# **2007** Social & Environmental Report





# Social & Environmental Report

#### **Editorial Policy**

This report has been issued to introduce the social and environmental achievements of Fuji Heavy Industries Ltd. (FHI), its domestic and overseas affiliated companies, in order to set the stage for communication with stakeholders including our customers, shareholders, partner companies, local communities and employees, and to further improve our activities for environmental protection and social activities.

In order to make this report easy to understand, we focused only on major issues as much as we could, and included our special achievements in "Featured Articles". For this reason, we have separately placed "Supplementary Volume for Data related to the 2007 Social and Environmental Report" on our Web site, and report other information such as the calculation results of environmental accounting and the details on our activities.

#### Address of our Web site introducing our environmental achievements http://www.fhi.co.jp/english/envi/report/index.html

We arranged for a third party assessment by Ms. Mizue Unno (Manager Director of So-Tech Consulting, Inc.) on the contents of this report, since we believed we could receive informative opinions to proceed with our activities toward a "company fulfilling its social responsibilities". The resulting assessment is placed at the end of this report.

#### Period Covered

This report covers our achievements and activities in fiscal 2006 (April 2006 through March 2007; for overseas affiliated companies: January through December 2006) and some activities from prior fiscal years and others conducted just before the issuance of this report.

#### **Guidelines Referenced**

"Environmental Report Guidelines (2003)" by the Ministry of the Environment

#### Inquiries about This Report

Fuji Heavy Industries Ltd. General Administration Department, CSR & Environmental Affairs Promotion Office

CSR & Environmental Affairs Promotion Office

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#### **Range of the Report**

Companies Covered in the Report

Fuji Heavy Industries Ltd. (Main manufacturing facilities)

Subaru Automotive Business [Gunma Manufacturing Division (Ota City and other), Tokyo office (Mitaka City)]

Industrial Products Company [Saitama Manufacturing Division (Kitamoto City, Saitama Prefecture)]

Aerospace Company [Utsunomiya Manufacturing Division (Utsunomiya City, Tochigi Prefecture, Handa City, Aichi Prefecture)]

Eco Technologies Company [Utsunomiya Manufacturing Division (Utsunomiya City, Tochigi Prefecture)]

#### **Domestic Affiliated Companies**

(Members of Domestic Affiliated Company Subcommittee)

- 1 Fuji Robin Industries Ltd. \*1 (Numazu City, Shizuoka Prefecture)
- 2 Yusoki Kogyo K.K. (Handa City, Aichi Prefecture)
- 3 Fuji Machinery Co., Ltd. (Maebashi City, Gunma Prefecture)
- 4 Ichitan Co., Ltd. (Ota City, Gunma Prefecture)
- 6 Kiryu Industrial Co., Ltd. (Kiryu City, Gunma Prefecture)
- 6 Subaru Logistics Co., Ltd. (Ota City, Gunma Prefecture)

#### **Overseas Affiliated Companies**

(Members of North American Environmental Committee)

- Indiana Automotive, Inc.(Lafayette, Indiana)
- Ø SOA:Subaru of America, Inc. (Cherry Hill, New Jersey)
- SCI:Subaru Canada, Inc. (Mississauga, Ontario)
- O SRD:Subaru Research & Development, Inc.(Ann Arbor, Michigan)
- 6 RMI:Robin Manufacturing U.S.A., Inc.(Hudson, Wisconsin)

We introduce some activities of other affiliate companies in addition to those of the above companies in this report.

\*1: We divested Fuji Robin Industries Ltd. on May 15, 2007 by subscribing all the company's shares we had owned (7,525,000 shares) to the takeover bid by Makita Corporation.



Corporate Overview (As of March 31, 2007)

Eulii Hooyay Industrias Ltd

Name	i uji neavy industries Ltu.
Established	July 15, 1953
Paid-in capital	153.7 billion yen
Employees	25,598(Consolidated) 12,801(Non-consolidated)
Head Office	Subaru Building, 7-2 Nishi-shinjuku 1-chome,
	Shinjuku-ku, Tokyo 160-8316 Japan
	Phone: 03-3347-2111 [Main switchboard] (Domestic)
	Phone: +81-3-3347-2111 (International)
Sales	1494.8 billion yen(Consolidated)
	964.4 billion yen(Non-consolidated)
Operating Income	47.9 billion yen(Consolidated)
	33.5 billion yen (Non-consolidated)
Ordinary Income	42.2 billion yen(Consolidated)
	27.1 billion yen(Non-consolidated)
Number of Consolidated Subsidiary	43(Domestic), 18(Overseas)
Number of Affiliated Company	16(Domestic), 2(Overseas)



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#### Contents of Supplementary Volume for Data related to the 2007 Social & Environmental Report

We have placed "Supplementary Volume for Data related to the 2007 Social & Environmental Report" separately on our website so that you can understand more about our activities for society and environment. The data can be easily downloaded from our website. Please visit our site at http://www.fhi.co.jp/english/envi/report/index.html **Chronology of FHI's Social & Environmental Activities** Chronology of FHI's Social & Environmental activities (from 1973 to 2007) **Corporate Overview** Locations of FHI's Major Facilities and Affiliated Companies, the Number of Employees, Production Items, and etc Financial Data, Data related to Employment **Environmental Management Data** FHI's Environmental Conservation Organization FHI's Environmental Performance Data Environmental Accounting / Data Collection Result FHI (non-consolidated), Domestic / Overseas Affiliated Companies Environmental Measurement Data (1) Gunma Manufacturing Division (2) Utsunomiya Manufacturing Division (3) Saitama Manufacturing Division (4) Tokyo Office (5) Six Domestic Affiliated Companies Social & Environmental Activities within Local Communities Gunma Manufacturing Division / Utsunomiya Manufacturing Division / Saitama Manufacturing Division / Tokyo Office / Head Office /

Domestic Affiliated Companies

# **Messages from the CEOs**



Ikuo Mori President and CEO, Fuji Heavy industries Ltd. (right), Shunsuke Takagi Representative Director of the Board Corporate Executive Vice President







#### **FHI Environment Logo**

In June 2005, we created the FHI Group's environment logo.

ment 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 *product that are friendly to the earth, society, and people*, which is stated in the FHI Environmental Policy.

#### **Our Mission Is to Tackle a Variety of Social Problems as a Good Corporate Citizen**

 $Ikuo\ Mori \ {}^{\text{President and CEO,}}_{\text{Fuji Heavy Industries, Ltd.}}$ 

My name is Ikuo Mori, and I am the President and CEO of FHI.

I would like to express my appreciation for your interest in this report.

On February 28 2007, we released a new medium-term management plan covering the four years from fiscal 2007 to 2010, with an aim to further heighten the corporate value of FHI. To fulfill the objective of this management plan, we will make efforts toward " a compelling company with strong market presence" as we usually have, under business visions such as "a company fulfilling its social responsibilities" and "provision of attractive, unique products which can respond to the changes in the social environment", with a keyword of "Everything we do is for our customers".

We acknowledge that CSR (corporate social responsibility) is fundamental to our business activities, and believe that our mission as a "good corporate citizen" is to tackle a variety of social problems through the business activities of FHI. To proceed with this mission, it is essential for us to become a company worthy of the enduring trust of our stakeholders and society. In keeping this end, we will actively conduct the following activities.

First, we will alter our corporate culture to develop a "customers come first" culture in order to meet customer demands and expectations. In support of this idea, we at the FHI Group will work together with a customer-oriented mindset to become a company able to satisfy customers in all respects including products, quality and service.

Next, as a transportation manufacturer, we will conduct activities even more actively in all processes of our business to tackle numerous environmental problems such as global warming. We will make special efforts for the products we produce, aiming at "combination of comfortable, reliable new driving performance and the friendliness to global environment". We hope you understand our social and environmental activities through this "2007 Social and Environmental Report", and hope to receive your frank opinions on our activities.

#### We Will Promote CSR Philosophy and Activities Even More Actively within the Company

Shunsuke Takagi Representative Director of the Board, Corporate Executive Vice President, Fuji Heavy Industries, Ltd.

My name is Shunsuke Takagi, and I am the Representative Director of the Board, Corporate Executive Vice President of FHI. I would like to offer some brief remarks as the Chairman of the CSR Committee and the Corporate Environment Committee. In our new medium-term management plan, we have designated the idea of becoming "a company fulfilling its social responsibilities" as one of the pillars of our business visions.

We conducted an in-house survey on the employees' awareness of CSR in fiscal 2006, and grasped what challenges we faced to improve employees' awareness and education. To proceed with such challenges, we will further promote our CSR activities and philosophy under the concept of "combination of aggressive CSR (social contributions through business activities) and defensive CSR (compliance with laws and regulations)" within the company in fiscal 2007, in addition to the activities to promote employees' understanding on our CSR Policies.

Taking about global environment issues, fiscal 2006 was the last fiscal year to implement the Third Voluntary Plan for the Environment. Regretfully, we failed in meeting our targets with respect to some greener products (in terms of improvement in fuel economy, cleaner exhaust emissions and development of products using clean energy for vehicles) due to some changes in recent market trends and in our product development policies. In order to meet the targets of these categories at an early stage of the Fourth Voluntary Plan for the Environment newly launched from fiscal 2007, we will make efforts even more actively aiming at contributing to society through our products, and by offering our customers greener products through a system of environmentally clean plants, logistics networks and dealers. Your continuous support shall be highly appreciated.

# Introduction of SUBARU Business Overview

# Developing and Manufacturing Products that Meet the Needs of the Age Using Innovative, Cutting-Edge Technologies



The new Impreza seeks to offer superb environmental performance, and delivers a pleasurable driving experience by offering both superior maneuverability and ample space in the interior. (The photo above is of the Impreza 15S.)

The R1e is a high-performance, compact electric vehicle. With a high-speed charger, the batteries can be fully charged within quite a short period of time. Its technologies to reduce greenhouse gas emissions were very well received, and in recognition of these advances, the vehicle received the Minister of the Environment's fiscal 2006 Commendation for an Activity Preventing Global Warming <sup>43</sup>



#### Offering Our Products under the Motto of "Everything we do is for our customers"

#### **Subaru Automotive Business**

[Location] Gunma Manufacturing Division (Ota City, Gunma Prefecture) Tokyo office (Mitaka City, Tokyo)

Subaru has released a wide range of products ever since it first released the Subaru 360, a strong-selling, precedent-setting mini car, in 1958. In 1966, the Subaru 1000, a vehicle employing Japan's first full scale FWD (Front-Wheel Drive) and horizontally-opposed engines, was released. In 1972, Subaru released the Leone 4WD Station Wagon, Japan's first passenger AWD vehicle<sup>\*1</sup>, and the Justy, employing a highly efficient, continuously variable transmission ECVT something that was made practically applicable for the first time in world history, winning Subaru many ardent fans thanks to our inventiveness. Since the 1990s, Subaru has been a pioneer in the fields of high-performance station wagons in Japan, which employ high-powered turbo engines combined with AWD, as well as in the field of crossover vehicles<sup>\*2</sup> in the U.S., unit-ing the comfort of passenger vehicles with the functionality of SUVs.

Our current product lineup features the Legacy, the Impreza, the Forester and the Tribeca, all of which are produced in accordance with our automobile manufacturing philosophy, that "optimizing performance will lead to safety", and under our "everything we do is for our customers" motto. For other types of vehicles, we offer mini cars such as the Stella, the R1, the R2 and the Pleo, and mini-sized trucks such as the Sambar. By offering a diverse, complete product lineup, we have won the support of a great many customers.



The Eclipse 500, nicknamed the air taxi, is an attention-getting, reasonablypriced small business jet aircraft which meets the new and growing demand for corporate air travel. Using our cutting-edge manufacturing technologies, we are responsible for such tasks as assembling the main wings during the building of this aircraft. We are continuing our efforts to establish manufacturing techniques that allow mass production of aircraft at a low cost.

#### Currently Working to Utilize Both the Spirit of Aircraft Manufacturing and Manufacturing Techniques

#### Aerospace Company

[Location] Utsunomiya Manufacturing Division (Utsunomiya City, Tochigi Prefecture) Handa Plant (Handa City, Aichi Prefecture)

FHI can trace its beginnings back to Nakajima Aircraft Co., Ltd., founded in 1917. In the intervening years, we have been able to take the lead in the Japanese aerospace industry by using aircraft production technologies and a spirit of innovation taken from the past. We develop and produce helicopters, fixed-wing aircrafts, unmanned aircrafts, major structural elements of large commercial airplanes, and more by cultivating our original technology such as development technology for aircraft structures such as the application of composite material to the main wings, as well as advanced system integration technology, in which the IT technology used for unmanned aircraft and flight control technology are integrated. We actively challenges itself in new fields of technology to grow further and become an internationally-outstanding company with the creative and cutting-edge technologies we have been cultivating.

\*1: AWD stands for "All Wheel Drive", or in other words, four-wheel drive.

\*2 Crossover: The Subaru Outback, a station wagon that has the functionality of an SUV integrated into it, was released in August 1995.

\*3: An award was presented for the R1e as well as for its batteries and high-speed charger, which were all jointly developed by FHI, Tokyo Electric Power Co., Inc., and NEC Lamilion Energy, Ltd.

FHI is a comprehensive transportation manufacturer that consists of four business units: the Subaru Automotive Business, which develops and manufactures automobiles and parts under the Subaru (SUBARU) brand name, the Aerospace Company, the Industrial Products Company and the Eco Technologies Company.

Our innovative, cutting-edge technologies and uniqueness continue to win us the steadfast support of our customers all over the world.



The e-Cutter PRO, a rechargeable lawn mower which can be used professionally, was made using the technology of the Subaru Inverter Generator, an original development of FHI. By adapting the technologies of the Subaru R1e electric vehicle in using high-capacity lithium-ion batteries, the e-Cutter PRO was made both environmentally friendly and practical. In addition to its unique zero gas emissions feature, it operates in a user-friendly manner with reduced noise and vibration, and features significantly improved operating efficiency.



The Subaru Inverter Generator, which has been fitted with a new environmentally friendly engine. In addition to being lightweight, compact and easy to operate, we have also achieved a highgrade power output that can be used with personal computers as well as reduced noise and improved fuel economy.



#### **Industrial Products Company**

[Location] Saitama Manufacturing Division (Kitamoto City, Saitama Prefecture)

The Industrial Products Company produces about 1 million of Robins, general-purpose engines per year and the various products loaded with them. 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, which have enjoyed good reputations from our customers all over the world. Product development is implemented by repeating demanding tests to produce these engines and machines which 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.





Our new dual-compartment refuse separation and collection vehicle comes with two waste ports laid out right and left, and allows two types of refuse to be taken into and ejected from two separate compartments independently of each other. This vehicle allows waste collection to be made economical and highly efficient, because only one vehicle is needed to collect two types of refuse, and thus the number of vehicles and operators required can be reduced.

#### Contributing to Creating Comfortable Living Environments and a Resource Recycling Society

**Eco Technologies Company** 

[Location] Utsunomiya Manufacturing Division (Utsunomiya City, Tochigi Prefecture)

FHI is promoting technology development toward the environmental century. Eco Technologies Company particularly 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 various vehicles and equipment for waste collection, transport, and recycling. Also, the company has developed the wind turbine generator systems making a huge contribution to the prevention of global warming by utilizing natural energy. Eco Technologies Company contributes to conservation of the global environment with its ecological products with utmost effort.

The Wind Turbine System FHI has developed is a large-scale system that can generate a power level of 2000 kW, enough for 1,500 households, and is the world's first large-scale commercial machine to adopt a downwind rotor, which fully utilizes the energy of wind blowing up from the ground. It is structured in such a way that the large and heavy parts, such as the nacelle, can be disassembled into smaller components for easier transportation to the installation site. In recognition of its innovative design and future potential, it received the 11th NEF Prize of Fiscal 2006 (the Agency of Natural Resources and Energy Director-General Prize). The demonstration testing of a prototype erected on a seacoast in Kamisu City, Ibaraki Prefecture in December 2005 was completed successfully, and a model for mass production has been built; it was completed in the summer of 2007.



# **SUBARU Originality** Aiming to Combine Comfortable, Reliable New Driving Performance with Friendliness to the Global Environment

#### Subaru's Fundamental Philosophy for Manufacturing Automobiles

Subaru's development philosophy is to develop products that combine high levels of performance, safety and environmental friendliness, and to enable customers to experience the true joy of driving in order that each individual customer can share the happiness that comes from owning automobiles. To make this philosophy a reality, Subaru has continued to refine its core technologies, such as the Symmetrical AWD System, using Subaru's unique horizontally-opposed engines, and a car chassis that combines lightness with high stiffness. Subaru is committed to achieving "a prosperous society where automobiles, people, society and the environment are in harmony", and will continue to develop products under the mantra of "customers come first".



#### In Order to Create Appealing Values that Only Subaru Can Offer, we are pursuing:

- A style of driving that each and every one of our customers will find comfortable;
- Reliability that will bring each and every one of our customers a sense of security;
- Functions that each and every one of our customers will find easy to use;
- An overall environmental performance that will allow us to pass on a beautiful, clean Earth to the next generation; and
- A sophisticated, sporty design that expresses superb functionality.



Feedback on the intense competition to the cars sold on the open market

#### The WRC Challenge

Subaru has good reason to take up the challenge of the WRC (World Rally Championship): The reason is that we participate in each rally using vehicles built with a Symmetrical AWD structure, the same as that used in the cars we sell on the open market. We incorporate the invaluable technologies and experiences gleaned through subjecting the cars to the fierce competition of the rallies, under extremely severe road and weather conditions into the vehicles we sell on the open market. Thus, we incorporate the core technologies we have refined in our efforts on the world stage into Subaru automobiles, the vehicles to which our customers entrust their very lives.

#### Subaru s Core Technology



Characterized by lightweight, compact, and low center of gravity "Horizontally-Opposed Engine"

Subaru believes that SUBARU BOXER, the horizontally-opposed engine, is an ideal power unit. The engine has symmetrically arranged pistons whereby the momentum of each piston is counterbalanced by the movement of the corresponding piston on the opposite side. For this reason, the engine offers superior rotational balance for quick response and a smooth feel right to the top of its rpm range. The engine is also lightweight and compact. Its low profile when mounted lowers a vehicle's center of gravity, enabling freer cornering. This superior quality as a sport unit is truly a Subaru original that shares ideas of aircraft engineering. Subaru elicits great performance for low fuel economy and the environment by combining AVCS, variable valve timing, and variable induction system into this horizontally-opposed engine.



Realizing superb driving performance under various conditions – Contributing to active safety

#### "SYMMETRICAL AWD"

Subaru continues to stick to all-wheel drives (AWDs) as its core driving system. The unique AWD layout is consisted of the horizontally-opposed engine and a symmetrical power train. The superior weight balance, possible thanks to the low profile of the horizontally-opposed engine, and the layout, which arranges heavy items such as the engine and transmission around the center of the vehicle, together maximize AWD performance providing superb driving performance under various conditions. Furthermore, the simple layout makes for an ideal arrangement of suspension and body frame and contributes to an overall increase in vehicle performance. Symmetrical AWD is the realization of Subaru's aspirations for AWDs.



