# Honda Environmental Annual Report 2002

2002

This report has been compiled forcusing on the environmental conservation activities Honda undertook in Japan in the fiscal 2001.

# Corporate Profile & Financial Data

## Company name
Honda Motor Co., Ltd.

## Head office
1-1, 2-chome Minami-Aoyama, Minato-ku, Tokyo

## Established
September 24, 1948

## Representative
Hiroyuki Yoshino
President and Chief Executive Officer

## Capital
¥86,067 million (as of the end of March 2002)

## Sales (Results of fiscal 2001)
Consolidated: ¥7,362,438 million
Unconsolidated: ¥3,211,186 million

## Total number of employees
Consolidated: 120,600 persons
(as of the end of March 2002)
Unconsolidated: 28,500 persons
(as of the end of March 2002)

## Major products
**<Automobiles>**
Ordinary vehicles, small-sized vehicles and mini cars

**<Motorcycles>**
Small-sized motorcycles, mini motorcycles and motorbikes

**<Power products>**
Agricultural instruments, tractors, generators, multipurpose engines, mowing machines, hedge trimmers, transporters, snow removing machines, outboard engines, pumps, etc.

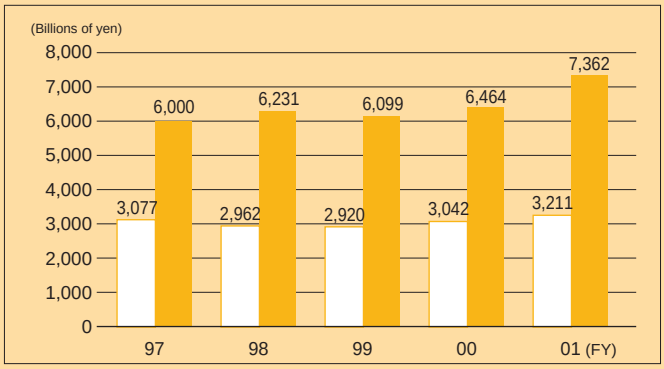
**<Consolidated subsidiaries>**
300 subsidiaries (as of the end of March 2002)

### Major change made to Honda's organizational structure during the report period
Honda Motorcycle Japan Co., Ltd. was established to comprehensively supervise the sale of Honda motorcycles within Japan and the company started operations on August 1, 2001.

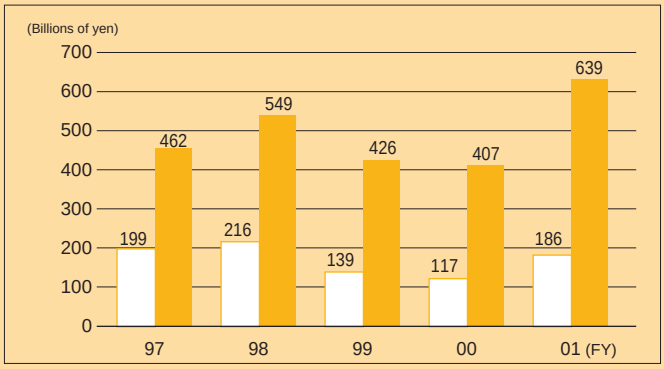
**Honda's World Wide Web site**
**world.honda.com/**

**Corporate profile**
**world.honda.com/profile/**

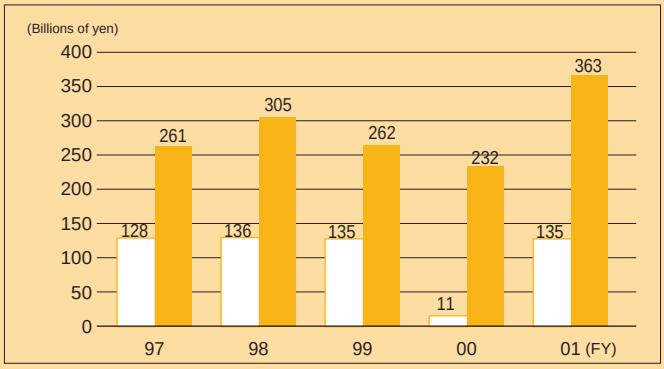
◆ Net sales and other operating revenue



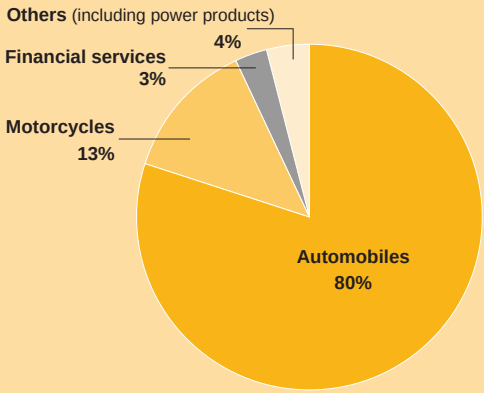

◆ Operating income



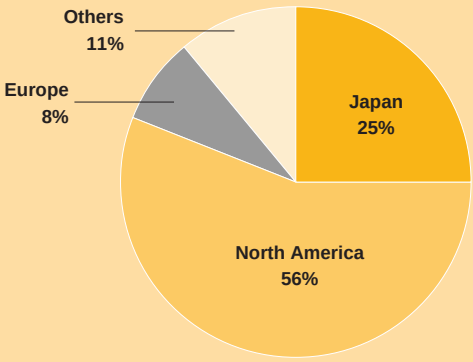

◆ Net income




◆ Sales by segment (consolidated: fiscal 2001) * Including inter-segment sales



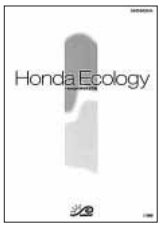

◆ Net sales and other operating revenue by region (consolidated: fiscal 2001)



# Honda Environmental Information Disclosure

Honda publishes two types of brochures as its primary media for environmental information disclosure. These are the Honda Environmental Annual Report and Honda Ecology, both of which have been made available to the general public on the Internet.

■ Roles of each brochure

| Name | Role | Frequency |
|---|---|---|
| **Honda Environmental Annual Report**  | **Introduces the latest activities and the specific results obtained during the previous year.** | **Annually** |
| **Honda Ecology**   | **Describes in detail all of Honda's environmental activities, including Honda's basic stance concerning the environment, the environmental conservation activities advanced by each department, and future directions.** | **Every three years** |

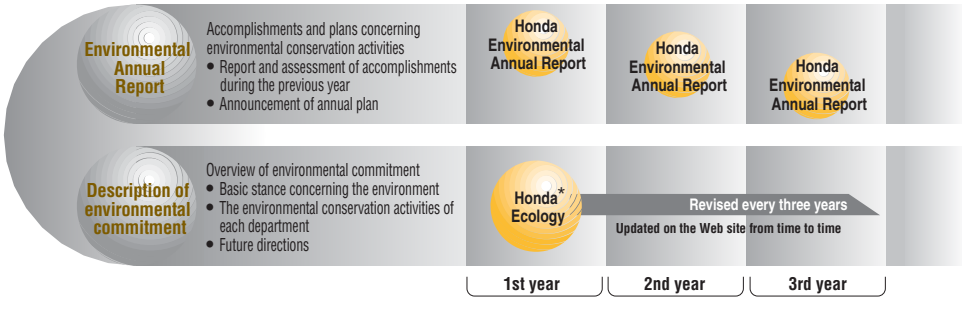
We are using two different brochures to convey and disclose environmental information in order to reinforce and strengthen our two key concepts:

- It is vital that we convey accurate information on the progress made in our environmental commitment during the previous year by clearly distinguishing between "Annual Results" and "Past Results and Future Efforts."
  - We see the Honda Environmental Annual Report as an integral part of Honda's PDCA (Plan, Do, Check, and Action) Process, relating to our environmental commitment made over the entire report year.
- It is important to convey a full picture of our environmental commitment, past, present and future, so that the general public are able to assess our results for the year for themselves. This furnishes them with the essential information by which we are judged.

We trust that the public will understand this and make the best use of the Honda Environmental Annual Report and Honda Ecology to make an informed assessment.

The Honda Environmental Annual Report is issued in the summer every year and Honda Ecology is revised every three years.

**Honda's disclosure of environment-related information**




* The revised edition of Honda Ecology will be published this autumn.

# Segments Covered by the Report

1. Region covered

The Report covers Japan and includes some areas outside of Japan.

2. Organization covered

The Report covers Honda Motor Co., Ltd., Honda R&D Co., Ltd., Honda Motorcycle Japan Co., Ltd., Honda Engineering Co., Ltd. as well as the following production companies and subsidiaries outside of Japan.

