbenzene	26.81	0	0	0	26.81	0	0	0
63	1330-20-7	Xylene	117.37	0	0	0	117.37	0	0	0
224	108-67-8	1,3,5 - trimethylbenzene	14.41	0	0	0	14.41	0	0	0
227	108-88-3	Toluene	222.87	0.01	0	0	222.85	0	0	0
299*	71-43-2	Benzene	7.25	0	0	0	7.25	0	0	0
Total			388.71	0.02	0	0	388.69	0	0	0

[Data measurement] April 2004–March 2005

- Water Pollution [Notations] —pH: Hydrogen-ion concentration, BOD: Biochemical oxygen demand, SS: Concentration of suspended solids in water [Units] —mg/l, except pH
- Air Pollution [Notations] —HCL: Hydrogen chloride [Units] —SOx: m<sup>3</sup>N/h, NOx: ppm, PM: g/m<sup>3</sup>N, HCL: mg/m<sup>3</sup>N, Dioxins: ng-TEQ/m<sup>3</sup>N

## Product data

## Automobiles

Model		Legacy Outback	Forester	Impreza Sedan	R2	R1	Sambar Van	
Grade		3.0R	2.0 XS	WRX	i	R	VC	
Date sales began		2004/5	2005/1	2004/6	2004/11	2005/1	2004/9	
Vehicle type		CBA-BPE	CBA-SG5	TA-GDA	CBA-RC1	CBA-RJ1	LE-TV2	
Engine	Model	EZ30	EJ20	EJ20	EN07	EN07	EN07	
	Displacement (l)	2.999	1.994	1.994	0.658	0.658	0.658	
	Type	Horizontally opposed 6-cylinder 3.0 l, DOHC, 24-valve, variable valve timing + direct variable valve lift	Horizontally opposed 4-cylinder 2.0 l, SOHC, 16-valve	Horizontally opposed 4-cylinder 2.0 l, DOHC, 16-valve variable valve timing turbo	In-line 4-cylinder, SOHC	In-line 4-cylinder, DOHC 16-valve variable valve timing	In-line 4-cylinder, SOHC	
	Fuel type used	Premium Gasoline	Regular	Premium Gasoline	Regular	Regular	Regular	
	Highest power output (net) [kW(PW)/rpm]	184(250)/6600	103(140)/5600	184(250)/6000	34(46)/6000	40(54)/6400	35(48)/6400	
	Maximum torque (net) [N · m (kg · m) / rpm]	304(31.0)/4200	186(19.6)/4400	333(34.0)/3600	58(5.9)/5200	63(6.4)/4400	58(5.9)/3200	
Drive train	Drive system	AWD	AWD	AWD	2WD	2WD	4WD	
	Transmission	5AT	4AT	5MT	CVT	CVT	5MT	
Weight (kg)		1520 ~ 1540	1390 ~ 1410	1360 ~ 1380	800	800 ~ 810	930 ~ 940	
Fuel Consumption Rate	10.15 mode fuel economy (km/l)	11.0	13.0	11.8	22.5	24.0	16.6	
	CO <sub>2</sub> emissions (g/km)	211.1	178.6	196.8	103.2	96.7	139.9	
	Reference	FY 2010 fuel economy standard achieved (○ indicates +5% over target)	◎	○	—	◎	◎	◎
		Meets the Japan's Green tax plan target	◎	—	—	◎	◎	—
		Law on Promoting Green Purchasing adopted	○	○	—	○	○	○*2
Exhaust Emissions	Regulations adopted	2005 Regulations	2005 Regulations	2000 Regulations	2005 Regulations	2005 Regulations	2002 Regulations	
	Certification level of low emission vehicles	50% reduction beyond 2005 Standards (☆☆☆)	50% reduction beyond 2005 Standards (☆☆☆)	25% reduction beyond 2000 Standards (☆)	50% reduction beyond 2005 Standards (☆☆☆)	50% reduction beyond 2005 Standards (☆☆☆)	50% reduction beyond 2002 Standards (☆☆☆)	
	10.15 mode or 10.15 + 11 mode regulation figures (in g/km)	CO	1.15	1.15	0.67	1.15	1.15	3.30
		HC	—	—	0.06	—	—	0.07
		NMHC*1	0.025	0.025	—	0.025	0.025	—
		NOx	0.025	0.025	0.06	0.025	0.025	0.07
	Reference	Low-pollution vehicle system designated by eight Kanto area prefectures and cities	50% reduction in emissions from 2005 standards	50% reduction in emissions from 2005 standards	Good Low Pollution Vehicle	50% reduction in emissions from 2005 standards	50% reduction in emissions from 2005 standards	Excellent Low pollution Vehicle
LEV-6 designation by six Kaihanshin area prefectures and cities		17LEV	17LEV	TLEV	17LEV	17LEV	LEV	
Noise	Regulations adopted	1998 Regulations	1998 Regulations	1998 Regulations	1998 Regulations	1998 Regulations	2000 Regulations	
	Acceleration noise regulation figures (dB-A)	76	76	76	76	76	76	
Type of air conditioner refrigerant and amount of refrigerant used		HFC134a, 400g	HFC134a, 600g	HFC134a, 500g	HFC134a, 400g	HFC134a, 400g	HFC134a, 400g	