Synthesizing the competing elements at high level – Contributing to fuel economy

#### "A Body Combining Lightness and High Stiffness"

High body stiffness is necessary for improving collision safety performance and comfort. However, if the vehicle weight increases as a result of the increased stiffness, acceleration performance and fuel economy will decline and braking performance and running stability will also be negatively affected. In order to synthesize the competing elements of lightness and high stiffness at a high level and realize a superior balance of driving, safety, environmental performance and comfort, we at Subaru have been working to develop the chassis by bringing together our advanced technologies. We use numerous materials contributing to weight reduction and high stiffness, such as aluminum for bodies, high tension steel sheets and tailored blanks\*<sup>1</sup>. Weight reduction and engine efficiency provide both a pleasurable driving experience and fuel economy. To realize ideal performance by resolving the apparent contradiction of "lightness and high stiffness," we at Subaru will continue to work to overcome any challenges.

\*1: A material made by specially arranging, welding and press-forming different kinds of steel sheets.

# **Intelligent Drive**



om the left) Tasuku Maruyama, Munenori Matsuura, Shigeo Usui, Eiji Shibata, Toshio Masuda, Kouji Kaneda, and Kenichi Yamamoto

#### Featured Article 1

The New Added Values Proposed by Subaru: SI-DRIVE & SI-Cruise, The Legacy s Cutting-Edge Systems that Bring You a Truly *Sophisticated* Driving Experience

## SI-DRIVE & SI-Cruise

Since its debut, we have continued our ceaseless development efforts on the Legacy in order to continue satisfying our customers' expectations.

The Legacy's driving performance has been rated very highly by a great many customers.

In 2006, two newly developed, cutting-edge systems were incorporated into the Legacy: the *SI-DRIVE* and the *SI-Cruise*. These systems, which deliver a more pleasurable driving while at the same time offering just the environmental and safety performance the current age seeks, are exemplary of the innovative technologies unique to Subaru.

#### SI-DRIVE = Allows Drivers to Select One of Three Driving Characteristics According to the Circumstances



Toshio Masuda General Manager Subaru Product & Portfolio Planning Division

#### An Added Value Proposed by Subaru: Intelligence

"Subaru has continued to create appealing and unique products like our symmetrical AWD, combined with horizontally-opposed SUBARU BOXER engines and our turbo engines, and the stellar performance born of these products has won us the support of a great many customers. However, as times change, the sense of values our customers seek in vehicles will change as well. Products that are focused solely on optimal performance are becoming obsolete, and customers are seeking new values to be added to their cars.

To respond to such expectations, we have developed SI-DRIVE, which was born out of our musing about "how pleasant it would be if car features could be selected according to the circumstances of the drive or driving style, or change depending on the mood or preference of the driver". Using this system, a married couple, for instance, can share a single Legacy, which offers a powerful performance of 280ps. A single car can satisfy both the husband and the wife, because the husband can fully enjoy its sporty performance on his days off, while the wife can take comfortable drives through town in power-saving mode. Each family member can use the car as he or she sees fit, and select the performance type that best matches his or her mood or circumstances. This ability to select performance types represents the Legacy's newly

#### added value, and is the true intelligence of the Legacy.

The purpose of Intelligent mode, one of the system's three selectable driving modes, is not only to meet customers' expectations for environmental performance and fuel economy, but also to deliver a function whereby customers can still actively step on the accelerator and enjoy the sensation of driving even in a power-saving mode. The word "eco" often implies a negative image of sacrificing driving performance, but making such a sacrifice was the last thing we wanted to do. Hence, we named it "Intelligent mode", not "Eco mode", because we didn't want our customers to think this mode's only purpose was to improve fuel economy."

#### Atsushi Atake Staff Manager

#### Subaru Product & Portfolio Planning Division

"To develop SI-DRIVE, we repeatedly conducted driving tests while always keeping the question of "what advantages can this system deliver to customers?" in mind. The result is Intelligent mode, which our customers describe as "an eco to enjoy", not "an eco to endure".



#### Kenichi Yamamoto Staff Manager Subaru Engineering Division Total Vehicle Performance Integration Dept.

"When Mr. Masuda first came to me with the idea of SI-DRIVE, I felt we would only be able to make this dream come true if we all pushed ourselves and really committed to the development effort. As I approved this new set of values, I explained the importance of SI-DRIVE not only to the Legacy development staff but also to those who were in charge of other jobs, and had every one of us work together as one."





#### SI-Cruise = Reduces the Burden on Drivers by means of the Full Speed Range Adaptive Cruise Control (FSRACC)

## A Perfectly Precise Control That Eliminates the Gap between Man and Machine

"In order to provide a reliable, safe driving experience, we equipped the Legacy released in 1999 with the ADA (Active Driving Assist), which utilizes stereo cameras to assist drivers in operating the car. Although the system was very effective, we faced the problem of not being able to offer it to as many customers as we wished because the system was expensive. To resolve this issue, we developed SI-Cruise, which is based on the technologies of SI-DRIVE and also incorporates the newly developed SI- Radar Cruise Control (SABARU Intelligent Radar Cruise Control). In addition, we worked to make the price affordable for our customers. The system assists in the prevention of most collision accidents that occur when drivers doze off, are staring at the car navigation display or glance aside for a second while driving.

The other feature of the SI-Cruise system is the control function, which can be adjusted with extreme precision. For instance, in circumstances under which the driver has just realized "I have to step on the brake", the brake will automatically be activated in an extremely natural manner. This system, which offers high-quality performance, has been perfected, and leaves no gap between human senses and machine functions. Naturally, combining the SI-Cruise system with SI-DRIVE allows excellent environmental performance, for example by improving fuel economy under actual conditions. In the future we plan to continue our developmental efforts on the SI-DRIVE and the SI-Cruise to further enhance their performance."

#### SI-Radar Cruise Control [with Full Speed Range Adaptive Cruise Control (FSRACC)]

The lidar mounted inside the front grille detects the tracking distance and the difference in driving speed between the drivers car and the car ahead. This system, by optimally controlling equipment such as the engine, transmission and brakes, maintains a precise tracking (following) distance. The speed range controllable under this system is wider than that of conventional Adaptive Contese Control (ACC), covering from approximately 0km/h to 100km/h.



When the car is moving at a low speed due to a traffic jam, etc., it automatically accelerates and decelerates in synch with the movement of the car ahead until it comes to a complete stop, thereby reducing the burden on drivers of having to constantly adjust and control the cars speed.

#### Eiji Shibata Staff Manager

#### Subaru Engineering Division 3rd Vehicle Research & Experiment Dept.

"The first condition for popularizing the SI-Cruise was to reduce development costs and make it affordable for customers. In addition to just cutting costs, however, we also had to create a product that would truly shine. We evolved the ADA's control functions, and persistently sought to create a pleasant, comfortable feeling for people while driving."



#### Shigeo Usui Manager Subaru Engineering

#### Subaru Engineering Division Interior & Electronic Design Dept.

"If we had focused exclusively on enhancing controls that solely shadow the movements of the car in front then if the car in front accelerates too fast, our car's fuel economy rate would deteriorate. To avoid this problem, we designed the SI-Cruise control to work in harmony with SI-DRIVE, and also made the FSRACC to function in line with SI-DRIVE's selected driving mode, achieving a superior performance that upholds both the convenience of FSRACC with fuel efficiency. By combining SI-DRIVE and the SI-Radar Cruise Control (SUBARU Intelligent Radar Cruise Control), we were able to further heighten the "Intelligent" product value.



#### Munenori Matsuura Subaru Engineering Division Interior & Electronic Design Dept.

"The technology of the ADA cultivated over the years is what made it possible to create the SI-Cruise system. The only way we were able to achieve success was to have the guts as engineers to patiently repeat trial-and-error over and over during the testing.



# **Composite** Material

#### **Featured Article 2 The Composite Structure Technologies of FHI**

are Contributing to Energy Conservation and Global Warming Prevention by Reducing the Weight of Aircraft

FHI was the pioneer of composite aircraft component production in Japan back in the 1970s, and since then we have continued our development efforts, focusing on the unique properties of composites, the fact that they are lightweight vet very strong.

Because of FHI's reputation for advanced composite structure technologies and leadership, we are now participating in the Boeing 787

> program, for the next-generation transport airplane.

> FHI is responsible for the 787 Center Wing, the critical component supporting both wings and the entire body structure.

(Above) Boeing 787 (by courtesy of the Boeing Company) (Below) Blue portion: the Center Wing section where FHI Aerospace Company is responsible for development.

#### FHI s History of Composite Structure Development



Composites, Which are Both Lightweight and Strong, Significantly Contribute to Improved Fuel Economy Shoichiro Tozuka General Manager, Aircraft Engineering Dept. & Project General Manager 787 Engineering, Aerospace Company

Composites are reinforced plastics made of fiber and thermosetting resin which have been cured under high temperature and pressure. FHI started development of aircraft components using GFRP\*1, a composite material made of glass fibers, in the 1970s

In the 1980s, we began research into CFRP\*2, a composite material made of carbon fibers, and succeeded in building aircraft components using CFRP, including the wing-body fairings and gear doors of the Boeing 767, the first composite components produced in Japan.

The Boeing 787 is the very first commercial transport airplane to use composites for major structures such as wings and body. Through use of composites, it achieved significant weight reduction as well as a drastic improvement in fuel economy\*3. Furthermore, using composites enabled creation of a better equipped interior environment, making flights even more enjoyable for passengers.



\*1 GFRP: Glass Fiber-Reinforced Plastic, a plastic material reinforced by glass fibers. Commonly used in small shipbuilding industries, windmill rotors, aerospace industries and many other commercial applications because of its superior flexibility in process and formability. \*2 CFRP: Carbon Fiber-Reinforced Plastic, a plastic material reinforced by carbon fibers. Because it is lightweight and strong, CFRP is used in many structural applications for the aerospace industries, in construction industries and in car manufacturing like Formula One racecars, etc.

#### The Process of Making the Boeing 787's Center Wing

A center wing is located at the intersection of the wing and fuselage and is referred to as "the heart of the airplane", the most vital part of the airplane.

# Design ↔ Analysis

#### **Computer-Assisted 3D Design**



I was in charge of designing the outer panels, the largest part of the center wing and formulating the wing contour.

During the early stages of my assignment. I worked at Boeing in Seattle. The 3D data created by computers was used as the basis for the entire process, from NC programming,

Sachie Arakawa Designer 787 Engineering

molding thru to assembly.



Lead Analyst 787 Engineering

Shigekazu Uchiyama Katsuva Ikeda Project Manager 787 Engineering

#### **Carrying Out Rigorous Analysis to Ensure In-Flight Safety**

Metal parts are made by cutting pieces out of a metal ingot, but with composites, parts are made by stacking up layers of thin, fabric-like materials.

Because the strength and characteristics of parts made of composites vary depending on factors such as the direction of each layer as it is piled up, after the design is complete we conduct careful and rigorous analysis under a variety of conditions.



## **Casting/Molding**



One type of carbon fiber fabric



Yukio Nakajima Manager Parts Fabrication Manufacturing Engineering Sec. Production Engineering Dept.



Large-scale autoclave installed

Yuichi Egami Assistant Manager Parts Fabrication Manufacturing

Engineering Sec. Production Engineering Dept

#### Using Large Devices, Even Large Parts can be Cast/ Molded in One Sitting

Sheets of fabric made of carbon fibers are stacked up in a manner that is based on the design data while being injected with thermosetting resin.

The sheets are then pressurized and heated in a device called an "autoclave", filled with nitrogen, and formed into a lightweight, strong composite material

To develop the center wing for the Boeing 787, we



Stacked layers of carbon fibers are visible

## installed a large-scale autoclave at the brand new

Using this large-scale autoclave, the upper and lower panels of the center wing, can be manufactured by one shot of cure cycle. The numerous other parts and components are made at other sites to cover the entire 787 center wing fabrication

# Assembly

#### Composites Improve Efficiency of Assembly



Jun Yamakami PM787 Group Production Engineering Dept

For metal structures, riveting techniques are commonly used to create assemblies, but for composite parts, we employ a bonding process to join parts. This bond assembly technology is basically the same technology used to manufacture CFRP parts. The entire wing box serves as the integral fuel tank, so if rivets are used, significant sealing application is required to prevent any leakage of fuel. On the other hand, the 787's panel skin and stringers are bonded together in such a way that such sealant is no longer required. Eliminating rivets has reduced the weight of the center wing and at the same time improved the efficiency of assembly

# Handa West Plant.

# Completion

**Delivering the Center Wing to Boeing** for the Final Assembly



The Boeing 787 Center Wing. The first article was delivered on January 12, 2007

\*3 Improved Fuel Economy: With the Boeing 787, the fuel efficiency has been improved by at least 20% compared to other aircrafts of the same class (Information taken from the Boeing Web site; other improvements, such as improved aerodynamic and engine performance, are included in this figure.)

# Service Robot



#### Featured Article 3 Subaru's Service Robots: Doing the Back-Breaking Jobs and Contributing to an Improved Work Environment and More

Subaru has been a pioneer in creating business models in the field of service robot development.

In recognition of Subaru's performance in this area, our "Building Cleaning Robot System", which was developed and produced by Subaru in December of last year and commercialized jointly with Sumitomo Corporation, received the Grand Prize of the first annual Robot Awards (the 2006 Robot Awards) established by the Ministry of the Economy, Trade and Industry. It is anticipated that social needs for service robots to take over back-breaking, dangerous jobs will continue to grow as the population ages and the birthrate declines.

In this article, we'd like to introduce the technologies behind Subaru's service robots.

#### What are Service Robots?

When people think about the term "a robot for practical, general use", many picture some kind of "industrial robot" being used in manufacturing plants.

Unlike such industrial robots, a "service robot" is one that takes over back-breaking or dangerous jobs such as cleaning buildings, and contributes to society and its company by improving the work environment, ensuring operator safety and/or reducing labor costs.



Image of the Cleaning Robot

#### How our Building Cleaning Robot System Works

High-rise buildings are usually cleaned late at night, and the floors to be cleaned are quite large. Janitors have a lot of work to do and their work environment is quite severe. Subaru's cleaning robots have a unique unmanned servicing function, whereby they move from a storage area to each floor using an elevator, clean the floors and go back to the storage area automatically. Our cleaning robots are currently in operation at about ten high-rise buildings, including Harumi Triton Square and Roppongi Hills in Tokyo (see the picture below), and also at Centrair (the Chubu International Airport).





#### **Enhancing Flexibility for a Variety of Workplaces**

Subaru's cleaning robots have been customized to work in a variety of work environments. They are becoming more flexible to fit in workplaces other than high-rise buildings, and at the same time, work on them is leading to derivative products for a variety of purposes.

#### **Pharmaceutical Companies**

Manufacturing companies' plants are made to have a high degree of airtightness overall, and the aisles are usually made quite narrow.

This is precisely the sort of environment in which our cleaning robots can demonstrate their unique features, that is, *being small* and *having an excellent turning radius*.

In addition to our cleaning robots, we have developed "transportation robots", which can transfer heavy drug containers to each manufacturing line; they are currently being used in pharmaceutical plants.

# To ensure sanitation, the bodies of the

To ensure sanitation, the bodies of the robots delivered to pharmaceutical companies are made of stainless steel and are not painted. Furthermore, a threelayer filter that includes a high-performance filter layer called a hepafitter, is installed in the air exhaust system of the robots to meet the extremely strict in the 10,000 or lower class air purfication requirement.

Starting from the left, the hepafilter for use at pharmaceutical companies, a filter for regular cleaning robots, and a filter for regular vacuum cleaners for do-





Because the drug containers used at pharmaceutical companies weigh at least 150kg, handling the containers has been a back-breaking job for operators. These transportation robots provide unmanned services including arranging empty containers in rows, placing containers onto manufacturing lines and even moving full containers, thereby significantly improving operating efficiency and minimizing the number of operators that have to work on the manufacturing lines during the night.

#### **Children's Nursing Home**

Cleaning robots delivered to children's nursing homes for mentally impaired children are decorated with painted figures such as cute-looking cats, or designed to play music while cleaning so that the children find the robot fun and adorable. To prevent children from getting tangled up with a working robot, the bumper is customized in various ways, including being equipped with sensors.



#### **High-Rise Condominiums**

Subaru's cleaning robots have also been introduced to high-rise condominiums, which are currently experiencing a construction boom in and around cities. Because the refuse picked up at condominiums includes fallen leaves and small stones, and thus is different from the refuse collected in indoor environments such as high-rise office buildings, modifications have been made to the robot's brushes and other equipment. In addition, since the robots also operate in joint-ownership spaces of condominiums such as hallways, they were intentionally designed to create a certain degree of operational noise to alert residents or passersby that the robot is in operation.



#### These Robots also Stand Ready to Serve People in Other Ways

In addition to cleaning, Subaru's service robots can take over various other back-breaking or dangerous jobs.



Underwater Radioactive Waste-Removing Robots These robots are designed to operate inside the pools used to store reactor parts at nuclear power plants. They help not only to improve operating efficiency but also to significantly reduce human operators' exposure to radiation.



Landmine-Detecting Robots These robots can safely detect landmines that remain buried underground in disputed regions and

so forth. Even during the verification testing for these robots in Croatia, they received a very positive evaluation.

# North America

# Reusing and Recycling

Manufacturing without waste , at SIA.



The SIA plant is located in an area certified as a Backyard Wildlife Habitat

## Featured Article 4 Social and Environmental Activities at SIA, Our Manufacturing Facility in North America

FHI's five affiliated companies in North America (SIA, SOA, RMI, SCI and SRD)\*\* established the North American Environmental Committee in June 2003 under the organizational control of the FHI Corporate Environment Committee, and have worked to promote various environmental conservation activities.

In this article, we would like to describe the success of three affiliates in North America, including SIA, in acquiring integrated ISO14001 certification, as well as SIA's social and environmental activities.

\*\*SIA=Subaru of Indiana Automotive,Inc.; SOA=Subaru of America,Inc.; RMI=Robin Manufacturing U.S.A.,Inc.; SCI=Subaru Canada,Inc.; SRD=Subaru Research & Development,Inc.

#### FHI's Manufacturing and Sales Companies in the U.S. Have Acquired Integrated ISO14001 Certification

SIA, Subaru's plant for producing completed automobiles in the U.S., acquired ISO14001 certification in November of 1998. This was before even the Gunma Manufacturing Division managed to acquire the same certification in March of 1999, and the very first such acquisition within the entire FHI Group. All five affiliates have now acquired ISO14001, starting with RMI in 2003, the year when the North American Environmental Committee was established, and ending with SRD in 2005.

Also, SIA, SOA and RMI achieved the integrated ISO14001 certification on December 21, 2006 as their further advanced activity. The achievement is highly valued by the registration agency for two reasons. First, they are combining several different "organizations" under one certificate. Secondly, they have taken a "corporate-wide" approach to the EMS covering from the manufacturing facilities, sales companies, administrative offices, distribution warehouses, and technician training centers.



Mr. Takagi, Chairperson of Corporate Environment Committee (right) and Mr. Kasai, SIA Senior Executive Vice President (then) with Integrated ISO14001 certification

#### The Seventh North American Environmental Committee

FHI's five affiliated companies in North America (SIA, SOA, RMI, SCI and SRD) established the North American Environmental Committee together with FHI under the organizational control of the FHI Corporate Environment Committee. Since the first committee meeting, which was held in June of



2003, the five affiliates have continued to conduct activities and exchange opinions on current and future environmental conservation activities.

Three representatives of the U.S. Environmental Protection Agency (EPA) participated in the Seventh North American Environmental Committee meeting held at SIA in March 2007 to survey SIA as a company with advanced waste material reduction activities and to collect information on successful cases of the EPA's Waste Wise Program.\*<sup>2</sup>

Besides SIA, SRD is also participating in the program as a Waste Wise partner. SIA made a remarkable achievement by winning the Gold Achievement Award as a new partner in 2006.