● Overseas (production companies and local subsidiaries)

・North America

Honda of America Mfg., Inc. (U.S.)
Honda Transmission Mfg., of America Inc. (U.S.)
Honda Power Equipment Mfg., Inc. (U.S.)
Honda of South Carolina Mfg. (U.S.)
Honda Mfg., of Alabama L.L.C. (U.S.)
Honda of Canada Mfg. (Canada)
Honda de Mexico S.A. de C.V. (Mexico)

・South America

Moto Honda da Amazonia LTDA. (Brazil)

・Europe

Honda of the U.K. Mfg., Ltd. (U.K.)
Honda Europe N.V. (Belgium)
Honda Belgium N.V. (Belgium)
Honda Italia Industriale S.P.A. (ATESSA)(Italy)
CIAP S.P.A. (Italy)
Montesa Honda S.A. (Spain)
Anadolu Honda Otomobilcilik A.S. (Turkey)
Honda Europe Power Equipment S.A. (France)

・Asia and Pacific

Honda Automobile (Thailand) Co., Ltd. (Thailand)
Thai Honda Mfg. Co., Ltd. (Thailand)
Asian Autoparts Co., Ltd. (Thailand)
Honda Cars Philippines Inc. (Philippines)
Honda Philippines Inc. (Philippines)
Honda Siel Cars India Ltd. (India)
Hero Honda Motors Ltd. (India)
Honda Siel Power Products Ltd. (India)
P.T. Honda Prospect Motor (Indonesia)
P.T. Astra Honda Motor Inc. (Indonesia)
Honda Atlas Cars (Pakistan) Ltd. (Pakistan)
Atras Honda Ltd. (Pakistan)
Honda Vietnam Co., Ltd. (Vietnam)
Armstrong Auto Parts SDN. BHD. (Malayasia)
Honda Autoparts Mfg., SDN. BHD. (Malaysia)
Dongfeng Honda Auto Parts Co., Ltd. (China)
Dongfeng Honda Engine Co., Ltd. (China)
Guangzhou Honda Automobile Co., Ltd. (China)
Honda Mindong Generator Co., Ltd. (China)
Wuyang-Honda Motors (Guangzou) Co., Ltd. (China)
Jialing-Honda Motors Co., Ltd. (China)

3. Period covered

The Report covers fiscal 2001: from April 1, 2001 to March 31, 2002.

This Report has been compiled on the basis of Honda's guidelines.

# Contents

# Introduction

**Hiroyuki Yoshino**
President and Chief Executive Officer

**Michiyoshi Hagino**
Director in charge of environment
Senior Managing Director

In recent years, measures to achieve economic growth in harmony with the global environment have been increasingly discussed on an international level. Since the United Nations Conference on Environment and Development (Earth Summit) held in Rio de Janeiro in 1992, the national governments have been taking various measures for the sustainable development that enables both environmental conservation and economic expansion. This year, we celebrate the 10th anniversary of the Earth Summit.

Honda announced Honda Environment Statement in 1992 and as a vision for the 21st century decided to become a company that people can look up to. Based on the idea, we have been aggressively conducting environmental conservation activities throughout our business domains.

For the specific progresses made in fiscal 2001, we input the i-DSI engine to the market, which is characterized by higher fuel efficiency and improved exhaust gas cleaning ability and released CIVIC Hybrid in the products domain. In the purchasing domain, we formulated the green purchasing guidelines and explained them to suppliers. In the production domain, we promoted renovation to reduce the consumption of energy and started the operation of the Hamamatsu Factory's Hosoe Plant as a benchmark plant for our environmental activities. In the sales and services domain, we developed the Green Dealer System to encourage our dealers to contribute to the environmental conservation and to please customers through such contribution. As part of the system, we started to certify "Best Green Dealers." Besides to implement the world's top-level environmental management, we built the Honda LCA System to quantify the environmental impacts of all our business domains.

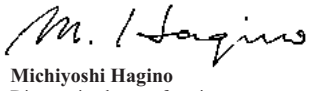
We announced the objectives for 2005 in 1999, which are to improve the fuel economy of automobiles, motorcycles and power products and to realize cleaner exhaust gases. So far, we have steadily achieved results more rapidly than the originally planned pace. For example, for improving the fuel economy of automobiles, we set the goal of improving the economy by 25% compared with the level of 1995 to attain the fiscal 2010 target value for fuel economy set by the revised Energy Savings Law. As a result of making great efforts, we have improved the economy by approximately 30% by inputting new products such as Fit in the market, thus greatly exceeding the original target of 25%.

In all of our business domains, we will further promote the measures to achieve the objective for 2005 as early as possible and will aggressively contribute to local and the global environment.

This Report sums up our results for each fiscal year and is published annually to keep the public informed of our progress. We would feel our efforts were fully rewarded if our readers were kind enough to let us have the benefit of their frank opinions and reactions in response to their perusal of this Report.

July 2002

**Hiroyuki Yoshino**
President and Chief Executive Officer



**Michiyoshi Hagino**
Director in charge of environment
Senior Managing Director

# 1 Fundamental Principle and Vision

The notion to which Honda has held steadfast since its foundation is the principle of "Respect for the Individual" through and on the basis of our corporate activities. This principle has also been the starting point of our environmental conservation activities. Since the mid-1980s, a diverse range of environmental problems have manifested themselves on a global scale. The resulting far-reaching challenges have called for worldwide action. Honda for its part, had already been focusing its efforts on individual environmental issues from the perspective of its own corporate principle before these global environmental problems came to the fore, at the time when problems were still at the "pollution" level. In 1992, Honda announced its environmental targets and the direction of its commitment in a document titled The Honda Environment Statement. Since then, the Statement has been the basis for the recognition that environmental conservation is one of the most important themes in Honda's corporate activities. Honda is pursuing this theme in many and varied ways.

To give more concrete expression to our commitment, we have established specific targets to be achieved by activities aimed at conserving the environment in an endeavor to be a company that our customers from all over the world can look up to in the new century.

Honda is deploying many different corporate activities to maintain this vision. Our customers can be confident that we will always take environmental considerations into account in developing new products. More than that—at Honda we are taking our pledge to a new level in our constant commitment to achieving a world-leading position in environmental performance, while offering our global customers products that are fun to use and inspire dreams. This is the fundamental principle that forms the basis of all environmental conservation activities at Honda.

## Honda Environment Statement

**As a responsible member of society whose task lies in the preservation of the global environment, company will make every effort to contribute to human health and the preservation of the global environment in each phase of its corporate activity. Only in this way will we be able to count on a successful future not only for our company, but for the entire world.**

We should pursue our daily business interest under the following principles:

1. We will make efforts to recycle materials and conserve resources and energy at every stage of our products' life cycle from research, design, production and sales, to services and disposal.
2. We will make every effort to minimize and find appropriate methods to dispose of waste and contaminants that are produced through the use of our products, and in every stage of life cycle of these products.
3. As both a member of the company and of society, each employee will focus on the importance of making efforts to preserve human health and the global environment, and will do his or her part to ensure that the company as a whole acts responsibly.
4. We will consider the influence that our corporate activities have on the regional environment and society, and endeavor to improve the social standing of the company.

Established and announced in June 1992

# 2 Assessment of and Our Policy on the Environmental Load Generated by Our Corporate Activities

Honda is aware of its corporate responsibility for the environmental load generated by all of its corporate activities and the use of its products, and embraces an uncompromising commitment to reducing this and to conserving the environment. To achieve this, it is essential to establish directions and set targets for action on specifically defined issues, while recognizing the environmental load generated by our corporate activities and the use of our products on the global environment.

Recognizing this, our approach is to define specific goals toward which we will work in an effort to resolve the issues that have been identified, by using our concept of life cycle assessment (LCA) to assess and analyze the measurable environmental impact at the present stage.

## Environmental Commitment Policy in our Domains

| Domain | Output | Environmental Impacts | Major Commitments |
|---|---|---|---|
| Products | $CO_2$<br>Exhaust gas<br>Noise | Global warming<br>Depletion of natural resources<br>Air pollution<br>Waste<br>Destruction of the ozone layer<br>Water pollution<br>Soil pollution<br>Noise | ● Clean exhaust gases<br>● Improvements in fuel economy<br>● Noise reduction<br>● Improvements in recyclability |
| Purchasing and Production | $CO_2$<br>Waste<br>Wastewater<br>Exhaust gas<br>Noise<br>Chemical substances | | ● Promotion of Green Purchasing<br>● Promotion of Green Factories |
| Logistics | $CO_2$<br>Packaging materials | | ● Promotion of Green Logistics |
| Sales and Services | Waste parts<br>$CFC_{12}$,$HFC_{134a}$<br>Waste | | ● Promotion of Green Dealers (Automobiles, Motorcycles and Power Products) |
| Disposal and Recycling | End-of-life products | | ● Increasing the recovery, recycling, and reuse of parts<br>● Technical support for the proper disposal and recycling of end-of-life products |
| Administration | $CO_2$<br>Waste | | ● Promotion of Green Offices |

# 3 Specific Targets* to be Achieved and Results

* Honda has been making effort to achieve targets in Japan.



To give further impetus to our environmental conservation activities and achieve clear results in a more effective manner, Honda has set itself voluntary targets and is working toward their attainment. The following data gives our targets and the level to which we attained them at the end of fiscal 2001. Our progress in reaching our targets is presented in "Results of Environmental Conservation."