Substances with environmental impact		Lead: JAMA year 2006 target achieved (less than one-tenth of the 1996 level)*3	Lead: JAMA year 2006 target achieved (less than one-tenth of the 1996 level)*3	Lead: JAMA year 2006 target achieved (less than one-tenth of the 1996 level)*3	Lead: JAMA year 2005 target achieved (less than one-third of the 1996 level)	Lead: JAMA year 2005 target achieved (less than one-third of the 1996 level)	Lead: JAMA year 2005 target achieved (less than one-third of the 1996 level)	
Recycling	Uses of easy-to-recycle materials	There are many uses for the easy-to-recycle thermoplastic resin in car bumpers, instrument panels, door trim, etc.	There are many uses for the easy-to-recycle thermoplastic resin in car bumpers, instrument panels, door trim, etc.	There are many uses for the easy-to-recycle thermoplastic resin in car bumpers, instrument panels, door trim, etc.	There are many uses for the easy-to-recycle thermoplastic resin in car bumpers, instrument panels, door trim, etc.	There are many uses for the easy-to-recycle thermoplastic resin in car bumpers, instrument panels, door trim, etc.	There are many uses for the easy-to-recycle thermoplastic resin in car bumpers, instrument panels, door trim, etc.	
	Uses of recycled materials	Materials recovered from bumpers are used in some plastic parts; clothing hems are used for interior parts; used fishnets are used to make engine covers; used paper is recycled as anti-vibration material.	Materials recovered from bumpers are used in some plastic parts; clothing hems are used for interior parts; used fishnets are used to make engine covers; paint residue and used paper are recycled as anti-vibration material	Materials recovered from bumpers are used in some plastic parts; insulators are made from recycled PET bottles; paint residue and used paper are recycled as anti-vibration material	Materials recovered from bumpers, PET bottles, and clothing hems are used in some plastic parts; paint residue and used paper are recycled as anti-vibration material	Materials recovered from bumpers, PET bottles, and clothing hems are used in some plastic parts; paint residue and used paper are recycled as anti-vibration material	Materials recovered from bumpers are used in some plastic parts; recycled Polypropylene is used to make air purifiers; clothing hems are used to make anti-noise materials; used paper is recycled as anti-vibration materials	
	Material indication	Plastic parts of 100g or more and rubber parts of 200g or more display their material	Plastic parts of 100g or more and rubber parts of 200g or more display their material	Plastic parts of 100g or more and rubber parts of 200g or more display their material	Plastic parts of 100g or more and rubber parts of 200g or more display their material	Plastic parts of 100g or more and rubber parts of 200g or more display their material	Plastic parts of 100g or more and rubber parts of 200g or more display their material	
	A design that allows for easy disassembly	Air bags and tail lights are easy to remove. Due to the indication, it is possible to confirm the bumper material prior to removal.	Seat cushions are easy to remove. Due to the indication, it is possible to confirm the bumper material prior to removal.	Seat cushion and instrument panels are easy to remove. Due to the indication, it is possible to confirm the bumper material prior to removal.	Alternators rear gates are easy to remove. Due to the indication, it is possible to confirm the bumper material prior to removal.	Alternators are easy to remove. Due to the indication, it is possible to confirm the bumper material prior to removal.	Glove compartments are easy to remove from instrument panel. Due to the indication, it is possible to confirm the bumper material prior to removal.	