At the Seventh Committee meeting, the integrated ISO14001 certification acquired by the three affiliates was reported, and the participants discussed whether to set up a website\*<sup>3</sup> to introduce the environmental activities of the companies belonging to the Committee. The Committee's activities were very well received by the EPA members.

\*1: The National Wildlife Federation published the fact that in 2003 SIA became the first automobile plant in the U.S. to be certified as a Backyard Wildlife Habitat. \*2: Waste Wise is a voluntary partnership program established by the U.S. Environmental Protection Agency aiming to reduce waste materials by means of recycling those materials, etc. They provide assistance, such as by providing help desks and research on successful cases, to more than 1,900 partner organizations, and grant awards to organizations that have made outstanding achievements.

#### SIA's Social and Environmental Activities - the Environmental Activities Won Various Awards

#### Zero waste material directly landfilled has been achieved

SIA achieved zero waste material directly landfilled on May 4, 2004 and has continued to maintain the status since then until fiscal 2006. SIA has also continually improved to a 99.6% recycling rate.

Some of the unique environmental projects conducted at SIA for reusing and recycling include:

#### [Solvent Re-use]

SIA installed an on-site solvent recovery unit which processes approximately 60,000 gallons/year to be re-used on-site.

#### [Oil Re-use]

A centrifuge is brought on-site which results in 6,000 gallons of oil to be re-used each year.

#### [Oil Absorbent Re-use]

Used absorbents are sent to be laundered and clean absorbents are returned to SIA for re-use. During 2005 and 2006, over 27,000lbs were sent for re-use.

#### [Solvent Soaked Rag Recycling]

A centrifuge is brought on-site and the solvent is collected for recycling. The rags are taken off-site melted and added to plastic polymers and then formed into automobile wire harnesses.

These environmental achievements have been recognized by the Indiana Governor's Award for Environmental Excellence in 2003 and 2006 and by the Environmental Protection Agency Waste Wise Award New Partner Gold Achievement in 2006.



Trophies for the

three awards

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The environmental achievements are also being displayed at North American Subaru Dealer-ships

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#### **Community Involvement**

SIA strives to have a positive impact on the community.

#### [STARS Program\*4]

The STARS program was started by SIA in 2005 and currently over 3,600 students and teachers are participating in the program. Participating schools will compete against each other annually with SIA awarding schools based on their environmental efforts and accomplishments.



STARS presentation at the 2007 ceremony



2007 High School students involved with SIA STARS

#### The SIA Vehicle for Learning Program

SIA donates vehicles to local educational outreach program. Over 400 vehicles have been donated to Indiana schools for vocational/career programs. This program enables SIA to re-use the vehicles while students are provided with state-of-the art equipment and enhances the quality of the Indiana vocational/career programs for current and future student involvement.



Mr. Oikawa, SIA President and CEO (then), visiting a school who received donated vehi cles

# Social Report



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.

# Corporate Philosophy 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.

#### Subaru: Aiming to Transform into the Shape We Want to Be

We have established a new medium-term management plan for fiscal 2007 to 2010 and have been proceeding in our efforts to transform into our desired shape: to be a compelling company with strong market presence.

In some respects, we have been apt to attach too much importance to technology, but as we were preparing the new medium-term management plan we reviewed every aspect of our operations and ultimately returned to our most basic rule: *customers come first*. As for products, we will develop technologies which, in addition to delivering a new driving experience that not only drivers but all passengers can enjoy, also respond to environmental and CO<sub>2</sub> problems on a global scale. With respect to customer satisfaction, we will improve our system so that our products are created with the customer's view in mind, and enhance the service quality at our sales and service organizations both in Japan and abroad. Furthermore, we will exert our utmost efforts to comply with the J-SOX Act\*1, and at the same time, strive to nurture corporate vitality, which is essential for our company's continued growth, through active communication throughout the entire corporate group including group companies, and by strengthening human resource development through such means as providing employee education. By continuing our steady forward-facing progress and evolution with every step of these activities, it is our dream and our desire to establish a Subaru brand loved and supported by customers all around the world and to become a model company where employees can work with pride in each and every business area.

#### 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.

\*1 J-SOX Act: A common name for the Financial Products Exchange Law, enacted in July 2006, which contains regulations mandating listed companies to strengthen their internal control measures and to submit internal control reports, in order to guarantee the appropriateness of the financial reports submitted by listed companies.

# Subaru Believes CSR Is Fundamental to Its Business Activities

(1) We have included the idea of "being a company fulfilling its social responsibilities" in the business vision of our new medium-term management plan.



(2) We will have our senior management establish a PDCA (plan-do-check-act) cycle at the CSR and Environment Committee meeting in order to take a comprehensive approach to both CSR and environmental issues

(3) We will work to make our employees fully aware that our social responsibilities impact all aspects of our business activities.

#### **CSR: Corporate Social Responsibility**

#### **CSR** Policies

FHI believes that "Our Corporate Philosophy=Our CSR Policies", or in other words, we affirm that CSR is a reflection of our corporate philosophy and fundamental to our business activities. Based on this philosophy, we have established a Corporate Code of Conduct, and conduct our CSR activities accordingly. We place great importance on our relationship with our stakeholders as we proceed with our CSR activities. We believe that our mission, as a good corporate citizen, is to tackle a variety of social problems and make social contributions through our business activities.



#### Business Visions and CSR

One of our business visions outlined in the new medium-term management plan for fiscal 2007 thru 2010 released to the public on February 28, 2007 is to become a company fulfilling all its social responsibilities. This is a basic ideal, and is indispensable to us realizing our long term business vision of becoming a compelling company with strong market presence. In order to become a company worthy of our stakeholders' trust, we will make efforts to contribute to the continuous development of society and to heighten the corporate value of our company, in accordance with such business visions under our basic policy of *everything we do is for our customers*.

#### **Reviewing Fiscal 2006**

In the process of creating a new management organization in June 2006 and preparing the new medium-term management plan, we conducted an in-house survey as well as interviews (with employees) on CSR to get a feel for the level of CSR activities being carried out within the company. The survey and interviews revealed that the following improvements need be made to our CSR activities:

- 1. Enhance awareness among employees that every individual employee's actions are linked to CSR.
- Strengthen the system through which information on CSR can be shared, adjusted, developed and accumulated effectively and rationally.



#### Activities in Fiscal 2007

In order to enhance our CSR activities, we will realize the idea of becoming a company fulfilling its social responsibilities and the business vision of our new medium-term management plan, as well as work to implement the improvements suggested in fiscal 2006.

#### 1. Responding to the Improvements Suggested in Fiscal 2006

 In order to strengthen the conventional functions of the CSR Committee and promote a comprehensive approach for both CSR and environmental issues, or in other words, to take on the most important challenge of our CSR activities, we will form the CSR and Environmental Committee by extending the functions of the FHI Corporate Environment Committee, and achieve PDCA by the senior management for each activity.
 In order to enhance awareness among employees that the actions of each individual employee are linked to CSR, we will enhance cooperation among our companies and at all business sites, bringing them under one direction and visualizing our CSR activities.

#### 2. Disseminating CSR Activities to Make Our Business Vision,

#### "Being a Company Fulfilling Its Social Responsibilities", a Reality (1) Our CSR Philosophy at FHI:

Responding to social problems through main business activities, and enhancing corporate value by building a sustainable environment, economy and society.

Entrenching the awareness of aggressive CSR (social contributions through our main business activities) and defensive CSR (compliance with laws and regulations) among employees.

#### (2) The Meaning of CSR at FHI:

Making our employees fully aware that we have social responsibilities in all aspects of our corporate activities.

Making our employees fully aware that CSR is a process that generates profit which is fundamental for our business activities.

#### **Corporate Governance**

#### Fundamental Philosophy

In order to provide both customers and stakeholders with even more satisfaction and reliance, we are striving to strengthen our corporate governance, which is the most important task for our business based on our corporate philosophy.

Since June 1999, we have employed an executive officer system that helps clarify responsibilities to carry out operations in each division.

In addition, since June 2003, the terms of directors and executive officers have been reduced from two years to one. Also, since June 2004, according to the decision of the Board of Directors<sup>\*1</sup>, we have given responsibility for the nomination of corporate officers to the Executive Nomination Meeting and given responsibility for evaluating performance and determining the remuneration of corporate officers to the Executive Compensation Meeting.

All these measures are designed to clarify management decision-making and operational functions, increase decision-making speed and enhance the effectiveness of business operations.

The Board of Corporate Auditors Meeting consists of four corporate auditors<sup>\*1</sup>, and is responsible for receiving reports on important auditing issues and deliberating accordingly.

We will take various measures, such as recruiting outside directors to further strengthen internal control, and will also disclose information fairly and in a timely manner in order to increase management transparency.



Corporate Operations at HQ, Automotive BU and each company of FHI

#### Establishment of an Internal Control System

Internal control is a mechanism which is indispensable for achieving business objectives, and management is responsible for establishing an internal control system and keeping it functioning effectively and efficiently. In response to the "Standards for Management Assessment and the Audit concerning Internal Control over Financial Reporting" published by the Business Accounting Council of the Accounting Standards Board of the Financial Services Agency on February 15, 2007, we are working to organize and strengthen our internal control system within the entire group, aiming at: 1) effectiveness and efficiency of operations, 2) reliability of our financial report, 3) compliance with laws, etc. in our business activities and 4) safeguarding of our assets.

<sup>\*1</sup> The Board of Directors Meeting consists of 8 executives. The board of Corporate Auditors Meeting consists of 4 auditors, including two outside corporate auditors, to observe the corporate management objectively (as of June 26, 2007).

<sup>\*2</sup> Other than CSR Committee, Corporate Environment Committee, and Compliance Committee, we have Recall Committee, and Export Control Committee.

# Compliance

## We Regard Legal Compliance as a Vital Foundation of Our Business Management

(1) Approximately 3,800 employees took compliance and legal training courses in fiscal 2006.



(2) We enhanced employees' understanding of legal compliance by utilizing the Personal Information Protection Handbook, which is distributed to all Subaru dealers.

(3) We supported our affiliated companies and Subaru dealers through several measures, such as dispatching compliance training instructors.

#### **Fundamental Philosophy**

FHI's 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.

#### (Corporate Code of Conduct and Conduct Guidelines

FHI has established a Corporate Code of Conduct and Conduct Guidelines as the standards to ensure compliance with laws and regulations. These are described in detail in the Compliance Manual, which all officials and employees carry in order to ensure legal and regulatory compliance in their daily actions.



#### 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. 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 has established the Compliance Hotline System as an alternative communication route, providing workers of our group companies with a direct route to report any problems detected concerning compliance in the group. The Compliance Hotline Desk is set up in our company and the employees appointed as the desk under the regulations receive reports directly from the employees involved by mailing a written report, phone calling, or e-mailing and then investigate and deal with the matter. The name and department of the employee who reports the matter are kept under strict rules of confidentiality, unless the employee agrees otherwise. Due consideration is given to ensure that the employee does not suffer any disadvantage as a result of reporting a compliance problem.

#### **Compliance Hotline**



#### Fiscal 2006 Results of Compliance Activities

#### Providing Compliance Education and Training Programs

In fiscal 2006, we offered an educational program of compliance and legal training through a variety of educational courses organized by our Legal and our Personnel & Training departments, and approximately 3,800 officials and employees, including many from our group companies, took these courses during fiscal 2006. We introduced Case Study Training, whereby employees actively discuss familiar issues and share opinions, and about 250 employ-



ees improved their understanding on compliance through this training. Furthermore, each division and group company holds workshops on laws and regulations which are important to conducting their business, as well as training to promote compliance, according to their respective action plans, which utilize the booklet entitled "100 Case Studies of Compliance Issues" as texts.

In 2004 and thereafter, we designated October as Compliance Month, and during that month we conduct special activities, such as inviting outside lecturers to give presentations, so that we can entrench awareness regarding compliance.

100 Case Studies of Compliance Issues



Training for Case Study of Compliand

#### Our efforts for Personal Information Protection

In response to enforcement of the Personal Information Protection Act, we have reviewed our internal system and regulations and announced privacy policy. Especially for domestic Subaru dealers, 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.

However, an unfortunate incident occurred on July 8, 2006 when one of our employees was on board a train. His briefcase, containing documents, a laptop computer and an external storage unit which held personal information on 199 Subaru customers (their names, addresses, data on their cars, etc.) and on 54 Subaru employees, was stolen. As a general rule, we prohibit the taking of any personal information off our premises, and we have instructed our employees that any person who is required to take out any personal information must first obtain the approval of



Personal Information Protection Handbook for Subaru Dealer Staff

his/her superior and must take all designated security measures, and must always keep the information on hand. Despite our efforts, this incident has caused tremendous trouble and anxiety among our customers and those concerned, and we would like to extend our sincere apologies. Immediately after this incident, we directly contacted all the customers involved and offered a personal apology to each one of them, and publicized the facts of the incident on July 18<sup>\*1</sup>. In addition, in order to prevent a reoccurrence of such an incident, we redoubled our efforts to ensure that all employees are aware of the key principles of protecting personal information, and re-educated the employees within the related divisions and departments through group training and e-learning. We will continue to strive to strengthen our security systems and raise employees' awareness, so that the entire group can protect personal information appropriately and continually.

The stolen personal computer was protected by a password, and the data stored on it was encrypted. As of April 2007, no incidents of unauthorized use of personal information have been confirmed.

#### (Activities toward Group Compliance)

In order to ensure compliance with laws and regulations, not only FHI but also all our group companies must join forces and work in harmony. For this reason, we dispatch lawyers and our employees as compliance training instructors to each of our affiliated companies as well as domestic Subaru dealers and also provide textbooks in an effort to promote group-wide compliance with laws and regulations.



Compliance Training at Yusoki Kogyo K.K

# For Customers

## "Everything we do is for our customers", the Bedrock of Our Spirit

(1) In 2006, the Customer Relations Department dealt with approximately 59,000 requests for assistance from our customers.

POINT

(2) Subaru ranked number one in the 2006 Japan Mini-Car Customer Service Index (CSI) Study on customer satisfaction conducted by J.D. Power Asia Pacific, Inc.

(3) We established the "Customer-First" Promotion Department to improve customer satisfaction even further.

#### **Customer Relations Department**

Activities of Customer Relations Department

#### (Prompt Feedback of Customer's Opinions to Relevant Fields)

FHI has established the Subaru Customer Center (operated by the Customer Relations Department) as a point of contact for customer inquiries, requests for assistance, demands and suggestions. Since communication is exchanged mainly by means of telephone and e-mail, we ensure quick, on-target responses to inquiries and requests for assistance from our customers based on our action policy of promptness, sincerity and attentive listening.

In fiscal 2006, we dealt with approximately 59,000 (100.0% compared to the previous year) requests for assistance from customers. We feed the invaluable opinions, demands and suggestions from customers back to the relevant departments/divisions to increase customer satisfaction by improving quality, developing products and improving sales and services.

We believe that customers' voices represent their expectations of FHI. Therefore, we would like to continue to serve and give satisfaction to our customers through good communication with each and every one of them.

#### The CS Promotion Section

Functions of the CS Promotion Section

Activities to Support and Promote Improved Customer Satisfaction

We are conducting activities to support and promote improved customer satisfaction throughout the entire Subaru team, which includes Subaru dealers and all the divisions and departments within the company. Using our customers opinions obtained from Subaru questionnaires and from these Subaru dealers, to reflect on our products, the quality, the sales, and all the post-sale services, etc, we also want to ensure that our customers are looked after at our dealers by the highest standards, and are carrying out inspections and supervision at each location.

#### Achievements during Fiscal 2006

#### Subaru Ranked Number One in the Japan Mini-Car Customer Service Index (Mini-Car CSI) Study on Customer Satisfaction

In the Japan Sales Satisfaction Index (SSI) Study\*1 conducted by J.D. Power Asia Pacific, Inc., a third-party research agency, Subaru was in last place for two successive years, 2004 and 2005. By taking these results to heart, we had the Customer Service Quality Improvement Project Team, consisting of 35 manager-class employees, work on improvement by once again visiting 550 outlets selling new cars across Japan in fiscal 2006 based on the customer's perspective, as we did in the previous year. In addition, we promoted: 1) the welcoming of customers by all employees at each sales outlet, and 2) improved knowledge on products by holding a class once a week, as part of the newly launched Focused Activities for CS Revolution. As a result, we were able to avoid last place in the 2006 Japan Sales Satisfaction Index (SSI) Study\*1 conducted by J.D. Power Asia Pacific, Inc., and were ranked number one (in a tie) in the 2006 Japan Mini-Car Customer Service Index (Mini-Car CSI) Study\*2 conducted by the same agency.

#### Activities in Fiscal 2007

#### Established the "Customer-First" Promotion Department to Improve CS Even Further

We established the "Customer-First" Promotion Department at the Subaru Customer Center in April 2007. We will strengthen this organization in order to deliver products and services that will bring our customers even more satisfaction. Specifically, in addition to the conventional CS improvement activities, we will constantly work in all processes, from employee education to information sharing and work restructuring, so that our departments in charge of development, manufacturing, marketing and after-sales services can each always work in the spirit of "customers come first". In addition, to further improve the quality of customer service at Subaru dealers, we will organize an exclusive on-site support team, and proceed with improvement activities by joining forces with our dealers.

\*1 Source: The Japan Sales Satisfaction Index (SSI) Study<sup>™</sup> conducted by J.D. Power Asia Pacific, Inc. from 2004 to 2006. The 2006 study is based on a questionnaire answered by 5,996 users who purchased new passenger cars (excluding mini cars) regarding the service quality of dealers during the purchasing process.

### Our First Priority Is to Create Automobiles That Ensures Safety for All Customers

(1) By adopting the new ring-shaped reinforcement structure, a safety-oriented chassis unique to Subaru, we try to ensure safety during collisions from any direction.



(2) To prevent accidents, we have been fostering the evolution of the automobile's basic functions by focusing on Symmetrical AWD.

(3) We are conducting research and development into cars that don't crash to bring about a society free from traffic accidents.

#### Efforts to Create Safe Automobiles

Basic Philosophy for "Creating Safe Automobiles" Developing Safety Technologies Aiming to Create a Society Free from Traffic Accidents

Subaru has been making advances in developing a high-performance AWD that provides drivers with a safe, comfortable and pleasurable drive on any road. It's true that cars are convenient and pleasurable vehicles, but there is a negative side associated with them too, for example the damage they cause to the global environment as well as traffic accidents. To minimize such negative aspects, we at Subaru are working to develop products that combine Subaru's uniquely pleasurable driving performance with environmental friendliness on a global scale, based on our safety principle: "our first priority is to develop vehicles that ensure our customers' safety".

In order to ensure traffic safety, we have been focusing on developing sophisticated active safety technologies to prevent accidents as well as passive safety technologies to ensure safety in the event of an accident. We will continue to develop safe technologies for vehicles in order to create a society free from traffic accidents.

#### Efforts for Passive Safety

#### We Improve Safety during Collisions through Our New Ring-Shaped Reinforcement Structure

We have succeeded in ensuring the cabin (survival space) is safer against collisions from any direction by adopting the new ring-shaped reinforcement structure to create an original lightweight, high-strength, safe chassis for our vehicles. In an effort to promote passive safety, we are expanding our use of seatbelts equipped with pretensioners and load limiters, and a seat structure which reduces whiplash injuries, under the safety principle of "compatibility" (or mutual safety), which simultaneously balances the safety for our cars with reducing damage to other cars and injury to pedestrians involved in an accident.