## Specific Objectives Announced in Fiscal 2001: "Cleaner Exhaust Gas by 2005"

| | |
|---|---|
| **Automobiles** | To have most of Honda automobiles to be approved as "Ultra" low emission vehicles (with the emission level reduced by 75% compared with the 2000 exhaust emissions standards of Japan) by the Ministry of Land, Infrastructure and Transport.*<br>(The actual results will be reported in the Honda Environmental Annual Report 2003 as well as in the subsequent reports.) |

## Specific Objectives Announced before Fiscal 2001

### Targets to be Achieved by 2005 by Improving Clean Exhaust Gas Emissions and Fuel Economy (1999)

| | Specific targets | Progresses made in fiscal 2001 | Reference pages |
|---|---|---|---|
| **Automobiles** | Up to fiscal 2005 : To reduce the total exhaust emissions of HC and NOx by approximately75% for new vehicles (compared with fiscal 1995)* | • HC: Reduced by 70%<br>• NOx: Reduced by 71% | See page 22 |
| | Up to fiscal 2002 : To achieve a clean performance that exceeds the 2000 exhaust emissions standards of Japan by 50% or more for all vehicles* | Percentage of the models that attained the objective: 91% | See page 22 |
| | Up to fiscal 2005 : To achieve the new fuel efficiency standards of Japan for fiscal 2010 for all weight categories* | Achieved for 5 categories among 6 weight categories | See page 24 |
| | Up to fiscal 2005 : To improve the average fuel economy by approximately 25% (compared with fiscal 1995)* | Improved by approximately 30% (Attained) | See page 24 |
| **Motorcycles** | Up to fiscal 2005 : To reduce the total exhaust emissions of HC to approximately 1/3 for new vehicles (compared with fiscal 1995) | Reduced to approximately 24% (Attained) | See page 28 |
| | Up to fiscal 2005 : To improve the average fuel economy by approximately 30% (compared with fiscal 1995) | Improved by approximately 18% | See page 28 |
| **Power Products** | Up to fiscal 2005 : To reduce the average exhaust emissions of HC and NOx by approximately 30% for new products (compared with fiscal 1995) | Reduced by approximately 30% (Attained) | See page 30 |
| | Up to fiscal 2005 : To improve the average fuel economy by approximately 30% (compared with fiscal 1995) | Improved by approximately 20% | See page 30 |

### Recyclability Rate for New Models of Automobiles and Motorcycles

| | | | |
|---|---|---|---|
| **Automobiles** | 90% or more from 2000 onward | (Attained) | See page 27 |
| **Motorcycles** | 90% or more | (Attained) | See page 29 |

### Lead Content in New Models of Automobiles and Motorcycles

| | | | |
|---|---|---|---|
| **Automobiles** | By the end of 2003 : 1/3 or less (compared with 1996) | Reduced to 1/3 for all automobiles | See page 27 |
| **Motorcycles** | Equal to or below the lead content in 1996 | (Attained) | See page 29 |

### Energy Saving and Reduction in Waste in the Production Domain

| | | | |
|---|---|---|---|
| | Up to fiscal 2001 : 15% reduction in energy intensity (compared with fiscal 1990) | Reduced by 15.6%<br>(The objective for 2001 was already attained.) | See page 33 |
| | Up to fiscal 2010 : 30% reduction in energy intensity (compared with fiscal 1990) | | |
| | Up to fiscal 2001 : Achieving ZERO landfill disposal | (Attained) | See page 34 |

## Activities Already Successfully Completed

**The following activities not featured in this report have already been completed successfully.**

| | | Time completed |
|---|---|---|
| **Automobiles:** | Abolition of CFC12 in favor of HFC134a | End of 1994 |
| | Discontinuing the use of sodium azide*1 (Mass-produced vehicles sold in Japan) | End of 1998 |
| | Reducing the lead content in the covering of wire harnesses*2 | End of 1998 |
| **Motorcycles:** | Reducing the lead content in the covering of wire harnesses | End of 1998 |
| **Power Products:** | Reducing the lead content in the covering of wire harnesses | End of 1998 |

*1 Sodium azide: Sodium azide's chemical symbol is $NaN_3$. It was the primary ingredient in the gas generator for automotive air bag systems. When an automobile that contains an air bag system that has not been activated is crushed, for example, the sodium azide is released into the atmosphere, where it forms a potential hazard to workers' health.

*2 Wire harnesses: An automobile contains a huge number of wires (approximately 1000) that form the wiring networks. Wire harnesses are used to systematically run the wires between terminals and connectors and facilitate their installation on vehicles.

# Results for Fiscal 2001 and Targets for Fiscal 2002 / Environmental Accounting

## 1 Results for Fiscal 2001 and Targets for Fiscal 2002

Our efforts of the previous year also continued in fiscal 2001 with a commitment to achieving the high targets set for all domains in the life cycle of Honda's products. Some activities achieved their set targets while others failed to attain their goals for various reasons, including changes in conditions. The outcomes of all activities whether "on target" or not were analyzed and the findings were fed back to the targets and programs set for fiscal 2002 in our commitment to further reductions in the environmental loads of our products.

### Product Domain

| Major Commitments | Procedures | | Fiscal 2001 Targets | Fiscal 2001 Results | Level of attainment | Fiscal 2002 Targets |
|---|---|---|---|---|---|---|
| Clean exhaust gas | Automobiles | Expansion of "Ultra" low emission and "Excellent" low emission vehicles | "Ultra" low emission vehicles: 3 models<br>"Excellent" low emission vehicles: 12 models | "Ultra" low emission vehicles: 3 models<br>"Excellent" low emission vehicles: 12 models<br>(All the models released in fiscal 2001) | ◎ | To reduce emissions by 50% or more compared with the fiscal 2000 emissions standards of Japan for all vehicles |
| | Motorcycles | Shift to 4-stroke engines | 12 models | 12 models (All the model released in fiscal 2001)<br>(Shift to 4-stroke engines: attained by 69.1% of the models) | ◎ | Future extensions |
| | Power Products | Commitment in anticipation | 6 models | 6 models (All the models released in fiscal 2001) | ◎ | |
| | Development of alternative energy vehicles | | To be successively expanded | Release of natural gas powered general purpose engine "GX390" | ◎ | |
| Improvements in fuel economy | Upgrading efficiency by employing new technologies | | Automobiles : Improvements in the average fuel economy by category | Improved for all the 6 categories (of which, 5 categories have met the fiscal 2010 fuel economy standards of Japan) | ◎ | Further improvements in fuel economy |
| | | | Motorcycles : Improvements in fuel economy for new models | ZOOMER, Bite, Dio Z4: 75km/ℓ<br>(Constant speed fuel economy: 30km/h.) | ◎ | |
| | | | Power products : Improvements in fuel economy for new models | Snowblower HS1390i :<br>10% improvement compared with the traditional model | ◎ | |
| Improvements in recyclability | Enhancing the recyclability rate | | Improved recyclability rate | Motorcycles and automobiles: 90% or more<br>Outboard engine BF225: 94% | ◎ | Improved recyclability rate |

### Purchasing and Production Domain

| Major Commitments | Procedures | Fiscal 2001 Targets | Fiscal 2001 Results | Level of attainment | Fiscal 2002 Targets |
|---|---|---|---|---|---|
| Promotion of Green Purchasing | Reduction of chemical substances contained in the products of suppliers (parts and materials) | ———— | ———— | — | Compliance with the schedule set in Honda's chemical substance guidelines |
| | Management of environmental impacts in suppliers' manufacturing process | ———— | ———— | — | Reduction of suppliers' $CO_2$ emissions |
| | | ———— | ———— | — | Reduction of suppliers' landfill wastes |
| | Introduction of environmental management systems to suppliers | ISO14001 certification acquired by 15 companies | ISO14001 certification acquired by 10 companies | △ | Promotion of the acquisition of ISO14001 certification by all suppliers |
| Promotion of Green Factories | Improvements in energy efficiency | Energy intensity:<br>22.9$CO_2$-tons/¥100 million | Energy intensity:<br>22.1$CO_2$-tons/¥100 million | ◎ | Reduction by 2% of the energy intensity from the fiscal 2001 level |
| | | $CO_2$ emission volume:<br>480,000$CO_2$-tons | $CO_2$ emission volume:<br>488,000$CO_2$-tons | △ | $CO_2$ emission volume:<br>480,000$CO_2$-tons |
| | Zero landfill disposal | ———— | (Continuance of zero landfill disposal) | (◎) | (Continuance of zero landfill disposal) |
| | Reducing the amount of incinerated waste | 43% reduction as compared with fiscal 1998 | 47% reduction as compared with fiscal 1998 | ◎ | 56% reduction as compared with fiscal 1998 |

### Logistics Domain

| Major Commitments | Procedures | Fiscal 2001 Targets | Fiscal 2001 Results | Level of attainment | Fiscal 2002 Targets |
|---|---|---|---|---|---|
| Promotion of Green Logistics | Implementation of environmental management system for distribution companies | ISO14001 certification acquired by major 4 companies | No company acquired the ISO14001certification in the fiscal year. (It had been already acquired by three of the major 4 companies.) | × | ISO14001 certification acquired by major 4 companies |
| | Improvements in shipping efficiency | $CO_2$ emission volume:<br>119,926$CO_2$-tons*1<br>(Transport of completed automobiles) | $CO_2$ emission volume: 125,452$CO_2$-tons<br>(Transport of completed automobiles) | × | $CO_2$ emission volume:<br>126,400$CO_2$-tons*2<br>(Transport of completed automobiles) |

*1 In the last year's report, the $CO_2$ emission target was reported as 16,352 $CO_2$-tons. This was, however, incorrect. It should have been 16,352 C-tons. From this year, it was decided to take the return trip also into considerations. The fiscal 2001 target was therefore changed as follows:
(Fiscal 2001 target) 119,926 $CO_2$-tons = 16,352 C-tons x 3.67 (to convert C to $CO_2$) x 2 (to take the return trip into considerations)

*2 While the fiscal 2002 target for $CO_2$ emission has increased as compared with the fiscal 2001 results, this increase is to allow for the planned growth in shipments. This target figure does, however, already include the (anticipated) reduction effect arising from the measures being taken to improve transport efficiency.