\*1 NMHC: Non-Methane Hydrocarbon \*2 By the end of the 2004 fiscal year, Sambar Van had conformed to the standards of the Law on Promoting Green Purchasing. From the 2005 fiscal year, we are reviewing the standards of the Law on Promoting Green Purchasing. (A car that meets 2010 Standards of a 75% reduction in Exhaust Emissions, 2005 Standards of at least a 50% reduction in exhaust emissions, and FY 2010 fuel efficiency standards.) \*3 This corresponds to cars manufactured from February, 2005.

**General-Purpose Engine**

Item	Category	General-Purpose Engine
Engine Model		EH09-2 model
Engine Form		Air-cooled four cycle single cylinder OHV gasoline engine
Maximum Output Capacity (kW/rpm)		2.1/4200
Total Displacement (ml)		86
Dry Mass (kg)		9.9
Exhaust Emissions	HC + NOx (g/kW · h)	11.0
	CO (g/kW · h)	469.4
	EPA Phase 2 (U.S.)	Conforms
	CARB Tier 2 (California)	Conforms
	EC SN2 Stage 2 (Europe)	Conforms
Noise	Non load/3600rpm, 5m average (dBA)	68.9

**(Reference) Exhaust emissions regulations**

exhaust emissions regulations	Category	Class	Emission amount (ml)	CO (g/kW · h)	HC+NOx (g/kW · h)
EPA Regulations after 2005 (Phase II)	Non-handheld	Class I -B	66≤ml<100	610	40
CARB Regulations after 2005	Small off-road	Horizontal	80<ml<225	549	16.1

EU exhaust emissions regulations	Category	Class	Emission amount (ml)	CO (g/kW · h)	HC+NOx (g/kW · h)
EU 97/68/ EC-2002/ 88/EC	Non-handheld	Stage II	66≤ml<100	610	40

**Other data**

**Qualified Personnel in Pollution Control Management**

Qualification type	Total number of personnel holding qualifications		
Pollution control managers	Chief managers	8	
	Air-related	Type 1	7
		Type 2	7
		Type 3	45
		Type 4	16
	Water-related	Type 1	8
		Type 2	23
		Type 3	15
	Noise-related	45	
	Vibration-related	38	
Tokyo Pollution Control Managers	3		
Managers Responsible for Tokyo Water Quality	5		
Energy management experts	Heat management	21	
	Electronic management	15	
Working environment measurement experts		3	
Technical managers for industrial waste		14	
Management representatives for industrial waste subject to special control		38	
Internal environmental auditors (internal qualification)		552	

As of March 31st, 2005

**Number of Employees Receiving Environmental Education by Level (FY 2004)**

Type of education or training	Number of employees receiving education
Education for new hires	262
Education for persons newly promoted	1,102
Total	1,364