Compatibility Body The new ring-shaped reinforcement structure of the Subaru R1 and the Stella, Subarus mini cars, has a frame structure with the same height as a passenger car, to achieve a high degree of safety in a collision with such vehicles.

#### Body to Protect Pedestrians

In order to reduce the impact of crash applied to a pedestrian in head or legs, a shock-absorbing structure is adopted to such items as a fender, hood, hood hinge, windshield wiper and bumper.

#### Efforts for Active Safety

#### Refining Automobile's Basic Functions Prevents Accidents

As part of our efforts to promote active safety, we are improving vehicles' basic functions, or in other words the driving, cornering and stopping functions. Furthermore, we are expanding use of VDC (Vehicle Dynamics Control) and braking assist, and conducting research and development on state-of-the-art safe vehicles that protect drivers by recognizing in advance the various risk factors that can lead to accidents.

#### Driving Assist System

#### Our Efforts to Develop Collision-Free Cars

Subaru succeeded in commercializing the driving assist system "ADA" (Active Driving Assist) for the first of its kind in the world. Furthermore, in 2003, we developed a system whereby a wide variety of traffic conditions in front of the driver can be optimally recognized regardless of weather conditions by using "sensor fusion" between stereo camera, one of Subaru's core technologies, and millimeter-wave radar; the system also provides a wide range of information and alarms to assist drivers in ensuring safe driving. It is in such ways that Subaru is conducting research and development into collision-free cars, in order to create a society free from traffic accidents.

# Subaru's Vehicles for the Disabled The TransCare Series

Subaru has been manufacturing and selling vehicles in a series called TransCare, vehicles for the disabled, since 1982.

Subaru offers a wide selection of TransCare automobiles, from mini-car Stella and wagon Sambar, to the Legacy, a standardsized car. In response to the increasing demand for wheelchair accessible vehicles, our Sambar mini car offers an electrically operated wheelchair lifter<sup>44</sup> that allows for loading and unloading of passengers in wheelchairs, including TransCare Wing Seat<sup>43</sup> series, which help to load and unload smoothly. We also offer a type equipped with a stretcher<sup>45</sup>, which allows for loading and unloading of passengers who are lying down.



\*3 Wing seats: Rotating front and left rear seats to allow for easy loading and unloading of passengers.

\*4 This is the only mini car to adopt the Side-lifting System. This lifter is electrically operated, providing passenger security and safety by loading and unloading

from the side of the car, instead of from the roadway.

 $^{\ast}5$  The car is equipped with a stretcher with wheels to carry patients in a laid position.

# Each Individual Employee's Growth is Connected to the Company's Growth

(1) We have established a Subaru Technical Expert Program as part of our efforts to improve and pass on our skills.

- (2) We are promoting activities to achieve a work-life balance that satisfies both career and family life.
  - (3) We aim to create a workplace with zero disasters and zero accidents based on our fundamental philosophy: "Health and Safety take priority in any business".

#### Human Resource Development, Benefits Packages and Employment

#### Subaru Technical Expert Program

POINT

#### Creating a New Program to Enhance and Pass On Our Skills

As one of our measures intended to improve our technical expertise, in 2006 we established the Subaru Technical Expert Program, described as follows:

(1) Enhancing Basic Skills:Specific standards have been prepared for the knowledge and skills necessary for employees to do their jobs, and employees can receive multiple lectures and skill training sessions at the Subaru Technical School, a "dojo" for skill training that focuses on the basics and fundamentals as defined by the standards. Skill improvements are confirmed through evaluations.

(2) Passing on Skills: A system has been made to continuously hand down special skills, including the technical intuition and knacks of our highly skilled, experienced technicians. Two courses, "Passing On Special Skills" and "Passing On Know-How", are available.

# Supporting Both Employees' Careers and their Family Lives Promoting Work-Life Balance

We believe that it is important to support both our employees' careers and their families, and also to provide a comfortable working environment, in order for them to be able to fully demonstrate their abilities. In 2005, we prepared an Action Plan in accordance with the Next Generation Education and Support Promotion Act, and are proceeding with activities to reinforce our Parenting Support Program. In April 2006, we extended the maximum allowable period of maternity leave, whereby employees are allowed, if they wish, to take maternity leave until the end of the April immediately after the child's second birthday, which is even longer than the period mandated by law. At the same time, we introduced a Program for Working Shorter Hours, whereby regular working hours are reduced upon request for those taking care of children or family members. As we continue to prepare several measures such as the second Action Plan, we will make an effort to create a balance between work and private life as well as a more comfortable work environment for our employees.

#### Our Efforts: The First Action Plan, Responding to the Next Generation Education and Support Promotion Act

- (1) Improve the work system to meet the needs of employees raising children: Extending the period of maternity leave to the end of the April after the child's second birthday. Allowing shorter working hours (by a maximum of 2 hours less per day) for parents until their child enters elementary school.
- (2) Implement policy to reduce the practice of working over-time: Introducing the "No Over-time Day"
- (3) Ensure that the excellent Parenting Support Program is made known throughout the company: Handing out pamphlets.

Mark of Certification for the Next Generation Education and Support Promotion Act

Special Leave Days off to take care of sick children (5 days per year) Financial Support We have set up a special menu to support parents in the cafeteria-style welfare benefits program, and also offer a more favorable points system for users.

#### Supporting the Acquisition of Official Certifications

#### Enhancing Support for Self-Development in Addition to OJT and In-House Training

In addition to on-the-job and in-house training to educate employees through their actual job assignments, we are proactively supporting our employees' selfdevelopment as well. For example, starting in 2007 we are subsidizing expenses such as exam fees and tuition for seminars incurred while acquiring certain official certifications designated by the company as part of our cafeteria-style welfare benefits program, called "My Vision". We will continue to expand our support efforts by providing a constructive welfare benefits program that meets the needs of our employees so that all our employees can achieve their dreams.

Lettis in wiy	vision, uie	caletella-style	wenale	Denenits	program

Category	The Company Provides:
Self- Development	Selectable in-house group training and correspondence courses, lectures on the official certifications designated by the company and assistance to acquire such certifica- tions, various types of "schools" and so forth
Livelihood Support	Access to nursing care and parenting (nursery schools, baby sitters) facilities, children's education, etc.
Life Planning	Seminars and consulting services on life planning
Refreshing Activities	Access to gyms, lodging facilities, package tours, cultural appreciation, sport-game watching, leisure facilities, etc.
FHI Products	The chance to purchase FHI products (excluding cars), and access to vehicle inspections and repairs at affiliated dealers

Promoting the Rehiring of Employees Who Retired at the Age of 60

## The Senior Partner Program to Train Younger Employees and Pass On Technologies and Techniques

In 2003, we introduced the Senior Partner Program to promote the re-hiring of retired employees. Subsequently, we revised part of this program to allow people to get re-employed and continue working until 65. In fiscal 2006, we revised this program once again to activate the use of human resources of retired employees. We will continue to promote the rehiring of employees who retired at the age of 60, so that the experience and abilities of such experienced employees can be utilized as training tools and passed down to younger employees.

#### Promoting the Employment of People with Disabilities We Have Achieved the Legally Mandated 1.8% Rate of Employmentof People with Disabilities and Are Continuing to Promote Their Employment

The percentage of FHI employees with disabilities was approximately 1.9% as of March 2007, exceeding the legally mandated rate of 1.8%. We are making an active effort to employ people with disabilities in order to create an affluent society that allows everyone to lead a satisfactory life. Approximately 150 people with disabilities work at FHI at present. In the future, we will continue our efforts to hire and employ people with disabilities.

#### **Creating Health and Safety**

FHI has established a Basic Philosophy of Health and Safety and a Basic Policy, and is conducting health and safety activities through the efforts of such organizations as the Central Health & Safety Committee.

#### **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.

#### The Organization Promoting Health & Safety



#### Occupational Safety

#### (Working on Eliminating Risks with Both Awareness and Management)

FHI has been conducting activities to help raise safety awareness, improve management of the workplace, and eliminate risks. To raise awareness, KYT\*<sup>1</sup> and the Hiyari Hatto\*<sup>2</sup> Activity were implemented. To improve management of the workplace, a self-management activity called TSZ\*<sup>3</sup> was introduced at an early stage in each workplace. In addition, in 2000, FHI introduced a small-group risk assessment system to improve safety and to eliminate risks. FHI also makes efforts to further improve occupational health and safety levels and prevent on-the-job injuries. Towards these ends, we introduced a new risk assessment system to the offices where the Occupational Health and Safety Management System\*<sup>4</sup> had already been implemented, and are constantly working on improving the Management System by internal auditing.

#### Trends in Occupational Accident Occurrence

	2000	2001	2002	2003	2004	2005	2006
The number of occupational accidents occurred	80	77	64	48	45	34	37
Frequency Rate (FHI Automotive Business Unit)	1.17	0.77	0.81	0.59	0.37	0.55	0.32
Frequency Rate (Average in the Manufacturing Industry)	1.02	0.97	0.98	0.98	0.99	1.01	1.02

#### Health Care

#### Added Extra Items to the List of Legally Mandatory Diagnostic Items for Health Maintenance

To revitalize our business activities, it is important that employees are always in good physical and mental condition and can use their skills and abilities to the full. To help reduce the amount of employee sick leave, we have been working on the

early detection and treatment of disease by adding extra items to the list of legally mandatory diagnostic items. In addition, we take measures to care for employees' mental health according to the four items advised by the government. The Mental Health Counseling Consultation Services have been established at all our business sites, where employees can consult clinical psychotherapists in person.

#### Traffic Safety

#### (Education and Training to Ensure Safe Driving

FHI is making various efforts to prevent traffic accidents that might occur in the course of business activities, commuting, or private time.

The Tokyo Office held classes on Safe Motorcycle Driving in cooperation with the Metropolitan Police Department's team of motorcycle policemen in order to provide our employees with basic lectures and driving lessons. In addition, we are implementing education and training that utilize a safe driving simulator to further enhance safe driving.

The Gunma Manufacturing Division has implemented education that includes real-life experiences of safe driving as part of their voluntary traffic safety promotion activities. This education is designed, in addition to providing instruction in driving techniques, to teach drivers about different perspectives on driving, for example the way drivers' actions can be dangerous to pedestrians and how to make a right turn in a safe, timely manner.





Class on Safe Motorcycle Driving (Tokyo)

Real-life experience education of safe driving (Gunma)

#### Creation of a Comfortable Working Environment

#### (Conducting Improvement Activities to Create a Comfortable Workplace)

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

#### Lecture entitled "A New Common Sense for Driving in the 21st Century"

Mr. Kiyoshi Komoda, an automotive journalist, gave a lecture on how to satisfy economic, ecological and safety benchmarks in driving, which was entitled "A New Common Sense for Driving in the 21st Century", at the 31st company-wide Health & Safety Congress. The congress turned out to be an opportunity for all the participants to verify the principle of disseminating safe, comfortable driving and our philosophy of traffic safety, and to make a commitment as a team.



<sup>\*1</sup> KYT: Training for predicting dangers; K: Kiken (Danger); Y: Yochi (Prediction); T: Training

through a clear set of processes: "planning, implementation, evaluation and improvement.

<sup>\*2</sup> Hiyari Hatto: Activity to collect cases of near-miss incidents.

<sup>\*3</sup> TSZ:Total Section Zero (related departments and sections make combined efforts to attain zero disasters).

<sup>\*4</sup> A system to promote the organized, stable management of health and safety, aiming at creating a workplace with zero disasters and zero danger

# Social Contribution

## Social Involvement: Social Contribution Activities as Part of Our CSR Activities

(1) We participated in the Safe Driving Support Project that Analyses Information on Slippery Road Conditions by making use of our IT technologies.

(2) We established a system that grants awards to those employees conducting volunteer activities in their private time.

(3) We are contributing to the promotion of motor sports culture by participating in the World Rally Championship.

#### **Social Contribution Activities**

#### **Social Contribution Policy**

FHI has established a Social Contribution Policy as one of the CSR activity areas and is actively promoting social contribution activities.

#### Social Contribution Policy

POINT

- (1) We will contribute to the development of science and technology and automobile culture and to the diffusion of road safety.
- (2) We will contribute to the fostering of human resources who understand the pleasure, importance and preciousness of creative manufacturing.
- (3) We will contribute to the development of the communities we operate in.
- (4) We will support each other in contributing to society as good citizens.

# For the Development of Automotive Culture and the Promulgation of Traffic Safety Sharing Information Using Cutting-Edge IT Techniques

ITS technology, used to connect cars with society through networks. In order to realize a safer and more convenient society, Subaru has been developing a system called the Subaru User Communication System, which utilizes this ITS technology to remotely control vehicular information.

Subaru has adapted this technology for use in electric vehicles, and has been making progress in conducting verification testing with an electric power company. Through these efforts, we can get a grasp on the performance of each item of equipment installed in (or on) vehicles while they are actually being used in various operations ranging from driving to recharging the battery. We will continue to press ahead with our development efforts to usher in and spread the use of the en-



Concept of Subaru User Communication System

vironmentally-friendly vehicles of the future as soon as possible.

At the same time, we have been making efforts to create safer communities by proactively providing society with the information provided by our cars. For example, technologies that use the *probe information* system, which treats cars as one kind of sensor in communities and will provide society with the information gleaned from those "sensors", will allow us to create new social values. Subaru is also participating in the Safe Driving Support Project that Analyses Information on Slippery Road Conditions (also known as the "Tsuru-Navi", or "Slippery Navigation" Project), which is led by a joint government-academia-industry team, and have been working to develop and provide a societal experimentation system that uses the Subaru User Communication System.

In this societal experiment we collect information, including the frequency of antilock brake system use and judgments on how slippery the road surfaces are, from our cars driving in snow-covered terrain; we then analyze that information and publicize it on a website dedicated to this experiment, under the heading of "the Akita Slippery Road Conditions Navigator" so that members of the general public can also utilize this information for safe driving. We conducted this experiment, as a community-based probe societal experiment, in the cities of Akita and Sapporo over a period of four months, from December 2006 to March 2007, using vehicles offered by AKITA Subaru Co., Ltd. and HOKKAIDO Subaru Co., Ltd.\*<sup>1</sup>

#### Supporting Volunteer Activities

#### The System that Awards Employees to Enhance Awareness of Social Contributions

In order to allow all employees to participate in volunteer activities on a free, casual basis, we have installed boxes for the recovery of used postage stamps, prepaid cards, etc., and are donating the collected items to organizations such as volunteer groups.

In addition, in fiscal 2006 we introduced a system to grant awards to those employees who are making private efforts in volunteer activities, and presented four employees with awards at the 1st Annual Volunteer Activity Award Ceremony in July.



The four employees who received awards as well as Mr. Takagi, Chairman of the CSR Committee and Mr. Sakamoto, the General Manager of the General Administration Department

\*1 For more information about this societal experiment, please visit the Web site dedicated to this project. (Japanese only) Click on the Go to Tsuru Navi button at http://tsurunavi.ce.akita-u.ac.jp/ to see a list of locations with slippery road conditions, which are updated daily. Taking up the Challenge of the WRC (World Rally Championship) Contributing to Automotive Culture by Participating in the WRC Subaru participates in the WRC, the most prominent rally event in the world. Since 2004, WRC events have been held also in Japan. By participating in these events, we are playing a prominent role in the development and promotion of the automotive culture that is "motor sports".

#### Contributing to Local Communities

#### (Playing a Vital Role in Local Health Care: FHI's Ota General Hospital)

To coexist in harmony with local communities, employees at each business site actively participate in local events, and hold special events.

Fuji Heavy Industries Health Insurance Society's Ota General Hospital (in the city of Ota, Gunma Prefecture), which is owned by the Fuji Heavy Industries Health Insurance Society, is open not only to employees of FHI's group companies, but also to members of the general public residing in and around Ota, and is a pillar of community health care. For instance, more than 90% of its patients are members of the general public, and the hospital is able to accept approximately half the patients brought in by ambulance from the city of Ota.

#### The Activities of FHI's Sports Clubs (The Hardball Baseball and Track & Field Teams) Coexisting with Local Communities: Social Contribution Activities

To coexist in harmony with local communities, our hardball baseball team regularly holds baseball classes, mainly in Gunma Prefecture. We offered the classes three times in fiscal 2007 out of our hope to contribute to the health and sound growth of juveniles in local communities through baseball. Our hardball baseball team was victorious in the 33rd Amateur Baseball Japan Championships in November of 2006.

In March of 2007, FHI's track & field team manager, Mr. Kozasu, gave a lecture on the activities and the future of FHI's sports clubs during the training for our new recruits, which took place in the Tomo region in Gunma Prefecture. Our track & field team has participated in the All Japan Corporate Marathon Relay Race, held in Gunma Prefecture on New Year's Day, for seven years in a row.



FHI's hardball baseball team was victorious in the 33rd Amateur Baseball Japa





The baseball class for elementary and junior high school students hosted by FHIs hardball baseball team

The All Japan Corporate Marathon Relay Race, held on every New Years Day

# Events and Cleanup Activities to Contribute to Local Communities in Fiscal 2006

#### Gunma Manufacturing Division [Events]

Subaru Appreciation Festival at the Yajima Plant (About 35,000 visitors)/Friendship and Appreciation Festival for locals and employees' families at the Oizumi Plant (About 2,000 visitors)/Plant Tour (82,130 visitors, mainly elementary school children)/Summer Vacation Vehicle Class (About 430 participants of elementary school children and their guardians)/Subaru Environmental Exchange Circle (28 local elementary schools, 2282 participants in total)/Participated in the summer festivals of Ota City, Isesaki City, Oizumi Town, and Ora Town/Hosted Subaru Cup Rubber-Ball Tournament for Children (About 400 participants)/Hosted the baseball class for elementary and junior high school students (About 1,000 participants)/Subaru Friendship Concert hosted by the Subaru Community Exchange Association (4 times a year, 2,000 participants in total)

#### [Cleanup Activities]

Cleanup of Kanayama<sup>\*2</sup> as one of the Subaru Community Exchange Activities (350 participants)/Environment beatification activities (About 200,000 participants in total a year)



Subaru Appreciation Festival drew 35,000 visitors (Gunma Manufacturing

## Saitama Manufacturing Division

employees (Gunma Manufactur-

Participated in the Kitamoto Festival (About 300 participants)

[Cleanup Activities]

Cleaned up around the plants

Pikapika Kitamoto Omakase Program, Kitamoto-city Voluntary Cleanup Program (819 participants in total)

Utsunomiya Manufacturing Division

[Events]

Friendship Festival (About 10,000 visitors)

Environmental Exchanges (5 local elementary schools, 358 participants)

#### [Cleanup Activities]

Cleanup campaign around the plants (300 participants) Participated the voluntary cleanup hosted by the Police and Office Association of the Utsunomiya Minami Police Station, which promotes sound nurturing of young people (30 participants) **Tokyo Office / Headquarter** 

#### [Events]

Held summer evening festival

Tokyo office : Office Tour for elementary school students (5 local elementary schools, 410 participants)



participated by 819 employees in total (Saitama Manufacturing Division)

elementary school students (Utsunomiya Manufacturing Division)

\*2: An association consisting of FHI and its fifty-four suppliers, organized with an aim to 1) enhance interactions with local residents in the city of Ota and its neighboring communities, 2) develop local areas, and thereby 3) contribute to creating comfortable, people-friendly communities. For further details, please visit the following Web site:

http://www.chiiki-kouryuukai.com/index.html

# edort nvironmental A



FHI began its Environmental Action Project in 1990 and since then has proceeded with voluntary efforts for the environment with plans in 1993 (the First), 1996 (the Second) and 2002 (the Third). In fiscal 2006, we completed the five-year Third Voluntary Plan for the Environment.