## Sales and Services Domain

| Major Commitments | Procedures | | Fiscal 2001 Targets | Fiscal 2001 Results | Level of attainment | Fiscal 2002 Targets |
|---|---|---|---|---|---|---|
| Promotion of Green Dealers / Green Distributors | Automobiles | Implementation of environmental management system for dealers | Start of the second step certification of the Green Dealer Certification System | Start of the second step certification "Best Green Dealer" (The certification was acquired by 1,024 stores.) | ◎ | Acquisition of the Best Green Dealer Certification by 1,650 stores |
| | | Promoting the proper disposal of end-of-life vehicles | Increase in CFC12 destruction rate | CFC12 destruction rate: 83.3% (Improved by approximately 26 points) | ◎ | ———— |
| | Motorcycles | Promoting the proper disposal of end-of-life motorcycles and waste parts | Establishment of a recycling system for end-of-life motorcycles | Continued examination by Japan Automobile Manufacturers Association, Inc. | —* | ————* |
| | | Implementation of environmental management for distributors and dealers | Launching of Green Distributor/ Dealer Certification System | Integration of the Green Dealer System as a part of the spread of Honda Dream Stores | ◎ | Expansion of Honda Dream Stores |
| | Power products | Promotion of environmental conservation activities for dealers | Full-scale deployment of Green Dealer | Understanding of the actual measures taken by dealers | × | Building and full-scale implementation of the Green Dealer Certification System |

*The building of the motorcycle recycling system, which was set as one of Honda's fiscal 2001 targets, is not included in the items to be reported in this report, because it has become the objective to be achieved by the entire industry.

## Disposal and Recycling Domain

| Major Commitments | Procedures | Fiscal 2001 Targets | Fiscal 2001 Results | Level of attainment | Fiscal 2002 Targets |
|---|---|---|---|---|---|
| Increasing the recovery, recycling, and reuse of parts | Expansion of the remanufacturing business | Release of 1 new item | Start of "Honda Recycle Parts" by integrating the remanufacturing business and reuse business | — | Expansion of the "Honda Recycle Parts" |
| | Development of reuse business | Start of reuse business | | | |
| Technical support for proper disposal and recycling of end-of-life vehicles | Technical development for proper disposal and recycling of end-of-life vehicles | Support for and execution of achieving the actual recycling rate of 85% or more | • Improving the efficiency of the "vehicle turnover device for dismantling"<br>• Formulating a dismantling line plan<br>• Measuring the actual recycling rate | ◎ | Support for achieving the actual recycling rate of 95% or more |

## Administration Domain

| Major Commitments | Procedures | Fiscal 2001 Targets | Fiscal 2001 Results | Level of attainment | Fiscal 2002 Targets |
|---|---|---|---|---|---|
| Promotion of Green Office | Implementation of environmental management system for the office | Continuous improvement and consolidation of environmental management system in the office | Consolidation of environmental management system in the office | ◎ | Introduction of environmental viewpoints to daily businesses |

(These tables present the main results achieved in FY2001 and the targets for FY 2002.)

# 2 Environmental Accounting

Honda is in the process of introducing environmental accounting based on the following objectives:

- Environmental accounting is to provide a management tool in the environmental area.
- Environmental accounting offers indices for corporate evaluation and serves as a data source for disclosure to the public.

The table below gives the costs and effects of the environmental conservation activities conducted in fiscal 2001.

In this fiscal year, Honda will announce its environmental conservation costs, and as the effect of the costs, the reduced amounts of main environmental loads in the production and logistics domains. For details, please refer to the sections describing each of the domains. Consideration will be given to the expansion of Official Statement of Effect coupling with the introduction of LCA. The effects will include economic effects as well and criteria will be established to calculate the effects of corporate environmental activities in each of the domains.

## Costs and Effects of Environmental Conservation Activities

(Unit : million yen)

| Category | | Details of the major activities, etc. | Investment amount | Expense amount | Effects |
|---|---|---|---|---|---|
| Business areas costs | Pollution prevention costs | • Prevention of air, water and soil pollution, etc. | 177 | 1,950 | ■ Production domain<br>Reduced $CO_2$ emissions: 18,000$CO_2$-tons<br>(4% reduction as compared with the previous fiscal year) → See page 33.<br>Reduced energy intensity: 0.89k//¥100million<br>(3.5% reduction as compared with the previous fiscal year) → See page 33.<br>Reduced externally disposed wastes: 5tons<br>(100% reduction as compared with the previous fiscal year) → See page 34.<br>Reduced incinerated waste: 830tons<br>(9.6% reduction as compared with the previous fiscal year) → See page 34.<br>Reduced VOC emission: 8.5g/$m^2$<br>(17% reduction as compared with the previous fiscal year) → See page 34.<br>Reduced PRTR substance emission: 129tons<br>(5% reduction as compared with the previous fiscal year) → See page 34.<br>■ Logistics domain<br>Reduced $CO_2$ emission in the transport of completed automobiles: 785$CO_2$-tons → See page 36.<br>Reduced packaging materials for repair parts: 1,119tons<br>(Approximately 8% reduction as compared with the previous fiscal year)<br>→ See page 37. |
| | Global environmental conservation costs | • Prevention of global warming and ozone layer depletion, and other environmental conservation | 1,215 | 517 | |
| | Resource circulation costs | • Disposal, reduction and recycling of waste | 152 | 1,278 | |
| Upstream/downstream costs | | • Green purchasing (balance)<br>• Collection, recycling, reuse and proper disposal of the products manufactured and sold<br>• Member fees and other charges paid to trade organizations | 5 | 2,263 | |
| Management activity costs | | • Provision of environmental training to employees<br>• Building, operation and acquisition of the certification of an environmental management system<br>• Monitoring and measurement of environmental impacts<br>• Organization in charge of environmental conservation measures | 9 | 830 | |
| Research and development costs | | • Research and development of products contributing to environmental conservation<br>• Research, development and planning for reducing environmental impacts in the manufacturing, distribution and marketing processes | 3,970 | 100,360 | |
| Social activity costs | | • Environmental improvement measures including nature protection, greening and the preservation of beautiful scenery<br>• Provision of support and information to local citizens<br>• Donation and support to organizations engaged in environmental conservation activities<br>• Disclosure of environment-related information and environmental advertisement | 0 | 156 | |
| Environmental damage costs | | • Costs for taking measures against environment-related recalls<br>• Restoration of polluted soil and underground water | 0 | 401 | |

1) The scope of the present calculations is as follows:
- Companies included in the accounts
  Honda Motor Co., Ltd. Honda R&D Co., Ltd. Honda Engineering Co., Ltd., Honda Motorcycle Japan Co., Ltd.
- Domains included in the accounts
  All domains in the life cycle of Honda products

2) The published figures include some that have been estimated and some given as combined figures because of the difficulty of determining differential amounts.
3) For the tabulation, we referred to the Environmental Accounting Guidelines (Fiscal Year 2002 Version), which was published in March 2002 by the Ministry of the Environment of Japan.
4) This Report publishes the specific results achieved in our efforts for each fiscal year. Starting from this fiscal year, the aggregate total of our environmental conservation costs are quoted on a cash-flow basis in terms of the monetary amount less depreciation costs.

# Next-Generation Environmental Technologies

Honda is constantly engaged in research and development of advanced environmental technologies that let us share the joy of environmental conservation with our customers.

This chapter shows technologies that were used for the products and are in the process of conducting research continuously in fiscal 2001.

## Product Research and Development

### 1. Next-Generation 1.3-Liter, 4-Cylinder i-DSI* Engine

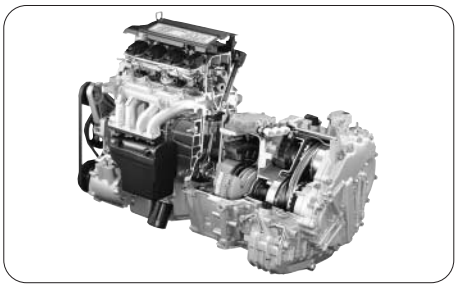
* DSI: Dual & Sequential Ignition

Section through the i-DSI engine

Honda has developed a new high-performance, lightweight and compact 1.3 liter, 4-cylinder gasoline engine called "i-DSI" as the second in its "i-series" of next-generation engines. It achieves high fuel economy and low exhaust emission performance by rapid combustion and has high overall torque performance. This engine is mounted in our new small car "Fit."

For this engine, the new design compact combustion chamber incorporates two ignition plugs. The dual and sequential ignition system arranges the ignition timing of the two plugs intelligently in the optimal way for the speed of rotation and the load. Thus faster and almost perfect ignition can be achieved.

### 2. Adoption of New Honda IMA System on the CIVIC Hybrid



New Honda IMA System

In September 2001, Honda announced a new system that further improves the efficiency of its unique hybrid system called the Honda IMA (Integrated Motor Assist) System, which contributes to better fuel economy. We adopted the new system for the CIVIC Hybrid released in December 2001. Equipped with a state-of-the-art i-DSI lean-burn engine and the Variable Valve Timing and Lift Electric Control System (VTEC) used as the cylinder idling system contributing to the regeneration (charging of electric energy during deceleration), the model provides higher fuel economy.

Furthermore, by combining the assist motor for improved performance, the power control unit (PCU) for higher efficiency, and the Honda Multimatic S (continuously variable automatic transmission), the model has achieved the world's highest fuel economy of 29.5 km/ℓ* for mass production gasoline-powered vehicles for 5 passengers. It meets the 2010 fuel economy standards of Japan and also meets the criteria for approval as an "Ultra" low emission vehicles by the Ministry of Land, Infrastructure and Transport of Japan.

* 10·15 mode (inspected by the Ministry of Land, Infrastructure and Transport of Japan)

### 3. Fuel Cell Vehicle


FCX-V4

Honda introduced the FCX-V4 in September 2001 as a new fuel cell vehicle with improved driving performance and endurance. We also made it safer against collisions to make it more comparable to vehicles available in the market in terms of overall performance.