## CHRONOLOGY OF FHI'S ENVIRONMENTAL EFFORTS

	Management Division	Automobile Division	Other Divisions
Aug. 1973		Established standards for making resin ingredients (automobile industry guidelines were determined in 1991)	
Oct. 1985			Developed the electric refuse collection vehicle EV405
Feb. 1987		Introduced the Subaru ECTV, the first electro-continuously variable transmission in the world	
Aug. 1990	Established an Environmental Issues Improvement Measures Project	Began setting up facilities at Subaru dealers for collection and reuse of CFCs used in air conditioners	
Apr. 1991	Established the Safety, Emission, Fuel Economy (SEF) Committee		
Oct.	Established the Recycling Committee (in 1997, the name was changed to the Recycling Engineering Development Committee and, in 1999, to the Recycling Promotion Committee)	Announced a Flexible Fuel engine at the Tokyo Motor Show	
Apr. 1992	Established the Environmental and Safety Technology Department		Announced three types of generators installed with OHV engines (2 kW, 2.8 kW, 4.1 kW)
May		Became the first in the automobile industry to recycle painted bumpers for use in interior and exterior parts	
Nov.		Completed installation of fluorocarbon collection and reuse equipment for car air conditioners at Subaru dealers	
Jan. 1993		Began collecting scrapped bumpers in the Tokyo and Kanagawa areas in cooperation with a distribution company	
Mar.	<ul style="list-style-type: none"> <li>• Established the Voluntary Environmental Protection Plan.</li> <li>• Set up the Corporate Environment Committee.</li> <li>• Set up the Engineering Environment Committee and the Plant Environment Committee developed from the SEF Committee</li> </ul>		
Apr. 1994		Completed replacement of air conditioner refrigerants from CFC-12 to HFC-134a	
Jan. 1995			Began manufacturing multipurpose engines that met the California Air Resources Board (CARB) emission regulations
Apr.		Began sales of the electric vehicle, Sambar EV	
Jun.		Developed a new environment-friendly protective coating film	
Aug.			Began delivering a low-pollution CNG refuse collection vehicle
Sep.			Delivered Japan's first container for refuse transportation by railroad freight car and a container transport vehicle for transportation to Kawasaki City
Oct.		Displayed a direct gasoline injection engine and a hybrid electric vehicle at the Tokyo Motor Show	
Feb. 1996		Developed and implemented the Roller Press method, a new technique for removing the coating film, and began bumper-to-bumper recycling	
Apr.	Established the Environment Plan for 2000		
Oct.			Developed and began sales of the container collection and measurement system for refuse collected for a fee
Jul. 1997	Set up the Environmental Affairs Promotion Office		Developed a solid waste ash melting furnace
Sep.			Delivered the first Fuswton, high-rise building waste management system
Feb. 1998	Established the Recycling Initiative for End-of-Life Vehicle Voluntary Action Plan for Automobile Recycling		
Apr.	Established Environmental Policy		
Jun.	Published the environmental pamphlet "For Harmony between People, Society, and the Earth"		
Oct.		Completed nationwide extension of JAMA's CFC-12 collection and destruction system	Announced the four-stroke OHV engine (EH09D) used in rammers, an alternative to the two-cycle engine
Nov.	SIA in the U.S.A. acquired ISO 14001 certification		
Mar. 1999	Gunma Manufacturing Division acquired ISO 14001 certification		
May	Saitama Manufacturing Division acquired ISO 14001 certification		
Jun.		Began recycling PET bottles for use in interior parts	
Jul.	<ul style="list-style-type: none"> <li>• Transportation and Ecology Systems Division in the Utsunomiya Manufacturing Division acquired ISO 14001 certification</li> <li>• Hosted first Affiliated Companies Environmental Problems meeting</li> </ul>		
Oct.	Started the General Managers' Meeting on the Environment at the Gunma Manufacturing Division		
Jan. 2000		Began reuse of painted bumper scrap from production process for the Pleo's mass-produced bumpers	
Mar.	Eliminated the incinerator at the Tokyo Office	Expanded the scrap bumper collection system to the Tohoku area and built a nationwide system in Japan	Fuswton won the Resource Recycling Technology System Award for fiscal 1999 from the Ministry of International Trade and Industry's Environment and Industrial Location Bureau
Aug.		Began sales of the new Impreza, and all models met authorized low emission standards	
Sep.	Published the 2000 Environmental Report, aggregating results of all environmental activities for fiscal 1999		
Oct.		Began recycling of auto window glass recovered from ELVs as glass wool soundproofing material	

Note: For information about railway cars and buses, please refer to pp. 58-59 of the "2003 Environmental Report".