In this report, we would like to introduce the results of the five-year Third Voluntary Plan by focusing on our activities in fiscal 2006.

In fiscal 2007, the Fourth Voluntary Plan for the Environment (the new FHI Environmental Conservation Program for fiscal 2007 thru 2011) began, and as a group we have been actively working to achieve the targets of the Plan in order to reduce the environmental impact of our corporate activities.

# We are making every effort throughout our entire corporate group to tackle global environmental issues

(1) We reduced CO<sub>2</sub> emissions, water consumption and the use of PRTR chemical substances in fiscal 2006.



(2) We are conducting several activities based on our Environmental Management System (EMS), including running emergency response drills and holding Case Study Presentations on improving operations.

(3) At present, we are making a group-wide effort to achieve the targets of the Fourth Voluntary Plan for the Environment.

#### **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 other air pollutants. We believe that automobiles make life more pleasant and reflect an affluent society but fully understand that automo-

biles have such disadvantages, as well as advantages. With these in mind, we must work hard for a better future. FHI accepts the task to aim for fusion of the global environmental response (improving fuel economy) and the benefits of automobiles (pleasant driving, comfort and reliance) by considering the environmental impacts and reducing the environmental burden through the lifecycle of development, production, use, disposal, and recycling of automobiles.



#### FHI Group's Overall Environmental Burden Concerning Automotive Business

#### **Environmental Management**

#### **Organization**

FHI established the Corporate Environment Committee to realize the Environmental Policy, the Operating Criteria for Environmental Conservation and the New Voluntary Plan for the Environment. The Committee is chaired by the officer in charge of the environment and administered by representatives from all business sites. At the Committee meeting held in May 2007, there were discussions of the overall achievement of the Third Voluntary Plan for the Environment and the method of voluntary activities of the Fourth Voluntary Plan for the Environment.



#### Environmental Performance Assessment System

We introduced the Environmental Performance Assessment System in fiscal 2002 and are working on further improvement of the environmental performance. The assessment results of fiscal 2006 are shown in the following chart. Challenge we need to meet in the future includes strengthening the reduction of environmental burden at the process of sales, service and products development.



#### **Environmental Performance**

The main aspects of our environmental performance in fiscal 2006 are as shown in the following graphs. CO<sub>2</sub> emissions, water consumption and use of PRTR chemical substances were all reduced. We also achieved zero emissions<sup>\*1</sup> in terms of landfilled waste.







#### Trends in Volume of Water Used at All Manufacturing Plants





\*1: FHI's definition of zero emissions: The total amount of landfilled waste (waste materials directly landfilled + waste materials landfilled after treated intermediately) is less than 0.5% of the total amount of waste materials excluding scrap metal (industrial waste + industrial waste subject to special control + general waste from business operations).

#### Establishing an Environmental Management System )

FHI already acquired ISO14001 certification for all of its businesses, including the head office, by fiscal 2004. In fiscal 2006, SIA, SOA and RMI, FHI's overseas affiliated companies, acquired integrated certification. Additionally, Subaru Kumakoto Corporation, FHI's domestic dealer, also acquired ISO14001 certification. Now, six of FHI's dealers in Japan have the certification. We also conduct an environmental audit regularly every year to measure the effectiveness of the Environmental Management System.

#### Environmental Accounting

In fiscal 2000 we introduced environmental accounting. Our environmental costs in fiscal 2006 were 15.9 billion yen, an increase of 350 million yen compared to the previous fiscal year. This was due to an increase in R&D spending. We were able to cut production costs by 50 million yen. On the other hand, economic benefits from our environmental activities totaled 1.9 billion yen, which represents an increase of 100 million yen compared to the previous fiscal year. This was mainly due to rising unit prices for valuable resources being sold.

For more details on our environmental accounting, please refer to p. 11 of our Supplementary Volume for Data related to the 2007 S & E Report, which can be found on our website.

#### Environmental Education and Enlightenment

In fiscal 2004, we prepared company-wide unified textbooks for environmental education. We have continued educating different levels of employees, ranging from new recruits to those receiving promotions by internal acquiring certification every year. In addition, we are trying to carry out activities according to the plan, including emergency drilling based on the Environmental Management System (EMS), Operations Improvement Case Study Presentation and educational support to business partners.

#### (Environmental Communication

FHI has arranged contact channels to maintain communication with local residents in each business area, and distributed environmental information in a variety of ways. In the Subaru Visitor Center in the Gun-

ma Manufacturing Division, we have a recycling lab to introduce our approaches to tackle environmental issues. In fiscal 2006, 82,130 visitors visited the Center. (elementary schoolchildren: 69,031 from 875 schools, general visitors: 13.099)



The recycling lab introducing the flow of recycling

#### Cases Where Limits Set in Environment-Related Laws Were Exceeded, Environmental Accidents, and Complaints

The following table shows the number, in fiscal 2006, of cases where the legal limits set in environment-related laws were exceeded (including cases where the limits from voluntary standards or limits agreed with the local area were exceeded) as well as the number of environmental accidents and environment-related complaints, plus all related detail. By investigating the causes of these events or complaints and by implementing countermeasures, we are proceeding with our effort, to achieve our goal of zero cases.

#### Fiscal 2006 The Number of Cases Where Limits Set in Environment-Related Laws were Exceeded and Details

Name of manufacturing division:	Number of cases:	Details:	Main corrective measures:
Gunma Manufacturing Division	1 (noise)	Some of the noise levels measured at the Yajima Plant exceeded acceptable levels as defined by the voluntary standards.	Countermeasures were taken by installing inverters in exhaust fans in the plant and by changing the angle of the exhaust outlet. As a result, values dropped to within the voluntary standards.
Saitama Manufacturing Division	1 (noise)	The noise levels measured at the Akabori river bed, northeast of the plant, exceeded the acceptable levels stipulated by law.	This has been reported to the government, and is being managed in an appropri- ate manner. No complaints have been made regarding this matter.
	2 (water pollution)	The BOD and pH levels measured in sewage discharge water exceeded the acceptable levels set in the voluntary standards.	Consumable items such as wastewater treatment equipment were regularly changed and pipes were cleaned, since these together were considered to be the source of the problem.

FHI established voluntary standards, which are 20% stricter than environment-related laws, and is working to achieve zero cases where these standards are exceeded.

#### Fiscal 2006 The Number of Environmental Accidents and Details

Name of manufacturing division:	Number of cases:	Details:	Main corrective measures:
Gunma Manufacturing Division	5, of which 1 in- volved water flowing off the premises.	A total of five accidents occurred, including an incident where there was white water (muddy water) runoff from the site of plant foundation construction.	Although accident prevention training is provided to constructors every year, cautions and instructions were reissued to constructors and work procedures were revised in order to ensure accidents do not reoccur.
Aerospace Company (Utsunomiya Manufacturing Division)	4	Four accidents occurred, including one involving leakage of chromium waste liquid.	Countermeasures, including issuing instructions to constructors and re- vising work procedures, were taken.
Tokyo Office	2	Two oil leaks occurred.	To prevent the same accidents from reoccurring work procedures were revised following each incident.

FHI is working to reduce the number of incidents by keeping count of environmental accidents (including those solved internally by the relevant office or division) and by taking proactive measures so that accidents, which can have an environmental impact that extends beyond our premises, do not occur.

#### Fiscal 2006 The Number of Environment-Related Complaints and Details

Name of manufacturing division:	Number of cases:	Details:	Main corrective measures:
Aerospace Company (Utsunomiya Manufacturing Division)	6 (noise)	We received a total of six complaints, including three regard- ing noise from aircraft.	Various countermeasures were taken, including arranging the time schedule to prevent aircraft engine operations on weekday nights and all day on holidays and implementing noise reduction measures
Eco Technologies Company (Utsunomiya Manufacturing Division)	thrologies Company miya Manufacturing )) 1 (odor) One complaint regarding the odor of paint was received from a cal resident living west of the plant.		Although an investigation was conducted, the cause could not be deter- mined. We will continue to be very careful about air emissions.
	1 (noise)	We received one complaint regarding the noise generated by forklifts from a local resident living west of the plant.	We carried out a training program for forklift drivers.

# Overall Achievements of the Third-Voluntary Plan for the Environment

FHI has been conducting company-wide environmental conservation activities under FHI's Third Environmental Conservation Program (fiscal 2002 through fiscal 2006: the Third Voluntary Plan for the Environment) established in 2002. Here is our report on overall achievements for the past five years. Although we were not able to reach all our targets, we will continue working toward our goals by setting new targets under the Fourth Voluntary Plan for the Environment, which comes into effect in fiscal 2007.

#### [The Third Voluntary Plan for the Environment] FHI Environmental Conservation Program (fiscal 2002 through fiscal 2006)

1. Green Produc	cts	◯:Achieved, ×:Not Achieve	ed, —:N/A
Items	Goal(s) under the Third Voluntary Plan for the Environment (fiscal 2002 thru fiscal 2006)	Results in fiscal 2006	Evaluation
Improving fuel economy	<ul> <li>[Automobiles]</li> <li>a. Continue to improve fuel economy for every full model change and annual model change.</li> <li>b. Achieve fiscal 2010 fuel economy standards for all weight ranks by fiscal 2006.</li> </ul>	<ul> <li>Targets could not be achieved in two out of the five ranks of passenger cars with gasoline-powered engines. However, the achievement rates for these two classes were 95% and 99%, for the 1250 kg and 1500 kg classes, respectively. The standards were considered to have been met when the credit system was applied. Targets are projected to be achieved for all classes in fiscal 2007.</li> <li>For gas-powered mini-sized trucks, targets for all applicable classes were met in fiscal 2001, and the targets for all truck types have been consistently met since fiscal 2002.</li> </ul>	×
	[General-purpose engines] a. Aim to improve the average fuel economy of general-purpose engines by 15% (compared with the 1995 level) by 2005.	- Achieved a 15% improvement (in fiscal 2005).	0
	[Automobiles] a.Produce excellent low emission vehicles (E-LEV) or good low emission vehi- cles(G-LEV) for all models, except for a few, by autumn 2002.	- Except for those few vehicle types, all models have become E- LEV or G-LEV.	0
Cleaner exhaust emissions	a. 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 fis- cal 2006.	<ul> <li>The target was achieved, in that starting in June 2006 and thereafter, the average ratio of vehicles with emissions reduced by 75% (compared to 2005 standards) was 50% per month.</li> <li>The 80% of vehicles target was not achieved, in that the total ratio of vehicles with emissions reduced 50% and 75% (compared to fiscal 2005 standards) averaged 74% per month. This target is projected to be achieved in fiscal 2007.</li> </ul>	×
	[General-purpose engines] a. Aim to reduce the average emissions of HC and NOx from general-purpose en- gines by 30% (compared with the 1995 levels) by 2005.	- Emissions were reduced by 56% (in fiscal 2005).	0
	[Automobiles] a. Hybrid vehicles: Continue development for market launch, and aim at limited in- troduction to the market in fiscal 2007.	-The plan for market release was discontinued due to changes in product strategy. Development of hybrid systems and so forth proceeded through use of alliances.	-
Developing products using clean energy	<ul><li>a. Natural gas vehicles: Continue market expansion of NGVs based on the new Legacy.</li><li>b. Fuel cell vehicles: Continue developing towards the next generation of vehicles.</li></ul>	<ul> <li>-The Legacy B4 2.0CNG, a natural gas vehicle, is now available on the market.</li> <li>-We are continuing to develop next generation cells for hybrid and fuel cell vehicles.</li> </ul>	0
	[General-purpose engines] a. Introduced general-purpose engines compatible with CNG and LPG fuel during fiscal 2002.	-Although the products were developed, their market release was postponed.	×
Improving recyclability	<ul> <li>a. Improve recyclable design for new models, and contribute to a recycling rate of 95% in 2015.</li> <li>Improve the disassembly process for the benefit of marketing for re-use and recycling.</li> <li>Use easy-to-recycle plastic materials more extensively.</li> </ul>	<ul> <li>-In fiscal 2006, the recycling ratio for shredder residue was 75% and for air bags, 94.2%, satisfying the relevant legal standards.</li> <li>-We are currently working to improve the dismantleability of wiring harnesses and so forth.</li> <li>-Olefin resin, which is extremely recyclable, is now being used for most plastic parts in new models. The same material will continue to be used in fiscal 2007 and thereafter.</li> </ul>	0
Reducing substances with environmental impact	<ul> <li>[Automobiles]</li> <li>a. Promote development of technologies which replace substances with environmental impact, aiming at faster application to developing vehicles.</li> <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: Liquid crystal displays, combination lamps, discharge head lamps, and room fluorescent lighting.</li> <li>Stop using cadmium from January 2007.</li> <li>Stop using heavalent chromium from January 2008.</li> </ul>	<ul> <li>-Lead: The amount of used lead was reduced to less than 1/10 compared to fiscal 1996.</li> <li>-Mercury: The use of mercury has been prohibited, except in those four parts.</li> <li>-Cadmium: The use of cadmium has been prohibited.</li> <li>-Hexavalent chromium: The use of hexavalent chromium was prohibited in April 2007(achieved earlier than expected).</li> </ul>	0
	[General-purpose engines] a. Promote reducing the amounts of substances with environmental impact, such as lead and hexavalent chromium, used for general-purpose engines.	-Lead is no longer used in coatings. Hexavalent chromium is being replaced by trivalent chromium.	0
Reducing exterior noise	a. Promote development of technology to reduce noise that is compatible with both fuel economy improvement and exhaust emissions reduction	-Noise was reduced by realizing two goals; improving fuel economy and switching emissions reduction devices.	0
Curbing global warming regarding air conditioning refrigerants	a. Promote further reduction in the amount of refrigerant (HFC134a) per vehicle.	-The volume of HFCs used in the new Legacy, R1, R2, and Stella has been reduced by 11% compared to conventional vehicles. (450g→400g)	0
Research on traffic environments	a. Work further on Intelligent Transport Systems (ITS) that realize a safe and com- fortable motorized society.	<ul> <li>-Conducted trial tests on a remote information control system for electric vehicles.</li> <li>-Provided a system that uses probe technology to the test program of the Safe Driving Support Project.</li> </ul>	0
Developing environment- related products and businesses	<ul> <li>Promote environment-related businesses, such as wind turbine systems and environmental equipment and devices.</li> </ul>	<ul> <li>-Completed the commercial production design for a 2,000kW class large-scale wind turbine system, and commenced production of pre-commercial production turbines.</li> </ul>	0

#### 2. Clean Plants

Items	Goal(s) under the Third Voluntary Plan for the Environment (fiscal 2002 thru fiscal 2006)	Results in fiscal 2006	Evaluation
Curbing global warming	a. Aim to reduce energy consumption per production cost by 28% compared to the fiscal 1990 level by fiscal 2006. b. Aim to reduce CO <sub>2</sub> emissions by 6% from manufacturing plants compared to the fiscal 1990 level by fiscal 2006.	Reduced energy consumption per production cost by 35% compared to fiscal 1990 levels.     Cut CO <sub>2</sub> emissions by 17% compared to fiscal 1990 levels.	0
Control and reduction of substances with	a. Establish stricter standards than the current voluntary standards for newly estab- lished and remodeled environmental facilities in order to reduce the environmen- tal burden on the air and water.	- Some of our renovated facilities are now operating under severer control targets than those in the current voluntary standards.	
environmental impact	a. Reduce emissions of PRTR chemical substances into the environment.	- Reduced emissions by 41% compared to fiscal 2001 levels.	0
plants	a. Reduce Volatile Organic Compound (VOC) in vehicle production lines to the level of 45 $\rm g/m^2$ or less on average by the end of fiscal 2006	- Reduced VOC emissions (per surface area) in coating processes to 43.8 g/m <sup>2</sup> , 20% less than fiscal 2001 levels.	
Reducing wastes generated at manufacturing plants	<ul><li>a. Aim at further advances in zero emissions and zero levels of waste landfilled both directly and indirectly.</li><li>b. Promote recycling of waste materials and using them as parts of products, as well as curbing their generation.</li></ul>	<ul> <li>Achieved "zero waste" that was directly or indirectly bound for landfills (including ash after thermal recycling). SIA, a vehicle manufacturing site in North America, also reached zero tons of waste bound directly for landfills in May 2004.</li> <li>Reduced waste by 24% compared to fiscal 2001 levels.</li> </ul>	0
Saving water resources	a. Reduce the amount of water used in the manufacturing plants.	- Cut water consumption by 33% compared to fiscal 2001 levels.	0
	a. Request a research report from suppliers on the contents of substances with environmental impact, and establishment of Environmental Management System (EMS). The following are the target dates for establishing the EMS:		
Green	<ul> <li>Automotive Business Unit: 95% or more of the suppliers, including overseas ones, should have established a system by March 2005.</li> </ul>	- 100% (316 out of 316) of their suppliers have established an EMS.	
activities	- Industrial Products Company: by the end of March 2004.	- 100% (98 out of 98) of their suppliers are now in the process of establishing an EMS.	0
	- Promote green procurement activities in other departments, including the Aero- space Company.	<ul> <li>- 78% (47 out of 60) of the suppliers of the Aerospace Company and 95% (38 out of 40) of the Eco Technology Company's suppliers have established an EMS.</li> </ul>	
	<ul> <li>a. Develop green procurement activities with overseas suppliers as well (Automotive Business Unit).</li> <li>Research started in fiscal 2002 on the status of introducing the EMS and the contents of substances with environmental impact</li> </ul>	- 100% (12 out of 12) of overseas suppliers have established an EMS.	