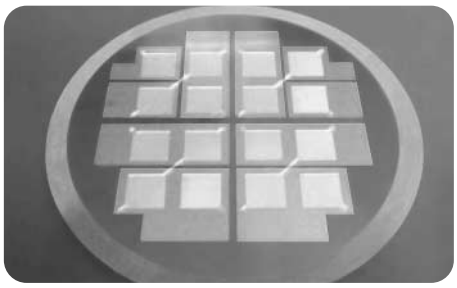
Also in fiscal 2001, we continued to participate in the California Fuel Cell Partnership Program (CaFCP) in the United States and the FCX-V4 was used as a lead car in the City of Los Angeles Marathon. In Japan in March 2002, we obtained approval from the Ministry of Land, Infrastructure and Transport to conduct test runs on the vehicle to accumulate data for practical use. We plan to put it into practical use within 2003.

### 4. Hydrogen Production and Fueling Station

Hydrogen manufacturing and supply station

Honda established a hydrogen production and fueling station within its research institute in Los Angeles in the US to generate hydrogen for fuel cell vehicles from water by the use of solar energy. It started experimental operation in July 2001. The station is composed of the following: solar cells producing electricity from solar energy; a control system to use the generated electricity most efficiently; an electrolysis system to extract hydrogen from water by the use of electricity; a compressor pressurizing the extracted hydrogen; and a tank to store the high-pressure hydrogen.

## 5. Miniature Fuel Cells



Miniature fuel cells

Honda developed miniature fuel cells jointly with Stanford University of the US, utilizing its micro processing and thin film manufacturing technologies. Furthermore, we succeeded in power generation by connecting four single cells in series on the same surface, and announced it as a success in September 2001.

This simplified configuration results in higher output density and a more simplified manufacturing process than a conventional stacked layout. It is expected to enhance the potential for mass production and ensure a more stable product quality in micro-fuel cells.

## 6. New Local Transport System (ICVS) world.honda.com/ICVS/

Honda is engaged in research and development with a view to achieving a practicable vehicle sharing system, the Intelligent Community Vehicle System or ICVS for short. ICVS is designed to lessen the environmental impacts of our motorized society on the principle of sharing the use of environmentally-friendly vehicles and motorcycles, for example, among club members for an effective use of alternative transport means according to purpose and use. In this way, we can utilize resources effectively and improve our living environment. The following shows the ICVS research and results in fiscal 2001.


ICVS system in Singapore

CarLinkII

### Operation of an ICVS System in Singapore

In April 2001, we started to conduct research and development for the practical use of an ICVS in Singapore and started practical operation in March 2002, supported by the Government of Singapore. Within the Central Business District (CBD), we established three ICVS ports for the shared use of 15 CIVIC Hybrids by about 50 members, who used them for transportation within and outside the district.

The system has the following characteristics:

(1) Members can pick up and return the vehicles with special IC cards.
(2) They can pick up vehicles from and return them to any of the three ports.
(3) They can use the vehicles without a reservation whenever they want to by simply visiting a port.
(4) Wherever they are, they can check the availability of cars on their mobile phone or via the Internet and can complete the necessary procedure to use a car.
(5) Vehicles can be distributed to any of the ports in response to demand to shorten the waiting time of people who want to use them.

We will pursue profitability while increasing the numbers of vehicles, ports, and members.

### Operation of "CarLinkII" in the US

In August 2001, we started to operate a new local transport system called CarLinkII in the State of California jointly with the State's Department of Transportation.

CarLinkII is a system in which its members pay to hire and return vehicles at ports established near railway stations and 27 CIVIC ULEVs (ultra low emission vehicles) are provided for the shared use of members. CarLinkII will be in operation until June 2002 and the system will be evaluated based on the data collected.

### "Honda Cycle Partner" Business

In December 2001, Honda started marketing the Honda Cycle Partner, which is a system for the shared use of electric power assisted cycles. Under the Honda Cycle Partner system, ports are established near the parking spaces of apartments for the shared use of electric power assisted cycles by residents who are members. The sale represents the first step for Honda's ICVS business. In the future, we intend to expand the business to include the use of electric powered wheelchairs (Monpal).

# Next-Generation Environmental Technologies

## 7. Diesel Engines

The Civic marketed in Europe

Honda adopted the 1.7-liter diesel turbo engine made by Isuzu Motors Incorporated at its Polish plant for the CIVIC that will be marketed in Europe, and started production of the model at Honda of the U.K. Mfg., Ltd. in November 2001. The 1686 cc DOHC diesel engine, specially developed for the CIVIC, adopts a common-rail, high-pressure fuel injection system, and outputs up to 100ps with its improved fuel economy. We are now developing a 2-liter class engine which we plan to adopt for the next Accord to be marketed in Europe within 2003, as a next-generation diesel engine that is both environmentally friendly and has top-level performance.

## 8. Natural Gas Cogeneration for Households

Small-sized cogeneration unit

Honda has developed a small-sized cogeneration unit for households*1 and put it into pilot operation at general households in Japan jointly with gas companies such as Osaka Gas Co., Ltd. The natural gas-powered engine and the generator adopting a unique sine-wave inverter generates 1 kW of electric power and 3 kW of thermal power. The total thermal efficiency for power generation and hot water supply is 85%, and the unit is expected to reduce $CO_2$ emissions by approximately 20%*2. The natural gas-powered cogeneration unit for households will be sold to major town gas companies in Japan within fiscal 2002.

*1 Energy supply system that uses waste heat generated concurrently with electricity for supplying hot water and heating
*2 According to calculations made by Honda in comparison with electricity from thermal power generation and hot water supplied from a gas-powered machine

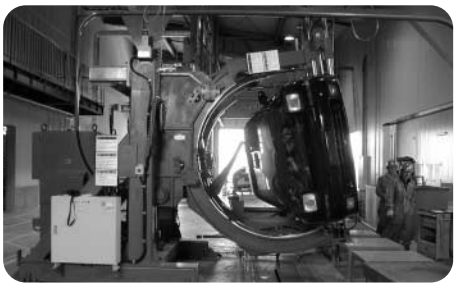
## 9. Mutlipurpose Natural Gas Engine

GX390

Honda has developed the new GX390, which is a compressed natural gas-powered 9-horsepower, 4-stroke multipurpose engine mainly used for small-sized trucks, and has started marketing the product to makers. Natural gas-powered engines are attracting attention because of their clean emission gases, making them suitable for trucks for use within food markets to transport fresh food, etc. Honda's GX390 was adopted by the wholesale market in Sapporo City as the first compressed natural gas-powered engine for trucks used inside the market.

The GX390 makes a suitable engines for these trucks, with improved durability of its valves and the adoption of battery CDI for stable combustion.

## 10. Vehicle Turnover Device for Dismantling



Vehicle turnover device for dismantling

Honda has improved the vehicle turnover device for dismantling*, that it developed in 1996 and released in January 1997, and has started to sell the improved product to dismantlers.

As a result of the improvement, the work efficiency of the entire dismantling process has almost doubled compared with dismantling using the traditional turnover device. Workers can dismantle vehicles without stooping, thereby ensuring safety during the work and reducing the workload.

* The device lifts a car and rotates it to a position to facilitate dismantling.

# Design and Constructing of Factories

## 1. Hamamatsu Factory's Hosoe Plant

Solar cell panels installed on the roof of the plant

The construction of Hamamatsu Factory's Hosoe Plant to produce outboard engines was completed in Hosoe-cho, Inasa-gun in Shizuoka Prefecture in September 2001. The Hosoe Plant, located near Lake Hamana, is regarded as Honda's environmental benchmark plant for the 21st century, and it will be the site for the implementation of Honda's Green Factory concept. We planned the construction based on the results of an LCA to quantify the environmental impact.

### ① Environmentally-friendly planning and design

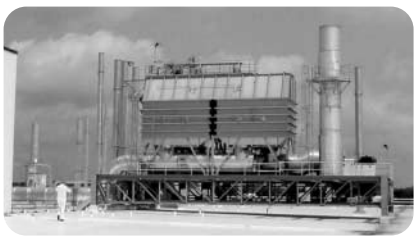
- Effective use of water resources/Zero wastewater in the production process
  - Use of recirculating water for checking completed outboard engines (Closed system)
  - Use of rainwater for flushing toilets and as water supply for the cooling tower (utilization ratio of 40%)
- Higher energy efficiency and reduced $CO_2$ emissions
  - Highly efficient production system (Line integration from engine assembly to shipment to improve the production space efficiency)
  - Direct shipment of packaged products by transport containers (reduced storage space and transport energy)
  - Energy saving by using reduced air pressure to drive tools
  - Energy-saving factory building (heat insulation) and equipment (inverters, reuse of waste heat)
  - Solar power generation using next-generation thin film solar cells (developed by Honda Engineering Co., Ltd.)
- Introduction of constant monitoring devices for rain drainage
- Harmony with the surrounding environment (symbiosis with the local community)
  - Kind to birds (use of window glass that birds do not normally fly into)
  - Planting of 32,000 trees on the boundaries to create a local forest
  - Local residents allowed to use the playground

### ② Environmentally-friendly construction

- Proper disposal of construction waste
  - By sorting and recycling waste, zero construction waste landfill achieved
- Environmentally-friendly construction method
  - Reduction in the use of plywood from tropical forests by the use of wire mesh frames
- Radical management of wastewater
  - Zero disposal of waste soil outside the construction site
  - Use of ISO 14001-certified constructors
  - Use of non-vibrating pile driving method and low-noise heavy machines

## 2. Honda Manufacturing of Alabama (US)

■ Preventing oil leakages
Overhead pipes enable problems to be detected quickly, and oil drip pans are installed in the bottom sections of the pipes in case of leakage.