	Management Division	Automobile Division	Other Divisions
Nov.			<ul style="list-style-type: none"> <li>Unveiled the Subaru Small Wing Turbine Generator System</li> <li>Began sales of the new LP0 low-noise refuse collection vehicle</li> </ul>
Dec.	Eliminated the incinerator at the Gunma Manufacturing Division, Yajima Plant		
Mar. 2001	Achieved zero emissions at the Gunma Manufacturing Division		
May			Began sales of the multipurpose Robin EX series engine in order to lower exhaust emissions, lower the level of noise, and lower the level of vibration.
Jun.	Published the 2001 Environmental Report, aggregating results of all environmental activities for fiscal 2000		
Sep.	<ul style="list-style-type: none"> <li>Eliminated the incinerator at the Utsunomiya Manufacturing Division</li> <li>Eliminated the incinerator at the Saitama Manufacturing Division</li> </ul>		
Oct.		Exhibited the next generation hybrid minicar, the HM-01, at the Tokyo Motor Show	
Jan. 2002			The Subaru Small Wind-Power Generation System won the New Energy Grand Prize for fiscal 2001 from the Agency for Natural Resources and Energy
Feb.		Began sales of the new Forester. All models met the fiscal 2010 fuel economy standards and were accepted as good low emissions vehicles (G-LEV)	
Mar.	Utsunomiya Manufacturing Division and Saitama Manufacturing Division achieved zero emissions		
May	Established the Environmental Conservation Program (fiscal 2002 through fiscal 2006)	The company for the development of automobile batteries was jointly established by NEC Corp. and FHI.	
Jun.	Published the 2002 Environmental Report		
Jul.		Consigned matters involving the collection and destruction of CFCs to the Japan Automobile Recycling Promotion Center	
Oct.		Limited marketing of the Legacy B4, CNG (Compressed Natural Gas) Vehicle	
Nov.			Switching to Pollution-Free Paint Remover for Regular Servicing of Airplanes won an award from Bouei Choutatsu Kiban Seibi Kyoukai (Defense Procurement and Infrastructure Association)
Apr. 2003	Saitama Manufacturing Division received a regular assessment for ISO 14001		Developed ASR Pre-Processing Separating System
May		<ul style="list-style-type: none"> <li>Full model change of Legacy to launch the New Legacy</li> <li>All models met the fiscal 2010 fuel economy standards except for 2.0 GT spec.B.</li> <li>2.0l SOHC engine equipped cars, which achieved a 75% reduction in emissions compared to 2000 standards.</li> </ul>	Developed a Pollution-Free Paint Remover for Regular Servicing of Airplanes, which won a special award from the Japan Aeronautical Engineer's Association
Jun.	<ul style="list-style-type: none"> <li>Published 2003 Environmental Report</li> <li>Utsunomiya Manufacturing Division received a regular assessment for ISO 14001</li> </ul>		
Jul.	<ul style="list-style-type: none"> <li>Set up the six star mitsuraboshi corporate symbol</li> <li>Established Subaru Visitor Center at Gunma Manufacturing Division, Yajima Plant</li> </ul>		Solid waste ash melting furnace developed jointly with Ogihara Co., Ltd. acquired technology authorization from the Japan Waste Research Foundation.
Aug.		<ul style="list-style-type: none"> <li>Legacy B4 CNG challenged to complete a full circuit of Japan</li> <li>Conducted the presentation of Subaru Mobility techniques</li> </ul>	
Sep.	Achieved zero emissions at the Tokyo Office		
Nov.		The Legacy won the 2003 – 2004 Japan Car of the Year Award	
Dec.		<ul style="list-style-type: none"> <li>Developed a new processing technology for automotive parts, the "hard broaching method"</li> <li>Launched a new minicar, the Subaru R2. Achieved fuel economy of 24.0 km/l(10-15 mode) (R) and a 75% reduction in emissions compared to 2000 standards. (R and i)</li> </ul>	
Jan. 2004	The Head Office and the Tokyo Office acquired ISO 14001 certification		
May			The Industrial Products Company (V model two cylinder engine) received the "Supplier of the Year" award from Cummins
June	Published the 2004 Environmental & Social Report		
November	Received public recognition of office excellence for the hiring of disabled persons	<ul style="list-style-type: none"> <li>Gunma factory paint sludge recycling plant received the "Resource Recycling Technology System Commendation"</li> <li>Subaru's R2 won RJC's annual "Car of the Year" special award for best minicar of 2005</li> </ul>	
December		The R1 and the Impreza were newly adapted to Subaru Transcare series for the Disabled. New functions were added to the R2 and the Sambar.	
Jan. 2005		In response to the Law on Recycling End-of-Life Vehicles, the Subaru car recycling system was implemented	
February			The Natural Gas Engine Cogeneration system started operations at the Utsunomiya Manufacturing Division
March	<ul style="list-style-type: none"> <li>The Subaru Parts Distribution Center (Ohta City) acquired ISO 14001 certification (extending the scope of Gunma Manufacturing Division's certification)</li> <li>The Subaru Parts &amp; Accessories Division (Saitama City) acquired ISO 14001 certification (extending the scope of head office's certification)</li> <li>Views on corporate social responsibility were clarified in "CSR Policy"</li> </ul>	Hit the three million mark for worldwide Legacy production	
May			Began sales for the new model refuse collection vehicle, the "Fuji Mighty LP71 model series"
June	FHI group unveiled its "Environmental Logo"		