#### 3. Green Logistics

Items	Goal(s) under the Third Voluntary Plan for the Environment (fiscal 2002 thru fiscal 2006)	Results in fiscal 2006	Evaluation
Reducing the environmental burden caused by logistics	a. Streamline transportation and reduce packaging materials.	<ul> <li>Increased the number of vehicles carried via joint transportation by 2.4 times compared to fiscal 2001.</li> <li>Began using returnable (reusable) packaging materials and reduced the number of trips where containers are empty.</li> </ul>	0

#### 4. Green Dealers

Items	Goal(s) under the Third Voluntary Plan for the Environment (fiscal 2002 thru fiscal 2006)	Results in fiscal 2006	Evaluation
Promoting environmental conservation activities at dealers	<ul> <li>a. Support the environmental conservation activities by dealers.</li> <li>b. Promote recycling and proper disposal during the distribution and disposal stages.</li> <li>- Collect and destroy specific chlorofluorocarbon (CFC 12), collect CFC 12's substitute (HFC 134a), collect and dispose of air bags, and collect warning flares.</li> <li>c. Continue to collect used bumpers (ongoing).</li> <li>d. Work to comply with the End-of-Life Vehicles Recycling Law (ELVs Recycling Law).</li> </ul>	<ul> <li>Confirmed the current status of all dealer outlets through the "Inspections of Environmental Compliance" and carried out the nec- essary improvements.</li> <li>Vehicles were recycled in fiscal 2006, to comply with the ELVs Recy- cling Law.</li> <li>Achieved a 75% recycling rate of shredder residue.</li> <li>Achieved a 94.2% recycling rate of air bags and so forth.</li> <li>Properly disposed of CFCs after recovering 136,059 vehicles.</li> <li>Warning flares at dealers are continuing to be recovered.</li> <li>44,200 used bumpers were recovered.</li> </ul>	0

#### 5. Improving Environmental Management

Items	Goal(s) under the Third Voluntary Plan for the Environment (fiscal 2002 thru fiscal 2006)	Results in fiscal 2006	Evaluation
Implementing actions contributing to society         a. Continue to participate in environmental events, communicate with local resi- dents at plants, and welcome visitors to plant tours.         - We welcomed approximately 90,000 visitors on plant to use to hold Eco Classes by visiting local elementa schools in the Gunma area and five schools in the Utsum also continued to conduct cleaning activities in local computi- ties in the vicinity of our plants.         - We welcomed approximately 90,000 visitors on plant to use to hold Eco Classes by visiting local elementa schools in the Gunma area and five schools in the Utsum also continued to conduct cleaning activities in local co plants.		<ul> <li>We welcomed approximately 90,000 visitors on plant tours, and contin- ued to hold Eco Classes by visiting local elementary schools (28 schools in the Gunma area and five schools in the Utsunomiya area); we also continued to conduct cleaning activities in local communities near plants.</li> </ul>	0
Disclosing environment-related information	<ul> <li>a. Continue to publish environmental reports and release environmental information through publicity channels from time to time.</li> <li>b. Improve and upgrade the contents of environmental report (e.g., compliance with guidelines, and reports including group businesses).</li> </ul>	<ul> <li>The 2006 Environmental &amp; Social Report was published in August.</li> <li>We continued to improve the contents of the Report and released the Supplementary Volume for Data related to the 2006 Environ- mental &amp; Social Report on the website.</li> </ul>	0
Implementing environmental education and educational campaigns	<ul> <li>a. Incorporate environmental education into the company education system and put it into practice. Implement educational campaigns through company newsletters and various media.</li> <li>b. Continue to implement lectures and presentations of operation improvement case studies (ongo- ing).</li> </ul>	Implemented environmental education organized for each level of employee and worksite.     Promoted environmental education activities through use of company newsletters.     Continued to conduct presentations of operation improvement case studies and so forth.	0
<ul> <li>a. Establish an EMS at any business sites that have not yet established one, and continue improving the EMS at all business sites with ISO 14001 certification.</li> <li>b. Implement internal environmental audits and environmental facility risk assessments.</li> <li>c. Strengthen our relationship with affiliated companies and establish a consolidated EMS.</li> <li>c. Strengthen our relationship with affiliated companies and establish a consolidated EMS.</li> <li>c. Strengthen our relationship with affiliated companies and establish a consolidated EMS.</li> </ul>		Continued to make improvements at all business sites by acquiring or maintaining their ISO 14001 certification.     Conducted an internal audit at all business sites and continued to make improvements.     Held regular meetings of the Domestic Affiliated Company Subcommittee on Environment twice a year and continued to make improvements in environmental activities at affiliated manufacturing companies in Japan.     Wo U.S. manufacturing companies (SIA and RMI) and the U.S. sales company (SOA) acquired the integrated ISO14001 certification. Two additional U.S. companies also acquired certification.	0

# The Fourth Voluntary Plan for the Environment

We created the Fourth Voluntary Plan for the Environment for fiscal 2007 to 2011.

In this plan, in addition to setting higher environmental conservation goals, we set targets to make contributions to society through our products by offering our customers greener products through a system of environmentally clean plants, logistics networks and dealers and by carrying out appropriate environmental activities including compliance with laws, regulations and agreements and cooperation with the automotive industry.

Outline of the Fourth Voluntary Plan for the Environment

#### We are making every effort to prevent global warming

- We will continue working to improve fuel economy with every full vehicle model change and annual model change.
- We will reduce CO<sub>2</sub> emissions at manufacturing plants by 15% compared to fiscal 1990 levels by fiscal 2010.
- Regarding logistics, we will reduce energy consumption per sales by 5% compared to fiscal 2006 levels by the end of fiscal 2011.
- We will promote the development and marketing of products that use clean energy, such as electric vehicles and wind turbine systems.

We will address various environmental issues by making continuous improvements throughout all stages

- We will make further progress in reducing emissions produced by our automobile lineup and promote popularization of low emissions vehicles.
- We aim to achieve a 95% recycling ratio in 2015 by taking recyclability into account in new car designs.
- We will reduce emissions of volatile organic compounds (VOCs) per painted surface area of bodies (g/m<sup>2</sup>) in vehicle production lines by 30% compared to fiscal 2000 levels by the end of fiscal 2010.
- We will reduce the amount of waste materials by controlling sources of waste and continuing zero emissions at all manufacturing plants.
- We will promote green procurement, which requires suppliers in and out of Japan to establish Environmental Management Systems and reduce substances with environmental imapct.
- We will support the environmental activities of dealers.
- We will conduct social action programs and disclose environment-related information.

#### Reference [The Forth Voluntary Plan for the Environment] FHI Environmental Conservation Program (fiscal 2007 through fiscal 2011)

#### **1. Green Products**

Items	Goals and Actions	
Improving fuel economy	[Automobiles] a. Continue to improve fuel economy for every full model change and annual model change. b. Increase models that achieve fiscal 2010 fuel standard. c. Promote improvement of fuel economy toward for fiscal 2015 fuel standard.	
Cleaner exhaust emission	[Automobiles] a. Improve on technology which has already achieved a 75% reduction on the 2005 standard for exhaust emissions in order to further reduce exhaust emissions and promote the use of low exhaust emission vehicles.	
Developing products using clean energy	a. Hybrid vehicles: Develop a new hybrid system etc. in collaboration with new alliance partner. *1 b. Electric vehicles: Develop vehicles for launch on the market in addition to business use. *1 c. Continue development of wind turbine systems and market expansion. *2 d. Expand market for applied products which use LPG/CNG engines. *3	
Improving recyclability	a. Improve design to increase recyclability in new car models to achieve a recycling rate of 95% in 2015.	
Reducing substances with environmental impact	[Automobiles] a. Enhance management of substances with environmental impact and further reduce the use of such substances.	
Reducing exterior noise	a. Continue to 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	a. Promote further reduction in the amount of refrigerant (HFC134a) per vehicle. b. Advance the development of air conditioner with low GWP refrigerant.	
Research on traffic environments	a. Work further on Intelligent Transport Systems (ITS) that realize a safe and comfortable motorized society.	
Developing environment- related products and businesses	a. Advance environment-related businesses such as development of refuse collection vehicles and environmental equipment and devices. *2 b. Advance robot-related businesses for conservation of power, labor and energy. *4	

\*1:Subaru Automotive Business

\*2:Eco Technologies Company

\*3:Industrial Products Company

\*4:Robot Dept. Strategy Development Div.



#### 2. Clean Plants

Impreza S-GT

Items	Goals and Actions
Curbing global warming	a. Aim to reduce CO <sub>2</sub> emissions by 15% from manufacturing plants compared to the fiscal 1990 level by fiscal 2010.
Control and reduction of substances with environmental impact at manufacturing plants	<ul> <li>a. Continue reducing emissions of PRTR chemical substances to the environment.</li> <li>b. Reduce volatile organic compound (VOC) emissions (g/m<sup>2</sup>) in vehicle production lines by 30% compared to the fiscal 2000 level by the end of fiscal 2010.</li> <li>c. Reduce environmental risks through Environmental Risk Assessment and totally eliminate the occurrence of incidents, claims and cases where voluntary stan- dards are exceeded.</li> </ul>
Reducing wastes generated at manufacturing plants	a. Reduce the amount of waste materials by controlling sources of waste including increasing yield ratio, reducing removal stock, increasing coating efficiency and improving packaging.
Saving water resources	a. Aim to reduce amount of water used at manufacturing plants by 45% compared to the fiscal 1999 level by fiscal 2011.
Green procurement activities	<ul> <li>a. Request domestic and overseas suppliers to reduce substances with environmental impact and to establish an Environmental Management System (EMS). The following are the targets for establishing EMS.</li> <li>- Automotive Business Unit, Industrial Products Company: Maintain the completed system.</li> <li>- Eco Technologies Company and Aerospace Company: Aiming to complete establishment of the system.</li> <li>To reduce substances with environmental impact, adhere to the schedule of laws, regulations and agreements such as the EU directive.</li> <li>b. For CSR procurement, set the guideline to develop for the suppliers.</li> </ul>

#### 3. Green Logistics

Reducing the environmental burden caused by	a. Be certain of meeting the Revised Energy Saving Law. - Try to reduce energy used per sales by 5% compared to fiscal 2006 by the end of fiscal 2011.
logistics	b. Try to reduce substances with environmental impact by promoting reuse of packaging materials and returnable boxes.

#### 4. Green Dealers

Items	Goals and Actions
Promoting environmental conservation activities at dealers	<ul> <li>a. Support environmental conservation activities by dealers.</li> <li>b. Promote recycling and proper disposal during the distribution and disposal stages.</li> <li>- Destroy specific chlorofluorocarbons (CFC 12), and collect CFC 12's substitute (HFC 134a).</li> <li>- Collect and dispose of airbags, and collect warning flares.</li> <li>c. Continue to collect used bumpers.</li> <li>d. Continue to comply with the ELVs Recycling Law.</li> </ul>

#### 5. Improving Environmental Management

Items	Goals and Actions
Implementing actions contributing to society	<ul> <li>a. Continue to participate in environmental events, communicate with local residents at plants, and welcome visitors to plant tours.</li> <li>b. Continue to participate in cleaning and tree-planting activities in local communities in the vicinity of our plants.</li> <li>c. Offer support and cooperation to environmental activity groups.</li> </ul>
Disclosing environment-related information	<ul> <li>a. Continue to publish social and environmental reports, and aim at releasing social and environmental information through publicity channels from time to time.</li> <li>b. Improve and upgrade the contents of social and environmental reports (e.g., compliance with guidelines, and reports including group businesses)</li> </ul>
Implementing environmental education and educational campaigns	<ul> <li>a. Continue to incorporate social and environmental education into the company education system and put it into practice.</li> <li>b. Continue to implement educational campaigns through company newsletters and various media.</li> <li>c. Continue to implement lectures and presentations of operation improvement case studies at worksites</li> </ul>
Establishing Environmental Management System	a. Continue to improve the Environmental Management System at all business sites with ISO14001.

# **Creating Clean Automobiles: Development Stage and Products**

(1) The Stella, a new mini car released in June of 2006, was designed to provide a user-friendly and comfortable interior for all passengers in the car and to realize smooth acceleration and first-rate fuel economy for its class.

(2) The Impreza underwent a partial model change in June of 2006. The Impreza, which is now equipped with a newly developed 1.5L horizontally opposed four-cylinder engine, was designed to significantly improve user friendliness, fuel economy and emissions performance, while at the same time enhancing agile, sporty driving performance.

#### Improving Fuel Economy

Automobiles emit carbon dioxide (CO2) proportional to the amount of fuel consumed. By improving fuel economy, CO2 will be reduced resulting in the better conservation of limited energy resources and the prevention of global warming. Subaru, while utilizing the advantages of AWD and high power engines, has been working to improve fuel economy by developing technologies that make engines more fuel efficient, reduce transfer loss in the drivetrain and reduce vehicle weight and running resistance, and we are in the process of introducing vehicles which meet the Japanese fiscal 2010 Fuel Economy Standards, the target for gasoline vehicles.

#### **Objective:**

POINT

Achieve the fiscal 2010 Fuel Economy Standards for all vehicle weight classes by fiscal 2006.

#### Status of Subaru's Efforts to Meet the Fiscal 2010 Fuel Economy Standards (Fiscal 2010 Fuel Economy Standards Were Met by Applying Credits)

The objective could not be achieved in two of the five classes of gasoline-powered passenger cars. However, the achievement rates for the 1250 kg and 1500 kg classes were 95% and 99%, respectively. The standards were considered met after credits system\*1 was applied. The objective is set to be achieved for all classes in fiscal 2007. For gasoline-powered mini-sized trucks, the objective has been met every year since fiscal 2001 for all applicable classes.



#### Status of Subaru's Compliance with the Fiscal 2010 Fuel Economy Standards for Gasoline-powered Passenger Cars

#### Improved Engine: Impreza

#### The Newly Developed 1.5L DOHC Engine Installed in the Impreza

In the newly developed 1.5L DOHC engine (EL15), gas flow in the combustion chamber and intake/exhaust ports was improved by adopting a long stroke, which is useful for improving combustion efficiency and torque at low and medium speeds, and combus-

tion efficiency at all speeds was improved by adopting variable valve timing. Both fuel economy and dynamic performance were enhanced by reducing friction between the basic components through enhanced stiffness of the cylinder head and cylinder block.



Equal length/constant pulsation independent exhaust system

#### Improved Engine: Stella (The Stella Achieves First-Rate Fuel Economy

The Stella has achieved a first-rate fuel economy among tall wagons by installing the DOHC naturally aspirated (NA) engine whose fuel economy was demonstrated in the Subaru R1 and R2, and also by proactively adopting a cooperative control system with CVT (continuously variable transmission).





#### Improved Drive-Train: Stella (Fuel Economy Further Improved through the New i-CVT)

Subaru started development of CVT ahead of other companies and released the world's first passenger car with CVT installed in 1987. As a pioneer manufacturer of CVT. Subaru also installed CVT in mini cars and consequently has achieved first-rate fuel economy among mini cars in Japan. A new The New i-CVT



1 Under this system, any excess amounts from other classes that have already achieved the objective can be applied towards classes which have not achieved the objective

i-CVT has been installed in the new mini car, the Stella, which in comparison to conventional transmissions has an improved fuel economy, a wider transmission gear ratio, a more dynamic performance and enhanced quietness because it has reduced friction between its components.

#### Improved Fuel Economy

#### Received the "e-nenpi" (Good Fuel Economy) Award for Excellent Actual Fuel Economy

Subaru's vehicles, such as the R1, the R2 and the Stella, are topping the list of the "Top 10 Fuel Economy Gasoline Powered Mini Cars in 2006," (announced by the Ministry of Land, Infrastructure and Transportation) with the result that the new Stella with the NA engine exceeds the 2010 Fuel Economy Standards by 10% (AWD) or 20% (2WD). Moreover, both the FF and AT Impreza with the new 1.5L DOHC engine exceed Fuel Economy Standards by 10%.

Subaru is actively working to improve actual fuel economy based on a survey of customers' driving patterns.

The Stella and Stella Custom models were presented with the "e-nenpi (Good Fuel Economy) Award 2006-2007" in honor of the fact that they were ranked first in the new vehicle category for average fuel economy ranking for the year (Jan. thru Dec. 2006) by IRI Commerce and Technology, Inc. which provides the "e-nenpi\*2 (Good fuel economy)" service for managing information on personal vehicles via cellular phones.



Stella Custom R Specia

#### **Cleaning Exhaust Gas**

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 Japanese Ministry of Land, Infrastructure and Transport) that meet standards stricter than the regulations.

#### **Objective:**

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 the end of fiscal 2006

#### **Creating Low Emissions Vehicles** (Over 50% of Vehicles Reached the "☆☆☆☆" Level)

The ratio of Subaru vehicles with emissions reduced by 75% compared to fiscal 2005 standards has been over half (the monthly average) of the sales volume since June of 2006; for example, in fiscal 2006, the Stella, a new mini car with a naturally aspirated (NA) engine, all cars with NA engines excluding the Legacy 2.0L, which underwent a significant number of minor changes, and the Impreza, with a new 1.5L DOHC engine, reached the "☆☆☆☆" level, which is 75% reduction beyond 2005 standards. However, the objective was not achieved, even though the total percentage of vehicles with emissions reduced by 50% or 75% compared to 2005 standards has risen to 67-77% per month (the average is 74%). The total ratio of vehicles whose emissions have been reduced by 50% and 75% compared to 2005 standards is expected to reach 80% in fiscal 2007

Subaru will continue to our proactive efforts to reduce emissions. For example, the third-generation Impreza with the NA engine, which underwent a complete model change in June of 2007, immediately reached the " allows for more precise measurement of emissions performance.





#### Trends in NOx Averages

#### Launching low emission vehicles reduces NOx year after year

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



-The figures calculated from the regulation values (10/15 mode and 11 mode) at the time of ship-

-Going back to fiscal 2000, calculations were made with regulation or conversion values for the nt test mode. The current test mode is a combined mode of the 10/15 mode and 11 mode. -In fiscal 1999, the figures were calculated from the regulation values for the 10/15 mode.

\*2 "e-nenpi" is the average fuel economy for each vehicle type. This average value was determined based on the on-line managed fuel economy, which is derived from the data entered by approximately 400,000 drivers through their cellular phones on the calculated amount of fuel used and the distance traveled.

#### **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 environmental impact than gasoline engine vehicles. However, there are technical problems related to cost and driving distance. Subaru has been developing clean energy vehicles such as electric vehicles that have the gasoline engine vehicle-level performance and utility. Also, we are positively working on developing next generation batteries for hybrid vehicles and fuel cell electric vehicles.

#### **Developing a Next Generation Battery**

#### (Doubling or Tripling Maximum Travel Distance on a Single Charge)

Subaru is developing next generation batteries in order to increase the travel distance of electric vehicles on a single charge by at least two to three times. We are striving to develop these next generation batteries by combining newly developed materials that can absorb and store more lithium ion on the positive electrode than conventional batteries with the production technology of a lithium-ion capacitor, which allows doping of lithium ions on the negative electrode, in order to increase weight-energy density to up to 200 Wh/kg. This energy density is approximately double that of the lithium-ion secondary batteries used in current electric vehicles, and hence increases maximum travel distance on a single charge from 80 km (equivalent to the distance between To-kyo and Odawara) to 160 km (equivalent to the distance between Tokyo and Shizuoka). We will continue our development efforts to further increase energy density in order to succeed in creating electric cars that can run over 300 km.

#### Comparing Maximum Travel Distance among Various Batteries



#### **Development of Lithium-Ion Capacitor**

#### (Developed Earth-Friendly Storage Device with Our Unique Technologies)

Employing our unique technologies and using environmentally friendly materials, Subaru has been developing the Lithium-ion Capacitor. This capacitor is environment friendly and ideal for the next generation clean ECO cars and for the storage of energy from wind, solar power and etc. by replacing lead batteries. We are working towards its practical application and commercialization.

#### Technological Development of Future Power Supplies

#### Developing Energy-Saving Gasoline Engines,

#### through a Joint Effort by Industry, Academia and Government

Developing technologies to create a power supply for the future that is cleaner and saves more energy requires a joint development effort on a national level by industry, academia and government. Subaru, together with Chiba University and Nihon University, has been involved in the Energy Use Rationalizing Technology Strategic Development Project organized by the New Energy and Industrial Technology Development Organization of Japan (NEDO) in its pioneering phase from 2002 to 2005, and has developed a breakthrough technology that improves thermal efficiency by 6 to 11% while avoiding knocking with a compression ratio of 14 to 1. In 2006, Subaru moved into the commercialization study phase aiming to put it to practical use.

In addition, since fiscal 2006, together with the National Traffic Safety and Environment Laboratory and Toyama University, Subaru has been involved in the Program for Promoting Fundamental Transport Technology Research organized by the Japan Railway Construction, Transport and Technology Agency (JRTT), which aims to develop technologies to reduce knocking by means of chemical effects. The Program's goal is to develop a new gasoline-powered engine that is as efficient as a diesel engine yet emits fewer pollutants.

#### Noise

small-sized muffler.