■ RTO equipment to make VOC*2 harmless
"Thermal Oxidizer"
The exhaust from the paint process is collected to one place and 95% of it is converted into $CO_2$ and water using a ceramic catalyzer kept at a temperature of 800°C

### Extensive pollution control measures create an advanced environmentally-friendly factory

Honda Manufacturing of Alabama, Honda's latest factory in North America, was established in Lincoln, Alabama in December 1999. Since November 2001, the factory has been producing the ODYSSEY (LAGREAT in Japan) and V-type 6-cylinder engines. The factory covers approximately 5.5 million square meters and employs about 2,200 people, including employees transferred from Japan. In establishing this factory, Honda set itself the goal of becoming a local company that people can look up to, and introduced various advanced environmental conservation measures. In addition to complying with the standards set by the PTI (Permit to Install) given by the EPA*1, we aimed to make the factory a model factory, keeping it in harmony with the surrounding natural area, including the abundant water systems.

### Measures to prevent soil and underground water pollution

By concentrating the oil supply facilities in one place, the factory minimizes the risk of oil leakage at the time of delivery. Overhead supply pipes are equipped with drip pans to collect oil in the event of pipe leaks. And treated wastewater is discharged through a double-walled effluent line to give special protection against leakage.

### Measures to prevent air pollution

In the painting process, water-based paints are used for intermediate and final base coats. The gases emitted by the drying furnace and the final clear coating process are collected and treated by an RTO (Regenerative Thermal Oxidizer).

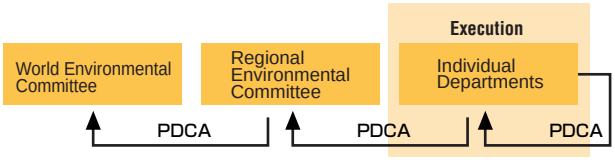
*1 EPA: Environmental Protection Agency in the US
*2 VOC: Volatile Organic Compound

# Environmental Management

To give concrete meaning to the Honda Environment Statement that specifies the general direction of Honda's environmental conservation activities, Honda has made efforts to establish and expand its organization to deal with the environment. This step has been taken in recognition of the fact that fair management and return of benefits to the public, as well as our efforts to reduce the environmental loads associated with our corporate activities, are vital and essential to the maintenance of sustainable corporate activities in the future. On the basis of these concepts, Honda has established an environmental management system for the smooth deployment of environmental conservation activities.

## 1 General Policy

Honda's environmental action plans are established by the individual active departments on the basis of medium-term policies determined by the Executive Committee. These plans are then discussed and approved at the Environmental Committee. After this, the individual active departments concerned push ahead with their commitment in accordance with these plans. The results are scrutinized and evaluated by the Environmental Committee and fed back to the next targets and plans to complete the PDCA* cycle at the regional level.




Universal issues shared worldwide are reported to the World Environmental Committee and fed back to the Medium-Term Policy Statement.

The hallmark of Honda's activities is that planning and execution are not left to specially-appointed staff, but rather that the individual employees of all departments are involved themselves. This is what Honda means when it says "All members of the Honda organization are individually engaged in a positive commitment to environmental issues as part of their own duties."

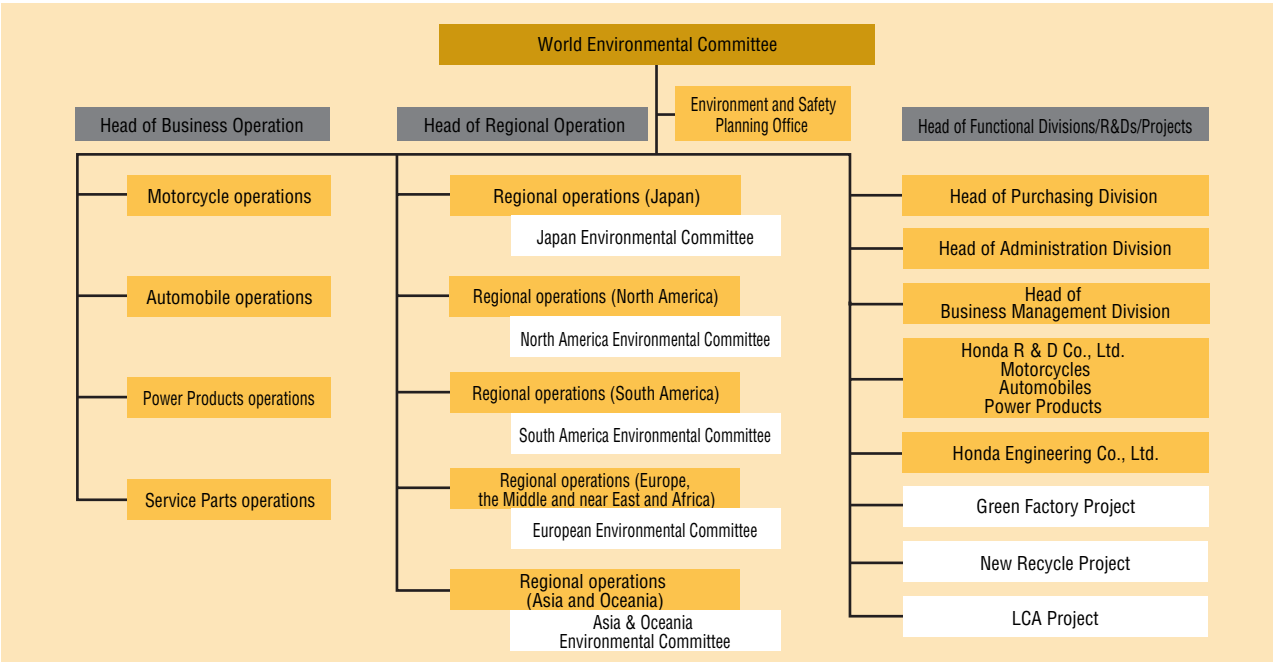
* PDCA stands for Plan, Do, Check, Action.

## 2 Organization

In December 1991, Honda created an Environmental Committee as an organization that could to play a core role in dealing with environmental issues in Japan. After this, the organization framework was extended to North America, South America, Europe, Asia, and Oceania. In March 1995, the World Environmental Committee was set up to frame and promote the world-spanning plans for our commitment.

In addition, we have created a system to effectively promote our efforts on organization-spanning themes. In this context, we initiated the Green Factory Project*1 and the New Recycle Project*2 in 1997, and the LCA Project*3 in 2000.

*1 The purpose of this project is to promote the "Green Factory Plan" in the production domain, aimed at new factories befitting a recycling-based society. In this project, solutions to issues such as energy-saving and waste reduction are deployed to our factories throughout the world.
*2 In this project, recycling activities, involving recycling design and recycling technology, as well as recovery and disposal systems, are deployed over the products' whole life cycle, in anticipation of the future sustainable use of resources.
*3 See page 21.



# 3 Role

## ● World Environmental Committee

The World Environmental Committee plays the role of a committee to deliberate the world-spanning plans for our commitments in accordance with Honda's management policy. This Committee decides environmental policies and conducts annual reviews of their execution and implementation.

## ● Japan Environmental Committee

The objective of the Japan Environmental Committee is to enhance the level of execution of environmental conservation activities that are deployed in Japan. It determines its targets on the basis of the annual PDCA reviews of the individual active departments, and by trying to achieve an overall balance and compatibility. It also establishes new policies in accordance with an analysis of the situation of the individual active departments. Through these activities, it tries to maintain and improve its endeavors to cover the entire life cycle of Honda's products on an ongoing basis.

## ■ Sales Domain

The mission of the Sales Domain, which mainly consists of motorcycles, automobiles, power products, and parts, is to meet the current market demand in terms of the diffusion of environmentally-friendlier products, the proper disposal of end-of-life products, and parts recycling.

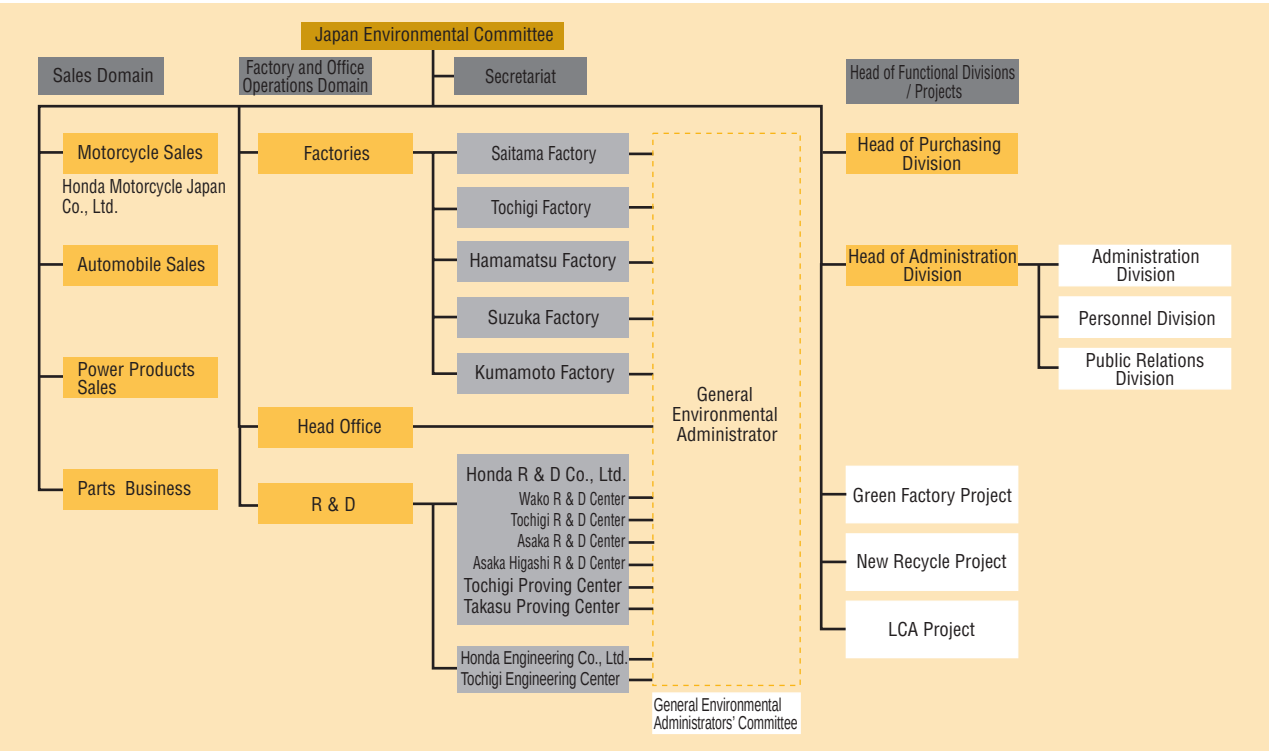
## ■ Factory and Office Operations Domain