# Please Give Us Your Opinions and Ideas.

Thank you for reading Fuji Heavy Industries' Year 2005 Environmental & Social Report.

This report explains the measures for environmental conservation and social actions implemented in fiscal 2004 focusing primarily on FHI. We will continue to publish the report annually. We believe that your opinions and ideas will help make the reports more complete. Please take a moment to fill in the questionnaire on the reverse side and fax it to us at the number shown. Thank you for your cooperation.

## Reports on the results of the questionnaire for our Year 2004 Environmental & Social Report

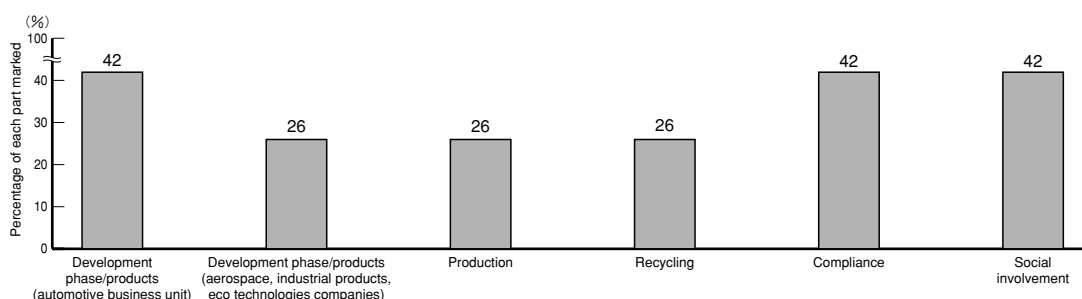
Our sincere thanks to the many individuals that completed last year's questionnaire (published in June 2004). These are the results.

### 1. About the 2004 Environmental & Social Report

( 1 ) Were the contents of this report sufficient and appropriate for an environmental report?



( 2 ) What parts impressed you most? (Mark all that apply.)