#### Measures to Reduce Noise:

Reducing the Noise of Traffic by Promoting Technological Development Subaru has been proactively working to reduce traffic noise generated by cars. We are studying ways to effectively reduce noise from tires, engines, intake and exhaust, which are the major sources of traffic noise. In fiscal 2006, we reduced noise on the new Stella by taking the measures shown in the illustration. Also, by restructuring the exhaust system to reduce the weight of the vehicle, then optimizing the layout of the muffler, we were able to guarantee the desired noise quality with only a

#### The Main Countermeasures Employed to Reduce the Noise the Stella Generates



# "Clean" Plants: Efforts in the Production Stages

(1) Since fiscal 2003, we have achieved both zero emissions and the target levels for reducing waste materials every year.

POINT

(2) We plan to further reduce CO<sub>2</sub> emissions by installing two cogeneration systems in the Gunma Manufacturing Division's Oizumi Plant.

(3) We achieved all the targets set for "Clean" Plants under the Third Voluntary Plan for the Environment.

#### **Amount of Resources Input and Total Emissions at Plants**

This figure shows the amount of resources used and emissions in fiscal 2006 at Gunma Manufacturing Division, Subaru's main automobile production plant in Japan.



Amount of Resources Input and Emissions

#### **Outline of Waste Materials Generated and Treated**

FHI's all manufacturing plants have achieved zero emissions for waste materials in 2004, and have maintained a level of zero waste materials landfilled ever since 2004.

Outline of Waste Materials Generated and Treated at All Manufacturing Plans and Gunma Manufacturing Division in fiscal 2006



#### **Reducing Waste Materials**

Efforts to Reduce Waste Materials

#### Achieved Target Levels for Reducing Waste Materials Every Year since Fiscal 2003

Since FHI considers that the generation of waste materials itself is a "waste", we have been making a continuous effort to achieve "zero emissions" and to curb the generation of waste materials. We have been striving to effectively utilize resources by improving the yield ratio of raw materials used in the production stages and enhancing coating efficiency at paint factories. The following graph shows the indexes obtained by dividing the ratio of the amount of byproducts (scrap metal and non-ferrous scrap metals such as aluminum) generated by the automotive division by the value of shipped products. Although the amount of by-products slightly increased in fiscal 2006, we have achieved the target levels (of the amount by-products should be reduced, as determined by the Laws for the Promotion of the Effective Utilization of Resources) every year since fiscal 2003



#### Trends of Amount of Bv-products Generated to Amount of Products Manufactured

#### **Reduction of Water Consumption**

#### Efforts to Reduce Water Consumption Total water consumption was reduced by 7% compared with the previous year at all manufacturing plants

Total water consumption was about 3,380,000 m<sup>3</sup> at all our manufacturing plants in fiscal 2006 and this is a reduction of 7% compared with the previous year. The effort of implementing strict measures such as checking for leakage from water pipes and replacing water pipes with aerial pipes at each manufacturing plant have led to reduction of water consumption by about 270,000 m<sup>3</sup> compared with fiscal 2005. We will continue to make every effort to reduce water consumption further at all manufacturing plants.

#### Environmental Improvement Case Study Presentation Presentations of environmental improvement case studies are held twice a year at the Utsunomiya Manufacturing Division. Particularly exceptional case studies that other manufacturing plants can use as references have been introduced to improve the environmental performance of all manufacturing plants



he Environmental Improve ent Case Study Presenta tion at the Utsunomiya Manufacturing Division

#### **Initiatives to Prevent Global Warming**

#### Activities to Save Energy

#### CO<sub>2</sub> Emissions Expected to be Reduced by 14,000 Tons at the Oizumi Plant

In February 2007, two natural gas cogeneration systems were introduced at the Oizumi Plant of the Gunma Manufacturing Division. Since these systems started full operation in fiscal 2007, we expect to reduce CO<sub>2</sub> emissions by approximately 14,000 tons and energy use by the equivalent of approximately 2,700 kL of crude oil per year. In fiscal 2007, an additional natural gas cogeneration system will be introduced at the Yaiima Plant of the Gunma Manufacturing Division. We will continue to carry out actions aimed at reducing CO2 emissions and energy usage even as we further accelerate activities to improve business processes at all manufacturing plants.



Cogeneration start-up ceremony at the Oizumi Plant

#### Reduction of Substitute CFC (HFC134a) Emitted to the Air (Reduced HFC134a by 97% Compared to Fiscal 1996

To reduce atmospheric emissions of HFC134a used as a coolant from the vehicle manufacturing line at Gunma Manufacturing Division, we have continued effort to minimize leakage while pumping and recovering gas in air conditioner. As a result, we have succeeded to reduce emissions by over 95% compared to fiscal 1996 levels since fiscal 2003 and achieved a reduction of 97% in fiscal 2006.

#### **Reduction of Environmental Pollutant**

Management of Chemical Substances (the PRTR Law) Reduced 30 tons of Chemical Substances Subject to the PRTR Law FHI uses 17 chemical substances subject to the PRTR Law. Use of such chemicals at all our manufacturing plants totaled 869 tons in fiscal 2006, achieving a reduction of about 30 tons compared with the previous year. These achievements result from activities such as changing paint gun used in the vehicle body painting process and reducing the amount of thinner for cleansing.

VOCs<sup>-1</sup> Generated in the Painting Process at the Gunma Manufacturing Division

#### Harmful Substances Generated in the Painting Process have been Reduced by Over 60%

In fiscal 2006, we reduced emissions of VOCs per painted surface area of vehicle bodies to 43.8 g/m<sup>2</sup> (in the previous fiscal year we achieved 46.2 g/m<sup>2</sup>), an emissions reduction of 60.8% compared with fiscal 1995 levels. The main contributing factors included reducing the frequency of paint color changes and improving thinner collection rates, both of which have been continuously conducted since the previous fiscal year. We will continue to strive toward further reductions in order to achieve the targets laid out in the Fourth Voluntary Plan for the Environment.

#### Air Pollutants

#### (Reduced both Nitrogen Oxides (NOx) and Sulfur Oxides (SOx)

In fiscal 2006, emissions of both NOx and SOx decreased due to several factors such as the change of boiler fuel from heavy oil to natural gas. FHI established and controls its own voluntary standards, which are even stricter than the relevant legal standards (in principle, 80% of the levels stipulated by the relevant laws and regulations or lower). Periodical measurement results<sup>\*2</sup> in fiscal 2006 show that our voluntary standards are satisfactory at all locations measured.

#### Trends in Amount of NOx and SOx Emitted at All Manufacturing Plants



#### Preventing Soil and Underground Water Pollution Continuously Conducting Underground Water Sampling Surveys

FHI has voluntarily conducted soil and underground water surveys at all manufacturing plants since 1998 and has reported the results to the government. We are continuously conducting sampling surveys of underground water even at manufacturing plants where purifying measures for soil and underground water have already been taken, such as the Utsunomiya Manufacturing Division, and continue to report the results to the government.

#### Water Pollutants

#### (Continuous Activities for Reducing Water Pollutants)

Trends in the amount of nitrogen, phosphorous and BOD discharged into water at all our manufacturing plants are as shown in the graph. In fiscal 2006, one case was reported at the Saitama Manufacturing Division, where the results of periodic measurements<sup>\*2</sup> exceeded the BOD levels set in our voluntary standards. For cases of other substances in violation of limits including our voluntary standards, please see "the The Number of Cases Where Limits Set in Environment-Related Laws Were Exceeded and Details" on p. 32.

#### Trends in Amount of Nitrogen, Phosphorous and BOD Emitted at All Manufacturing Plants





Storing equipments containing PCB accordance with laws and regulations (Utsunomiva Manufacturing Division)

#### Storage of Equipment Containing PCB Applied and Registered for Disposal of Equipment Containing PCB with Professional Company

FHI stores PCB appropriately and notifies the authorities of possession of PCB in accordance with the related laws and regulations every year. Regarding the equipments (such as transformers and condensers) we store that contain a high concentration of PCB, we already applied and registered for their disposal with the Japan Environmental Safety Corporation (JESCO) in March 2006.

\*1 'VOC' stands for 'Volatile Organic Compounds', such as toluene or xylene, which easily become volatile at room temperature.

\*2 Detailed information on the results of these periodic measurements can be found on our website, under the Supplementary Volume for Data related to the 2007 S & E Report.

# Logistics, Sales and Service Activities

(1) Subaru Logistics Co., Ltd. is conducting activities to expand the joint transportation of completed vehicles and to improve the efficiency of container transportation.



(2) We have been conducting the Customer Service Quality Improvement Project at Subaru dealers' new vehicle sales outlets across Japan since 2005.

(3) We will continue collecting reassembled and used parts, including bumpers, by cooperating with domestic Subaru dealers.

#### The Logistics Stage

Logistics Efforts (1) by Subaru Logistics Co., Ltd.

# Improving Transportation Efficiency by Increasing the Total Number of Vehicles Carried by Joint Transportation

Subaru Logistics has contributed to reducing generation of environmentally hazardous substances caused during the transportation of new cars, by improving transportation efficiency through such means as setting optimum standard transportation routes, promoting modal shifts and improving carrying efficiency. In fiscal 2006, by promoting the joint transportation of completed vehicles with other companies in the same industry, the company increased the total number of completed vehicles carried (total number of vehicles consigned to other companies and to our company) to 41,660, an increase of approximately 17% over the previous fiscal year.

In fiscal 2006, in order to comply with the Revised Energy-Saving Law, the company encouraged its affiliated transportation companies to install digital tachographs and

#### Logistics Efforts (2) by Subaru Logistics Co., Ltd.

## Reducing the Environmental Impact of Transportation of Marine Freight Containers

The environmental impact of transporting marine freight containers can be reduced by increasing the rate containers are fully loaded each round trip and by reducing the total number of trips. Companies handling international marine cargo are roughly divided into those focused more on exports and those focused more on imports. Because the volume of cargo each company handles is skewed one way or the other, towards exports or towards imports, many containers will be empty during transportation to or from the devices that stop engines while idling in their vehicle-carrying trucks, and consequently obtained highly precise energy consumption figures (including CO<sub>2</sub> emissions figures) by systematically collecting mileage and fuel consumption data from partner companies, using that data to reduce energy consumption per sales by over 1% for the year.





loading/unloading point and the export/import port, leading to waste and inefficiency. Since it is impossible for a single company to solve this complex problem through its own efforts, we have involved not only partner companies but also shipping companies to work to reduce CO<sub>2</sub> emissions by engaging in joint transportation between companies with more exports (Our Company) and companies with more imports so that containers are always fully loaded in both directions. In fiscal 2007, we expect to reduce the number of trips by approximately 4% compared to the previous fiscal year, and intend to further expand our joint transportation scheme.



#### Diagram of Logistics Operations Conducted through Joint Transportation of Marine Freight Containers between

#### Sales and Service Activities Stage

#### Environmental Activities of Subaru Dealers

#### (Ongoing "Subaru Eco Action 21" Activities

In order to achieve "clean" dealers, Subaru has been working on a program of environmental conservation activities, called "Subaru Eco Action 21," together with Subaru dealers across Japan, which are in face-to-face communication with customers and local residents.

In December 2003, we started "thorough inspections on environmental compliance" at model sales outlets (shops and service workshops), and have promoted both inspection and environmental improvement activities at all dealer's outlets as Subaru dealers' voluntary activities since 2005. At the end of March 2006, we verified the current situation at all sales outlets and continued to take countermeasures at sales outlets in need of improvement into fiscal 2006.

From fiscal 2005 to the first half of 2006, we dispatched our staff to all new vehicle sales outlets at Subaru dealers under the Customer Service Quality Improvement Project, and worked to further enhance sales and services by verifying that waste materials were being separated and confirming storage conditions at shops and service workshops, in order to improve customer satisfaction.

In terms of establishing Environmental Management Systems at domestic Subaru dealers, after Niigata Subaru Co., Ltd. obtained ISO14001 certification in 2005, subsequently added its Shibata outlet in June of 2006, then Subaru Kumamoto Corporation newly obtained the certification in November of 2006. As a result, six Subaru dealers in total have obtained ISO14001 certification: Chiba Subaru, Inc., Aomori Subaru Co., Ltd., Fuji Subaru Co., Ltd., Osaka Subaru Co., Ltd., Niigata Subaru Co., Ltd. and Subaru Kumamoto Corporation.

#### Using Reassembled and Used Parts

#### Collect Reassembled and Used Parts with Subaru Dealers

Subaru and Subaru dealers across Japan are using recycled (that is, reassembled) and used parts. Using reassembled parts such as engines, transmissions and water pumps, was started in collaboration with the related manufacturers in fiscal 2004.

Using used parts such as exterior panels, lamps and wheels, was started in collaboration with existing used parts network groups.

#### Items that Utilize Reassembled Parts

Designated items

Engine, Transmissions, CVT (Continuously Variable Transmission), Alternator, Starter, ECU (Engine Control Unit), Water Pump and etc.

#### Collection of the Scrapped Bumpers

#### Recycle Scrapped Bumpers for Use in Other Parts

Subaru 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 2006, we collected 44,242 scrapped bumpers from all over Japan, which is 99.7% toward the previous year (44,373). The scrapped bumpers were recycled for use in other parts of Subaru as shown in the graph below.

#### Parts Produced from Scrapped Bumpers

Models	Parts
R1, R2, Pleo	Universal joint cover, Underfloor cover
Legacy	Under spoiler, Battery pan

#### Trends in Number of the Scrapped Bumpers Collected





Outoback 2.5i S-style LIMITED

# Effectively Utilizing Limited Resources by Improving Recyclability

(1) We are developing and producing easily recyclable vehicles based on the actual disposal conditions for end-of-life vehicles.

(2) In 2006 we achieved an ASR\*<sup>3</sup> recycling rate of 75%, the highest among automakers that year.

(3) Starting in April of 2007, ahead of schedule, we have prohibited the use of hexavalent chromium in all vehicles currently being produced.

#### **Recycling Activities**

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Subaru has established the Automotive Recycle System of Subaru (ARSS\*<sup>2</sup>) as part of active efforts to recycle and properly dispose of end-of-life vehicles (ELVs\*<sup>1</sup>), according to the Japanese End-of-Life Vehicles Recycling Law (hereinafter referred to as the ELVs Recycling Law) which came into force on January 1, 2005. The recycling ratio of ASR\*<sup>3</sup> in fiscal 2006 was 75.0%, marking a top position among automobile manufacturers and satisfying the Japanese legal standard required for fiscal 2015 (The recycling ratio of ASR: 70% or higher). We will continue efforts to keep the recyclability of Subaru automobiles at a constantly high level, as well as aim at further efficiency improvements and low-cost recycling in order to minimize the recycling fee paid by our customers.

#### Efforts in the Design Stage

Emphasis on Design Allowing Easy Recycling (Design Considering Recycling for Efficient Use of Resources)

#### (1) Recycling Market Research

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

#### (2) Efforts to Improve Recyclability

#### [Advances in Wire Harness Dismantling]

Because a large amount of copper is used in a wire harness, if the wire harnesses can be removed before the ELVs are shredded, the collection and separation of iron and copper will be en-



hanced and their value in terms of resource recycling will increase. Subaru is conducting studies for a harness layout and automobile structure that make it possible to effectively collect more iron and copper and in a shorter time.

#### [Easier Material Identification]

It is most important that the material of each part can be recognized easily when we recycle. Subaru started to identify the type of material on plastic parts in 1973 even before guidelines for the industry were established. Material identifications had been attached on the rear side of each part before. However, the position was changed, as we believed we could avoid such wasteful actions as dismantling a part to confirm the material type. Subaru has changed the identification positions on all car models, including the Legacy, the Impreza and the Stella since 2001.



#### [Using Materials that are Easy to Recycle]

We are using olefin resin, which is extremely easy to recycle, as the resin material for the interiors and exteriors of most new and remodeled vehicles. In particular, we are using integrated materials dedicated for use with bumpers for bumpers and integrated materials dedicated for use with interiors for interior parts.

#### Using Integrated Materials for Interior Parts: Olefin Resin in the Stella



Advances in wire harness dismantling

\*1 ELV: End of Life Vehicles

- \*2 ARSS: Automotive Recycle System of SUBARU
- \*3 ASR: Automobile Shredder Residue: Residue after scrapped metals for recycling removed from shredded car body

#### (3) Efforts to Improve Proper Disposal

ELVs Recycling Law also regulates the proper disposal of substances with environmental impact, particularly fluorocarbons (refrigerants for air conditioners) and airbags. Concerning future vehicle development, Subaru recognizes the essential need to produce vehicles that can be disposed of more easily.

#### [Reduction of Fluorocarbons Used in Air Conditioners]

Subaru uses a substitute fluorocarbon, HFC134a, for refrigerants in air conditioners, which does no harm to the ozone layer, but which is still believed to accelerate global warming. We are conducting active countermeasures to reduce the amount of HFC134a and also research into substitute refrigerants other than fluorocarbons.

#### [Advances in Airbag Disposal]

Airbags and pretensioner belts contribute significantly to reducing the shock to drivers and passengers in automobile accidents. On the other hand, the vast majority of automobiles are put out of service with unused airbags. Because automobile manufacturers are asked to dispose of airbags and similar products under the ELVs Recycling Law, we are conducting research into the optimal structure for airbags, including related components, that will make it safer and easier to activate them in automobiles and subsequently dispose of them.

#### Reducing Environmentally Hazardous Substances

#### Achieved the Target for Reducing Use of Hexavalent Chromium Earlier than Planned

We have been working to reduce the amounts of four environmentally hazardous substances (lead, mercury, cadmium and hexavalent chromium) under the voluntary action program of the Japan Automobile Manufacturers Association (JAMA). We achieved the targets for lead, mercury and cadmium, and then in April 2007, earlier than planned, we managed to prohibit the use of hexavalent chromium in all newly produced vehicles. Moreover, we adopted lead-free soldering methods for several parts including airbag sensors, antennas, speakers and navigation systems, and are currently working to gradually expand the rate these methods are used with other parts.

#### Reduction Targets and JAMA's Voluntary Action Program for New Models

Substance	Target (period achieved)	Details of Reduction Efforts:
Lead	Since Jan. of 2006	Reduce the amount per vehicle pro- duced to less than 1/10 the 1996 levels
Mercury	Since Jan. of 2005	Use prohibited except in a few appli- cations (e.g., minute amounts in dis- charge headlights and in the liquid crystal panels of GPS systems)
Hexavalent chromium	Starting in Jan. of 2008	Use prohibited
Cadmium	Since Jan. of 2007	Use prohibited

#### Reducing VOCs in Vehicle Interiors

# Achieved the Target for Reducing the Use of Harmful Volatile Organic Compounds

In order to reduce the use of VOCs<sup>+4</sup> such as formaldehyde and toluene, which can cause nose and throat irritation, we are revising whether to make changes to the components and adhesive agents used in vehicle interiors. In the Stella, we achieved the goals set by JAMA<sup>+5</sup> ahead of schedule by reducing the concentration of the 13 substances defined by the Ministry of Health and Welfare in Japan to levels below the figures set in the guidelines for interior concentration. In the future, we will continue our efforts to reduce the levels of such substances to below the figures set in the guidelines in all new vehicles slated for release.

#### **Sales and Service Activities**

#### Recycling Waste Materials (Paint Sludge)

#### Establish Recycling Technology to Reduce Waste Materials (Paint Sludge) into Recyclable Materials

We found a way to recycle paint sludge from the paint factory. We are recycling paint sludge as anti-vibration materials for vehicle floor panels and as blast furnace reducer. We are also considering recycling it for other uses.

#### Amount of Paint Sludge Recycled



#### Utilizing Other Industrial Wastes

#### (Actively Utilize Recycled Materials Generated by other than Automobiles)

Subaru will actively utilize recycled materials generated by industries other than the automobile industry.