The Factory and Office Operations Domain comprises the active departments organized within our factories and offices. This domain has the important role of dealing with environmental issues at our factories and offices. The General Environmental Administrator* devises and carries out policy measures for the Factory and Office Operations Domain through the General Environmental Administrators' Committee. Here, the programs as a whole are managed by the Green Factory Project.

* The General Environmental Administrator is responsible for the environmental activities at their factory/office in general, and for the running of the environmental organization. They also have administrative-managerial responsibility for the environmental management system of the factory/office and acts as the Chairman of the Preliminary Evaluation Committee under the provisions of the Recycling Law.

## ■ Head of Functional Divisions/Project

This domain has the role of handling the environmental issues for the entire range of PR, environmental training and social activities in general. It comprises the Purchasing Department, the General Affairs Department, the Personnel Department, the PR Department and three projects. The Purchasing Department promotes the initiative of "Green Purchasing." The General Affairs Department promotes such measures as implementation of the "environmentally friendly vehicles" within the company. The Personnel Department plays the roles or providing the employees with environmental training, and the PR Department disseminates information on the environment to society. Three projects promote the deployment of organization-spanning themes.



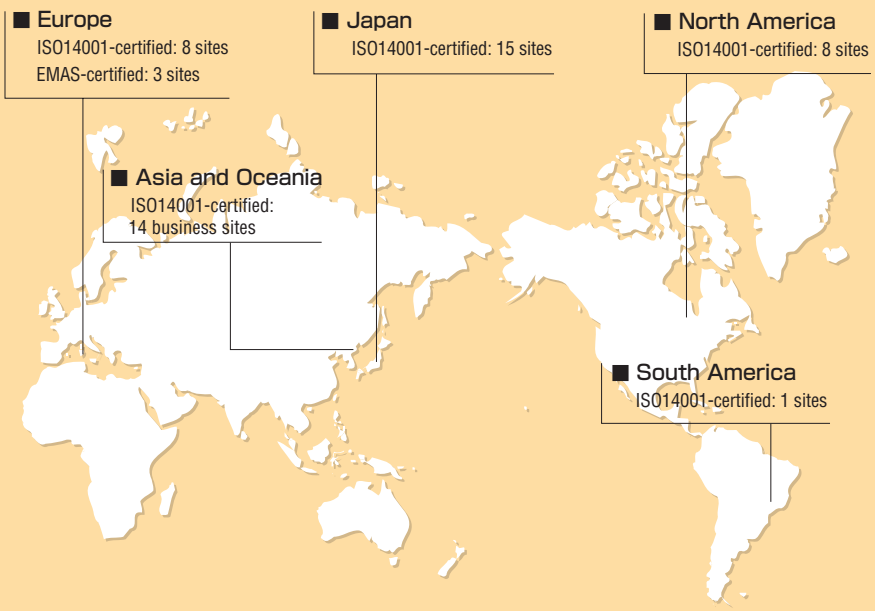
## 4 Environmental Management by Honda's Business Sites (ISO14001 and EMAS)

Concurrently with the building of the environmental management system for Honda as a whole, each of its business sites are introducing environmental management systems to continuously improve their ability to protect the environment and to more thoroughly control substances with the environmental impacts.

Honda has actively engaged in acquiring the ISO14001 certification, the international standard for the environmental management system, mainly for our production operations. In Japan, all of Honda's production plants acquired the certification within fiscal 1998. Besides as a part of the Green Office promotion, the head office building in Aoyama and other offices also acquired the ISO14001 certification.

We are also advancing the work to acquire the certification for our primary production plants in North America, South America, Europe, Asia and Oceania. In Europe, we are promoting the acquisition of the EU's Eco Management and Audit Scheme (EMAS)

**ISO14001/EMAS-certified business sites as of the end of fiscal 2001**




Honda's* ISO14001-certified business sites are as shown above, totaling 46 sites as of the end of fiscal 2001. The EMAS-certified business sites in Europe are presently three.

Please refer to the right tables for the business sites that acquired the ISO14001 and EMAS certification in fiscal 2001.

We will further promote the establishment of ISO14001-certified (and EMAS-certified in Europe) environmental management systems within the Honda Group and encourage the certified business sites to continue to be certified. Through these measures, we will promote the PDCA cycle at our business sites as continuous measures to reduce environmental impacts of our business.

**Business sites that acquired the ISO14001 certification in fiscal 2001**

| Name of the business site | Location | Business details | Date of certification |
|---|---|---|---|
| Asian Autoparts Co., Ltd. | Thailand | Manufacturing parts for motorcycles, automobiles and power products | December 2001 |
| Honda Vietnam Co., Ltd. | Vietnam | Manufacturing and marketing of motorcycles | September 2001 |
| Guangzhou Honda Automobile Co., Ltd. | China | Manufacturing of automobiles | November 2001 |
| Honda Siel Power Products Ltd. | India | Manufacturing and marketing of automobiles | April 2001 |

**Business sites that acquired EMAS certification in Europe in fiscal 2001**

| Name of the business site | Location | Business details | Date of certification |
|---|---|---|---|
| Honda of the U.K. Mfg., Ltd. | U.K. | Manufacturing, repair and distribution of automobiles, and production of engines for automobiles developed jointly with other companies | December 2001 |
| Honda Europe Power Equipment S.A. | France | Manufacturing of lawnmowers and tillers | March 2002 |

* Within the extent covered by this Environmental Annual Report

Note) For the details of the certified business sites, please refer to the domestic and international data for each business site provided at the end of the report (pages 47 to 54).

# 5 Environmental Training

## 1. Stratified Environmental Training Programs

Training programs are provided for company employees at different levels so that all members of the company have a full recognition of their own position and are able to make progress in the company's commitment to the environment as an integral part of their own work tasks. Environmental Training Programs are part of the company's training curriculum, including the initial training offered to employees who have been working for the company for 2 to 8 years, and the training programs conducted for staff members newly appointed to managerial positions as a part of personnel development programs.

The objective of the training programs for new employees is "to generate a proper understanding of Honda's commitment to environmental issues and train them to behave with a sense of environmental awareness within the context of their jobs after assignment to individual departments." The objective for staff members appointed to managerial positions is "to ensure the practical deployment of environmental efforts from the standpoint of management." Furthermore in fiscal 2001, we revised the basic training programs to give fuller weight to environmental aspects. These programs had been provided mainly to younger employees at our production sites to convey our corporate philosophy and to develop individual career.

In fiscal 2002, we added an environmental course to our Aoyama Open College, which is a training course to provide those who want to learn more with the place and opportunity and to support them in developing their career.

## 2. Environmental Training Based on the Environmental Management System

Every factory and office develops plans for education and training programs conducted on the basis of the environmental management system, and holds regular training events for general personnel, operators who are engaged in specially designated works, and internal environmental auditors.

# 6 Environmental Communication

As an integral part of our environmental management commitment, Honda engages in a wide range of communication activities to enhance mutual understanding between the many persons involved in our corporate activities such as our customers and the regional communities close to Honda's factories and offices. We also provide a range of environmental information to the general public through the media, events, and so on.

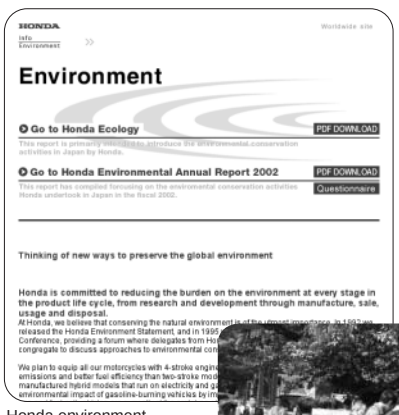
## 1. Establishment of a Liaison Section

Liaison Sections are set up based on the environmental management system to coordinate communications at the local level in dealing with opinions and requests from residents in the community. Every factory and office also organize Environmental Exhibitions as part of their symbiosis activities with the local communities in which they operate.