### 2. On what topics would you like more detailed information?

- ( 1 ) I expect more detailed examples and explanations on LCA.
- ( 2 ) I would like you to disclose detailed information on the communication with stakeholders.
- ( 3 ) I would like to see a proposal for environmental activities with user participation such as stopping idling.
- ( 4 ) I would like to know the specific goals and plans for recycling, and the numerical value of the company-wide environmental burden, with concrete measures and goals.
- ( 5 ) I expect further improvement in vehicle safety and CO<sub>2</sub> reduction.
- ( 6 ) I would like you to incorporate details concerning the development of clean energy vehicles.
- ( 7 ) I would like you to introduce the promotion of blood donations at each business site in terms of social involvement.
- ( 8 ) I would like you to enrich the explanation of English abbreviations in the glossary.
- ( 9 ) I would like to know your current efforts and plans for EU directive on restriction of environmentally hazardous substances.
- ( 10 ) I would like to have a brief summary of current efforts for green procurement.
- ( 11 ) I would like you to incorporate improved cases of reduction in input resources in the production phase.
- ( 12 ) There are some parts that are difficult to understand in the diagrams and tables.
- ( 13 ) Disclosure of negative information (compliance, relationship with customers, etc.). If there have been no such cases so far, please disclose that fact.

### 3. Please provide your honest opinion about the environmental and social report and our environmental activities.

- ( 1 ) It would be better if the explanation concerning Manufacturing Vehicle was easier for children to understand considering that awareness of the environment has increased in school education.
- ( 2 ) Please clarify the goals and objectives of your efforts.
- ( 3 ) Recycling items would be better described in the perspective of LCA. I think that the issue is how we can reduce shredder dust from now on.
- ( 4 ) I expect further product development based on LCA approaches.
- ( 5 ) I would like to make the advanced cases such as zero emissions at multi business bases as models.
- ( 6 ) I think that your efforts are aggressive, and the report is summarized well and easy to understand.
- ( 7 ) Please introduce committees and others' efforts besides the activities in each phase or of each business unit.
- ( 8 ) I would like to know about the coexistence with people of the local communities since the plant is located in the town.

To the extent possible, we have incorporated the results of the year 2004 questionnaire, including the ideas above in our Year 2005 Environmental & Social Report in order to enrich the contents. However, there is always room for improvement, and we again solicit the opinions and guidance of our readers.

**Q1. How did you learn about the 2005 Environmental & Social Report?**

- Newspaper article   
  Magazine article   
  FHI Web site   
  Other Web site   
  FHI employee  
 FHI business partner or supplier   
  Subaru dealers   
  Friend or acquaintance  
 Other (Please specify \_\_\_\_\_)

**Q2. Were the contents of this report sufficient and appropriate for an environmental report?**

- Definitely   
  Very much   
  Fair   
  Not very much   
  Not at all

Please state your reasons.

Reasons: \_\_\_\_\_

**Q3. What do you think of FHI's activities?**

Environmental aspect :  Definitely sufficient   
 Sufficient   
 Acceptable   
 Not sufficient   
 Definitely not sufficient

Social aspect :  Definitely sufficient   
 Sufficient   
 Acceptable   
 Not sufficient   
 Definitely not sufficient

Please state your reasons.

Reasons: \_\_\_\_\_

**Q4. What parts impressed you most? (Please mark all that apply)**

- Corporate overview (Top messages, CSR)   
  New Voluntary Plans for the Environment  
 Environmental audit   
  Environmental accounting  
 Overall achievements in fiscal 2004 and fiscal 2005 goals   
  Development phase/products (automotive business unit)  
 Development phase/products (aerospace, industrial products, eco-technologies company)   
 Production   
 Recycling  
 Logistics   
 Activities by affiliated companies (domestic/overseas)   
 Compliances  
 Relationship with customers   
 Relationship with employees   
 Social involvement   
 Plant site data  
 Product data   
 FHI environmental chronology