\*4 VOC stands for Volatile Organic Compounds, such as formaldehyde and toluene, which easily become volatile at room temperature. Such substances are thought to be the cause of sick building syndrome.

<sup>\*5</sup> Voluntary target: to reduce interior concentration of the 13 substances identified by the Ministry of Health, Labour and Welfare to levels equivalent to or lower than the figures stipulated in the guidelines for new vehicle models (produced and sold in Japan in 2007 and afterward) under the Voluntary Approach in Reducing Cabin VOC Concentration Levels initiated by JAMA.

# Domestic & Overseas

## Activities of Affiliated Companies-Both Domestic and Overseas Companies

(1) The six companies in the Domestic Affiliated Company Subcommittee reduced both CO<sub>2</sub> emissions and the volume of landfilled waste.



(2) Yusoki Kyogo K.K. and the Utsunomiya Manufacturing Division integrated their efforts and started joint Environmental Management System activities.

(3) Subaru Canada Inc. (SCI) reduced CO<sub>2</sub> emissions from its dedicated delivery trucks.

#### Activities of Domestic Japanese Affiliated Companies

We would like to introduce the activities of our six affiliated manufacturing companies in Japan: Fuji Robin Industries Ltd., Yusoki Kyogo K.K., Fuji Machinery Co., Ltd., Ichitan Co., Ltd., Kiryu Industrial Co., Ltd., and Subaru Logistics Co., Ltd. Details of these companies' activities are shown here on this page as well as on our website, in the Supplementary Volume for Data related to the 2007 Social & Environmental Report.

#### Environmental Impact

#### (Reducing Both CO<sub>2</sub> Emissions and Landfilled Waste

These six companies have reduced their  $CO_2$  emissions to 26,950 tons, a 4.3% reduction compared to fiscal 2005 levels, and have cut landfilled waste 30 tons, a 49% reduction compared to fiscal 2005.

#### **Reducing CO<sub>2</sub> Emissions**



#### Trends in Amount of Directly Landfilled Waste



Ichitan significantly reduced the amount of landfilled waste (by approximately 19 tons) by boosting separation of waste materials and increasing use of recyclable materials. All six companies have been conducting thorough energy-saving activities and have reduced their CO<sub>2</sub> emissions compared to fiscal 2005. For more information about the energy-saving logistics activities conducted by Subaru Logistics, please refer to p. 43.

Cases in which Environmental-Related Laws were Violated, Environmental Incidents and Complaints

Taking Immediate Measures to Respond to Cases in which Environmental-Related Laws were Violated, Environmental Incidents and Complaints

Regarding cases in which environmental-related laws were violated, two noise-related cases occurred at Ichitan. In both cases, the company made improvements by ensuring that the doors of buildings in which the noise was being generated were kept closed and replaced equipment responsible for causing the noise.

Regarding environment-related accidents, one oil leak occurred in the sewage discharge on the premises of Yusoki Kogyo. The company immediately took countermeasures and revised work procedures in order to prevent any recurrences.

Ichitan received one complaint about air pollution. The company took countermeasures by replacing the filters of equipment that generates dust, and revised its work procedures to clarify the period within which filters should be replaced so as to prevent any recurrences

#### Returning ISO14001 Certification

#### Commencing Integrated Environmental Management System Activities

On August 25, 2006, Yusoki Kogyo returned its ISO14001 certification to the certification organization (TÜV Rheinland Japan). The company returned the certification in order to be able to become a member participating in the Environmental Management System activities conducted by FHI's Utsunomiya Manufacturing Division. Since October 2006, the company has been preparing for ISO14001 recertification in July 2007 as part of the investigation that will be conducted for the Utsunomiya Manufacturing Division to update its ISO14001 certification.

#### Social Contribution Activities

All Companies Conducted Their Own Individual Social Contribution Activities



In December 2005, Subard Logistics, in cooperation with other affiliated companies, made a charity donation of approximately 470,000 yen for children of traffic victims. The photo shows Mr. Nakahara, the then-current president of Subaru Logistics, handing the donation to Mr. Shimizu, mayor of Ota City (left).





Kiryu Industrial Co., Ltd. conducts annua cleaning activities in the areas surrounding its plant and on school routes. (June)

Subaru Logistics Co., Ltd. cleans the area surrounding its plant once a week.

#### **Activities of Overseas Affiliated Companies**

We would like to introduce the activities of five companies, the members of North American Environment Committee\*1 (SIA, SOA, RMI, SCI, and SRD)\*2.

For the activities of SIA, please refer to the featured article on pp. 15-16.

#### Environmental Impact of the five companies (amount of CO<sub>2</sub> emission and landfilled waste)\*3





Trends in Amount of Landfilled Waste at the Five Companies



#### Efforts for Global Warming Prevention (Reduced CO<sub>2</sub> Emission by Delivering with Dedicated Trucks

SCI, the dealer of Subaru in Canada, has started DDS (Dedicated Delivery Service) program. The program has a dedicated Subaru



truck, which leaves the SCI warehouse and delivers their shipments directly to the dealers during the night. The direct and overnight delivery by-passing rush hour traffic and traffic congestion has reduced CO2 emissions.

Also, the program has reduced packaging by using their own shipping bins for DDS repeatedly.

Subaru Dedicated Delivery Service Parts Truck

#### Efforts for Waste Reduction (Reduced Recycling by Reusing Design Model

SRD, the development site of Subaru's vehicles in North America, has worked on reusing form design model vehicles built for research clinics and succeeded in reduction of 1200kg recycling by reusing 100% of metal and wood and 35% of plastic foam. Recycling of disposal plastic foam was 85%. These reusing activities reduce the use of new plastic foam to 65%.

RMI, the production site of Robin Engines in North America, has been replacing shipping boxes for knockdown parts to returnable pallets. They have currently replaced 65% of boxes and will promote to complete replacing in the future.



m design model vehicle

that SRD reuses



#### **Develop Social Contribution Activities at Each Region**

SOA, Subaru dealer of the US, is a long-time sponsor of arts in the community. They have awarded a grant to the Perkins Center for the Arts in Collingswood, New Jersey so that the facility can transform into an environmentally sensitive "green" building. The plans include the building with solar panels, recycling rainwater and maximizing the benefits of natural light.



Perkins Center for the Arts supported by SOA



Ranger Utility with RMI's financial support

RMI has negotiated a special purchase price with Polaris and helped the town of Spring Valley, Wisconsin (home to several of their employees), to obtain a Polaris Ranger Utility Vehicle modified for emergency response work.

#### The Results of the Environmental Accounting in Fiscal 2006

Please refer to the pp. 12-13 in the Supplementary Volume for Data related to the 2007 Social and the Environmental Report on our Web site for the results of Environmental Accounting for domestic and overseas affiliated companies.

\*3 For fiscal 2002, the following companies do not include the actual achievement into the graph because they did not have the data.

<sup>\*1</sup> SIA=Subaru of Indiana Automotive, Inc.; SOA=Subaru of America, Inc.; RMI=Robin Manufacturing U.S.A., Inc.; SCI=Subaru Canada, Inc.; SRD=Subaru Research & Development, Inc. \*2 For the details of the activities of NAEC member companies, please refer to the Web site at http://www.subaru-earth.com/staging/ (English only)

<sup>[</sup>CO2 emission: SOA, SCI] [Landfilled waste: SOA, SCI, RMI]

# Office

# **Company Office Activities**

(1) Head office reduced both electric power consumption and waste paper by working under ISO14001.

(2) Head office is providing environmental education and information regarding volunteer activities through its intranet.

(3) The Tokyo Office regularly conducts emergency drills to prepare for environment-related accidents.

#### Head Office (Shinjuku Business Site and Omiya Business Site)

#### (Reduction in Electric Power Consumption and Waste Paper

The head office developed "Eco Office Activities" according to ISO14001. As a result, in fiscal 2006, reductions of 88,000 kWh of electric power (8.3% less than fiscal 2005 levels) and 6 tons of waste paper (16.3% less than fiscal 2005 levels) were achieved.

Furthermore, we have conducted environmental education and have provided environmental information through our intranet to all employees at the head office. In this fiscal year, in order to improve environmental awareness, environmental education was conducted with all employees including the president. In July, the Environment Improvement Case Study Presentation was held in order to share some of the best examples of improved performance among employees.

#### Trends in Electric Power Consumption and Waste Paper Generation at Head Office





Environment Improvement Case Study Presentations

#### (Introduction of Volunteer-Related Information on Our Intranet)

Through our active involvement in volunteer activities, a "volunteer information" page was developed on our intranet system to introduce volunteer activities that employees can easily participate in.



Head Office (Shinjuku Business Site and Omiya Business Site) Location: (Shinjuku Business Site) Subaru Building, Shinjuku-ku, Tokyo (Omiya Business Site) Omiya Subaru Building, Kita-ku, Saitama City, Saitama Prefecture Business profile: Planning, marketing and sale of Subaru products, and corporate operations

#### **Tokyo Office Activities**

#### Environmental Policy to Provide"Clean"Power Units

The FHI Tokyo Office pushes ahead with its conservation activities with an environmental policy determined to create environmentally friendly automobiles and develop greener power units to ensure preservation of our rich natural environment for generations to come.

In fiscal 2003, we achieved landfilled waste "zero emissions" and have continuously worked to maintain "zero emissions."

Because chemical agents and greases are handled at our engine and transmission testing facilities, emergency drills are regularly conducted and procedure checked.

Also since fiscal 2004, as one of our contributions to local communities, we have conducted office tours for elementary school children. In fiscal 2006, five elementary schools (410 fifth-grade students) from the local communities visited our office.





Practice drills to prepare for potential environmental accidents

Contributing to local communities, elementary school students are taken for tours around the Tokyo office.

#### Tokyo Office

Location: Mitaka City, Tokyo, Business profile: Research and Development, Experiment of automotive engine and transmission, Research and Development of Subaru products



POINT

#### Third Party Evaluation



So-Tech Consulting Inc. Mizue Unno

#### 1. Evaluation Methods and Parameters

In conducting our evaluation and to clarify our assessment, we inspected the Gunma Manufacturing Division, one of FHI's major plants, interviewed executive officers in charge of CSR, and reviewed the Social & Environmental Report

#### 2. Assessment

#### (1) Overall Composition

In its featured articles, the report describes characteristic ways in which FHI uses advanced technologies to incorporate environmental and safety factors into the underlying make-up of its "unique and high quality products". We believe that as an automaker, the company can bring about further distinctive CSR initiatives by pro-actively linking its core business to CSR policy as well as product development.

The company's CSR range seems to be limited to domestic sites, but it is imperative that the initiatives should be extended to the entire group. In particular, the company needs to address ways to involve overseas production and sales sites. Regarding performance management, the company should, for instance, utilize KPI, by reviewing and collecting KPI from all its sites worldwide to develop and advance CSR activities.

Regarding the contents of the report, we are in full agreement that the company should continue to report on its efforts in the area of eco technologies such as wind turbine systems, which are held in such high regard by the stakeholders.

#### (2) Social Report

Since the company has already set the Corporate Code of Conduct and has established internal control systems, it is only necessary that the company continue its efforts to foster employee's social awareness. Such action should be conducted not only for FHI but for the entire group as well.

Relating to the section concerning customers, the company should indicate the direction it is going by clarifying problems with previous ap-

proaches and ways to improve on them. We would like to see how much reaffirming "customers come first" means to FHI business

In general this report focuses on "what the company is doing presently," but we hope that in the future the company will set up policy that tests the main points of necessary action, report on all the processes from target setting to results evaluation and then examine this cycle of procedure.

#### (3) Environmental Report

As the company has already been fully involved in this area, the report shows clearly how far the establishment of EMS, its target setting and PDCA have come. We evaluated the company highly for establishing its own environmental performance evaluation system to measure achievements over the past years. The problem is that this management, including its voluntary plans, is limited to Japan. Global scale environmental issues need to be better understood through global checks and reviews

The product development section is where FHI can fully exhibit its strengths. However because explanations of each individual technology are overly technical, the report ends up not being very easy to understand. This section should be simplified by devising a way in which it can combine with the section on technology development which is introduced in the featured article at the beginning of the report, to outline how it is going about to achieve its three most important issues of fuel economy, reduced gas emissions and clean energy vehicles.

#### Mizue Unno

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in 1985. Unno established So-Tech Consulting, Inc. in 1996 after working for a management consult-ing firm. Taking a global management standpoint, she offers management advice that sup-ports practical business, to Japanese businesses in the Environment and CSR field with an analytical style of her ow She is also an outside director at Brother Industries, Ltd. and a lecturer in the graduate

schools of the University of Tokyo and Hosei University. Publications include "Global CSR Procurement" (provisional translation from the original Japa-nese) (2006, in collaboration with another author) and "SRI and New Corporation/Finance" (provisional translation from the original Japanese) (2006, in collaboration with other authors). http://www.sotech.co.jp

#### Thoughts on Our Third Party Evaluation

Last year, we arranged for a third party evaluation to confirm the report's adequacy and accuracy.

This year, we decided to ask that the third party evaluation make a more objective assessment of our activities and as a result we received much more worthwhile advice. Diligently taking these opinions on board, we will continue to improve on all our activities

#### (1) Overall Composition

Based on opinions from readers of the 2006 Environmental & Social Report, this report had adhered to an editorial policy, "to be easy to read and easy to understand, and to add more to the social report." We will endeavour to make subsequent reports that present Subaru in even easier to understand ways.

Regarding CSR and environmental activities, we will gradually work at improving the report by incorporating sections on organizational development and tackling how to "strengthen the totality of group activities and global activities". (2) Social Report

CSR activities have recently entered the first phase of a new medium-term management plan, and will continue to incorporate the CSR activities with better education and closer relationships between each division, while setting the most urgent goals in the most concrete terms, and by pressing ahead with the PDCA cycle, we are aiming to respond sufficiently to both the group and the global environment's needs.

#### (3) Environmental Report

We intend to further advance the environmental voluntary plan by simply adding to the improvements made so far within environmental activities, by strengthening the products presented by environmental performance activities, and strengthening the environmental and global activities involved in the service divisions.

~Editors and Issuance Editors Tatsuya Suzuki, Takao Sekigawa, Kazuyuki Kurita CSR and Environmental Affairs Promotion Office, General Administration Department, Fuji Heavy Industries Ltd. Contact (Domestic) Phone: 03-3347-2036 Fax: 03-3347-2381 (International) Phone: +81-3-3347-2036 Fax: +81-3-3347-2381 Assistance and Printing FELLOW ROOM CO., Ltd. / KYUEISHA Co., LTD.

# Please Give Us Your Opinions and Ideas

Thank you for reading Fuji Heavy Industries Year 2007 Social and Environmental Report. This report explains the measures for social actions and environmental conservation implemented in fiscal 2006 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 or mail it to us at the number and address shown. Thank you for your cooperation

#### Reports on the results of the questionnaire for our Year 2006 Environmental and Social Report

Our sincere thanks to the many individuals that completed last year's questionnaire (published in August 2006). These are the results.

#### 1. About the 2006 Environmental and Social Report

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

Definitely (44%)	Very Much (41%)	Fair (15%)

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



#### 2. Topics about which you would like more detailed information

•Articles should be more carefully selected for general readers.

- ·I found the featured articles to be very interesting and would like to see these articles continued.
- •The report on social activities should be more comprehensive (rather than simply enumerating the contents, it should include more specific information aligned to the PDCA.
- ·I would like to see more detail about the problems employees face, especially concerning equal opportunities for female employees and how human resource training is carried out.
- •Font size in the Third Party Verification is too small. Furthermore, to raise the credibility of the report, more concrete opinions need to be published.
- ·I would also like to read about unachieved targets and matters that present permanent problems.
- •I would like to read an article about regulation attitudes and related matters found in the various locations worldwide.
- •Fuel related articles should be more comprehensive.
- •How about incorporating a map of the website at the end of the report to link all the information carried in both the printed and digital reports?
- ·I would like to see plans and announcements for future fiscal years that relate to the trends shown in the report.
- ·I would like to see an outline of the financial statement in a supplementary data volume. Also, I would like to know about estimated economic effects, 0costs of damage caused by environmental impact and other such matters.

#### 3. Opinions about this report and FHI's environmental activities based on this report

The design of the printed report is fine but it is too thick. There are some misprints. Font size and photos are too small. •As third party authentication is used to verify the content of the report, it is better than those of other companies that use certification organizations and reviewers.

- ·I think that the social action programs are weak.
- ·I would like the company to use education to promote the relationship between itself and society further.
- •As a basic principle, I would like the company to undertake activities which lead to minimal use of fossil fuels.
- •VOCs should be reduced not only at the production stage, but also in as much as possible in the products themselves.
- ·Commercialization of electric vehicles without further delay.
- •It is possible to imagine there would be some new areas of logistics created by modal shift. ·I would like the company to put more effort into risk management.

We have reflected the readers' valued opinions as much as possible in this report.

We again solicit your opinions and guidance in order to promote improvement of our Social and Environmental Report continuously.

## 2007 Social and Environmental Report QUESTIONNAIRE FORM

Please fax or mail the form to the number or address below after filling it in. We will report the result of this questionnaire in the next our Year 2008 Social and Environmental Report.

#### Q1. How did you learn about the 2007 Social and Environmental Report?(Mark one that applies)

(1)Newspaper article (2)Magazine article (3)FHI Web site (4)Other Web site (5)FHI employee (6)FHI business partner or supplier (7)Subaru dealers (8)Friend, or acquaintance (9)Other (please specify;

#### Q2. Were the contents of this report sufficient and appropriate for an environmental report?(Mark one that applies)

(1)Definitely (2)Very much (3)Fair (4)Not very much (5)Not at all Please state your reasons. Reasons:

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

[Social aspect](Mark one that applies)

(1) Definitely sufficient (2) Sufficient (3) Acceptable (4) Not sufficient (5) Definitely not sufficient

#### [Environmental aspect](Mark one that applies)

(1) Definitely sufficient (2) Sufficient (3) Acceptable (4) Not sufficient (5) Definitely not sufficient Please state your reasons. Reasons:

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

(1) Corporate Overview (Messages from the CEOs, Business Overview) (2) SUBARU Originality
(3) Featured Articles (SI-DRIVE & SI-Cruise, Composite Structure Technologies, Service Robots, Activities of SIA)
(4) Corporate Philosophy / CSR / Corporate Governance (5) Compliance (6) For Customers (7) with Employee
(8) Social Contribution (9) Environmental Management (10) Voluntary Plan for the Environment
(11) Development Stage and Products (12) Production Stages (13) Logistics, Sales and Service Activities
(14) Recycling Activities (15) Affiliated Companies (Domestic / Overseas) (16) Company Office Activities
(17) Third Party Evaluation (18) Other (

#### 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?(Mark one that applies)

(1) Customer (2) Resident of an area neighboring and FHI installation (3) Engaged in government administration (4) FHI shareholder
(5) News media-related (6) Related to an environmental NGO or NPO (7) Finance- or investment-related (8) Business partner/supplier
(9) Employee or family member of employee (10) Other (please specify; )

Male/Female

#### Q8. Could you tell us your gender and age?

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

Occupation

Address

Telephone

years old

#### In case we might contact you to know your opinion in more detail, do you accept it?

(1) Yes (2) No

The use of personal information: Your personal information will not be used for other purposes other than improving the contents of the Social and Environmental Report. Furthermore, we will not disclose that information to any third party without due cause.

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