**Q5. Please indicate which topics you would like more detailed information.**

\_\_\_\_\_

\_\_\_\_\_

**Q6. What is your opinion of FHI's environmental activities based on this report?**

\_\_\_\_\_

\_\_\_\_\_

**Q7. What is your relationship with FHI?**

- Customer   
  Resident of an area neighboring and FHI installation   
  Engaged in government administration  
 FHI shareholder   
 News media-related   
 Related to an environmental NGO or NPO  
 Finance- or investment-related   
 Business partner/supplier   
 Employee or family member of employee  
 Other (please specify \_\_\_\_\_)

**Thank you for your cooperation. If you agree with the use of personal information,\*1 please provide some information about yourself (optional).**

Name \_\_\_\_\_ ( \_\_\_\_\_ ) Male/female \_\_\_\_\_ Age \_\_\_\_\_

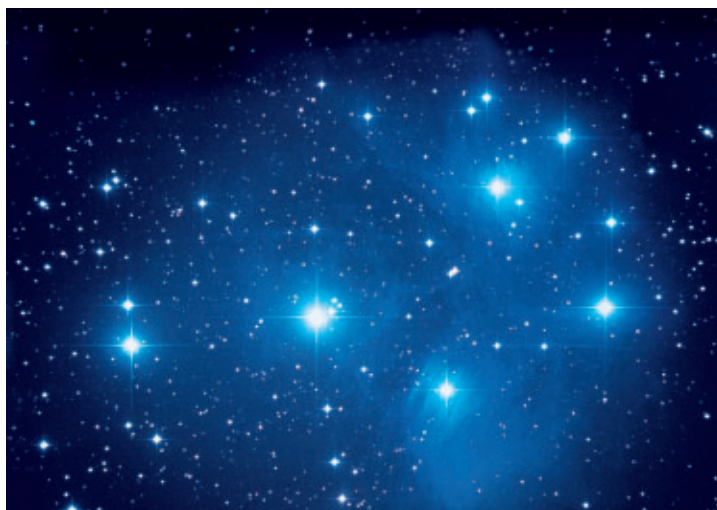
Occupation \_\_\_\_\_ Employer \_\_\_\_\_ Department/title \_\_\_\_\_

Address (workplace or home) \_\_\_\_\_ Telephone ( \_\_\_\_\_ ) \_\_\_\_\_

\*1. The use of personal information: Your personal information will be used as data in order to improve the contents of the Environmental and Social Report. Furthermore, we will not disclose that information to any third party without due cause.

To: Environmental Affairs Promotion Office, Fuji Heavy industries Ltd.

**FAX : 03-3347-2530**



The picture on the cover of the 2005 Environmental & Social Report shows the Pleiades star cluster, "Subaru," in Japanese (the image was partially processed for the cover use), based on which our six-star mitsuraboshi corporate symbol is designed.

In Japan, the Pleiades star cluster appears like fireflies flying in flocks above your head at dusk in winter. We can see the stars in the winter night sky even in cities when the air is clear. We can count 6 to 7 stars of the Pleiades star cluster with the naked eye. In order to enjoy the beautiful stars forever, we need to continue to protect the precious global environment.

©Aflo Foto Agency

---

Please contact Fuji Heavy Industries' Environmental Affairs Promotion Office with questions or comments about this report.

**TEL 03-3347-2036**

**FAX 03-3347-2530**

This environmental & social report is also available on FHI's Web site:

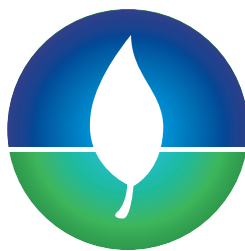
**<http://www.fhi.co.jp/>**

**FUJI HEAVY INDUSTRIES LTD.**

7-2, Nishi-Shinjuku 1-chome, Shinjuku-ku, Tokyo 160-8316, Japan

# FUJI HEAVY INDUSTRIES LTD.

7-2, Nishi-Shinjuku 1-chome, Shinjuku-ku, Tokyo 160-8316, Japan



This report is printed on FSC certified paper containing 50% used paper, and with 100% vegetable oil-based ink for environmentally friendly waterless printing (non-VOC ink) that generates less hazardous wastewater.

**Published in September 2005**