## 2. Dissemination of Environmental Information through the Media, Events, and so on.

Honda discloses environmental information related to its corporate activities by the following means:

| | |
|---|---|
| Brochures | • Honda Environmental Annual Report (Environmental Annual Report)<br>• Honda Ecology (Description of environmental commitment)<br>• Publication of other booklets on environmental topics |
| Internet | • Honda Web Site world.honda.com/environment/ (Disclosure of a full range of environment-related information, including the above brochures.) |
| Facility | • FAN FUN LAB www.honda.co.jp/fanfunlab/ (Environment-related exhibition at the Twin Ring Motegi facility)<br>• HELLO WOODS www.honda.co.jp/hellowoods/ (Field events letting participants experience nature through play in which nature at the Twin Ring Motegi is a key element) |
| Event | • Cooperation with environmentally-friendly vehicle fairs etc. (Positive participation in various events organized by central and local government authorities and by companies)<br>• Holding environmental exhibitions<br>• Presentation Events for the announcement of new vehicles and/or new technology |
| Advertising | • Corporate Advertising (e-TECH)<br>• Product Advertising/product catalogues |



Honda environment Web site


Environmentally friendly vehicle fair

# 7 Environmental Risk Management

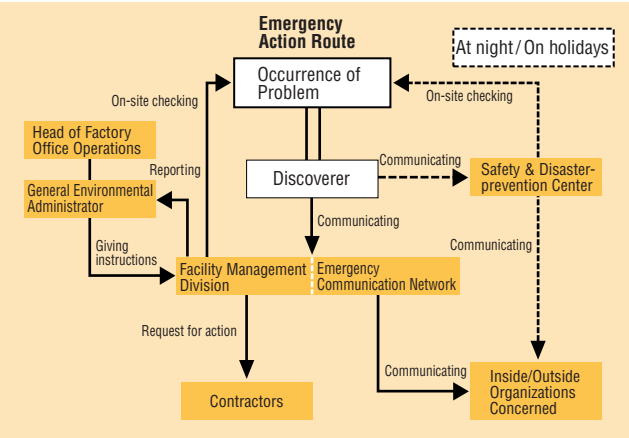
## 1. Product Recalls

The company's policy on product recalls is in accordance with the statutes of Honda's Quality Committee. In the course of fiscal 2001, we notified the Ministry of Land, Infrastructure and Transport of Japan of an environment-related product recall as follows.

| | |
|---|---|
| Common name | CR-V |
| Model | LA-RD5 |
| Number of vehicles to be recalled | 1,997 (those manufactured during the period from September 5, 2001 to December 26, 2001) |
| Defect | For the VSA (Vehicle Stability Assist)-equipped vehicles, because of the improper control program of the engine control computer, the air-fuel ratio control function does not properly function and as a result, the emission gas does not meet the emissions standards of Japan. |
| Improvement | To replace the engine control computer with non-defective one |
| Measures to make the users and overhauling companies aware of the defect | For users, we notified them of the defect by direct mail. For overhauling companies, we notified them of the fact through the bulletin published by Japan Automobile Service Promotion Association. |

## 2. Compliance with Legal Acts and Regulations/Action in Emergencies

All factories have an ongoing commitment to environmental improvement activities in accordance with the Management System Standards laid down in ISO14001. For all environmental aspects, the company has established and strictly abides by its own voluntary standards that are more stringent than the national or regional regulations. In accidents or emergencies liable to cause environmental pollution, individual factories and their individual departments have clearly-defined procedures and priorities to prevent or mitigate pollution Daily activities include regular emergency drills and training events to acquire and improve competence in accident and emergency defense procedures.




- There were no environment-related lawsuits filed against Honda in fiscal 2001.
- There were two complaints about the noise of construction works. We took immediate actions to correct the problem and followed the matter up by again cautioning the internal staff and the constructors. From now on, we will check the construction plan in advance and conduct onsite inspection to prevent such complaints to be made again.
- There were no environment-related emergencies in fiscal 2001.

## 3. Measures to Prevent Soil and Underground Water Pollution

### 1) Past measures

At each of Honda's factories, soil and underground water have been surveyed and monitored to check for harmful substances in them based on the idea that "symbiosis with local communities" is important. These activities are conducted as part of the Green Factory activities at the observation wells established within the premises of the factories. As a result, it is confirmed that harmful substances used at the factories have never been emitted beyond the boundaries of the premises.

### 2) Survey conducted in fiscal 2001

In fiscal 2001, the following surveys were conducted at the factories in Japan:

- At the Saitama Factory's Wako Plant, cyanogen and trichloroethylene that exceeded the environmental standards of Japan were detected respectively in soil and underground water and in underground water. In the Saitama Prefectural Government's survey subsequently conducted on underground water, no such harmful substances were detected outside of the Plant.
- At the Suzuka Factory, benzene, cyanogen and hexavalent chromium that exceeded the environmental standards of Japan were detected in underground water. In the Mie Prefectural Government's survey subsequently conducted on underground water, no such harmful substances were defected outside of the Factory.
- At the Tochigi Factory's Mohka Plant, trichloroethylene and tetrachloroethylene that exceeded the environmental standards of Japan were detected. The Plant, however, has never used these substances.
- Our factories in Japan other than those listed above met the environmental standards of Japan for soil and underground water.
- Please see page 52 for the factories' underground water-related data.

### 3) Present measures to prevent pollution and to purify soil and underground water

- The Saitama Factory's Wako Plant is continuously preventing the emission of trichloroethylene to the exterior of its premises by the use of the purification devices installed at the sources of pollution and at the boundaries of its premises. For cyanogen, it is continuously preventing the emission to the exterior of its premises by the use of the pumping wells installed at the boundaries and has implemented the measures to prevent the substance from being dissolved into soil. The Plant will implement the measures to make the substances permanently harmless by heat decomposition of the polluted soil by March 2003 and will continuously monitor the substances on a regular basis.
- The Suzuka Factory treats the underground water containing benzene by aeration at its wastewater treatment plant. It also treats wastewater containing hexavalent chromium and cyanogen by flocculating setting as well as by biological treatment. The Plant will also implement the measures to make the substances permanently harmless by heat decomposition of the polluted soil by March 2003 and will continuously monitor the substances on a regular basis.

### 4) Future measures

As described above, the polluted soil at the Saitama Factory's Wako Plant and at the Suzuka Factory will be purified by the end of March 2003. Besides at other factories, surveys and monitoring on soil and underground water will be promoted also at places where harmful substances are not used.

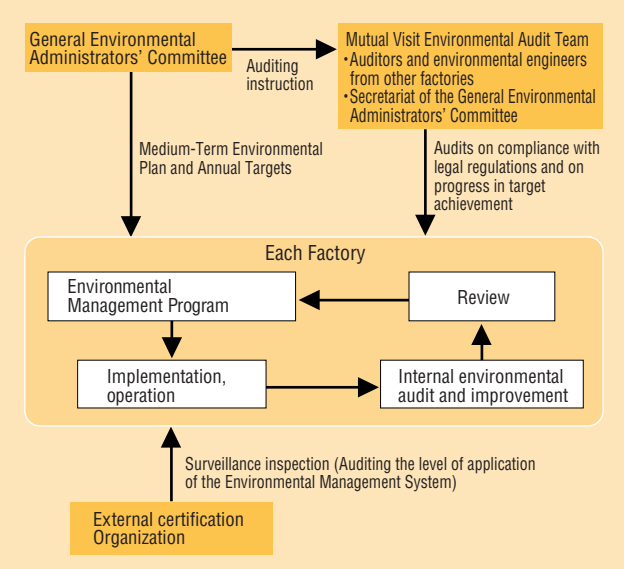
At some of Honda's factories, treatments containing lead, hexavalent chromium and cyanogen are used in the production process. The use of lead and hexavalent chrorium will be discontinued by the end of March 2003, but surface treatments containing cyanogen will be continuously used, paying careful attention for pollution prevention. We will, however, examine alternatives to discontinue the use of cyanogen as early as possible.

### 5) Information disclosure

We notified the survey results on soil and underground of the Saitama Factory's Wako Plant and of the Suzuka Factory respectively to Saitama and Mie Prefectures and voluntarily announced the results to the general public. Besides we gave explanations about the results to local citizens through local community groups. The Saitama Factory's Sayama Plant notified the results of the survey on its soil and underground water to Saitama Prefecture, proactively responding to the Prefecture's request. We also voluntarily announced the survey results of other factories on our Web site.

For soil and underground water situations at Honda's factories, please access:
**www.honda.co.jp/environment/topics/c020528/c020528.html** (Japanese only)

## 8 Environmental Audits




Environmental conservation activities at individual factories are carried out in accordance with the environmental management program of each factory on the basis of the Medium-Term Environmental Plan and Annual Targets determined by the General Environmental Administrators' Committee. To confirm that the environmental management system is appropriately implemented through these activities and continuously improved, internal environmental audits and surveillance inspections by external certification organizations are carried out in our factories and offices.

The internal environmental audits conducted in fiscal 2001 led to a total of 343 cases of minor recommendations and advices. The external inspections led to 2 minor recommendations and 15 findings. We promptly responded to these recommendations and comments. Furthermore, the "Mutual Visit Environmental Audit" is carried out in factories to confirm the level of progress made by them in achieving their targets of environmental conservation activities. (The targets of factories are determined on the basis of the compliance with the legal regulations and company's policy.) The Mutual Visit Environmental Audit is conducted by engineers and auditors from other factories in accordance with instructions given by the General Environmental Administrators' Committee. In fiscal 2001, the Mutual Environmental Audit was conducted from May to June.

# 9 Promotion of Life Cycle Assessment (LCA)

Honda launched the LCA Project in June 2000 and built the Honda LCA System to quantify the environmental impacts of Honda's products throughout their life cycles and of its business activities.

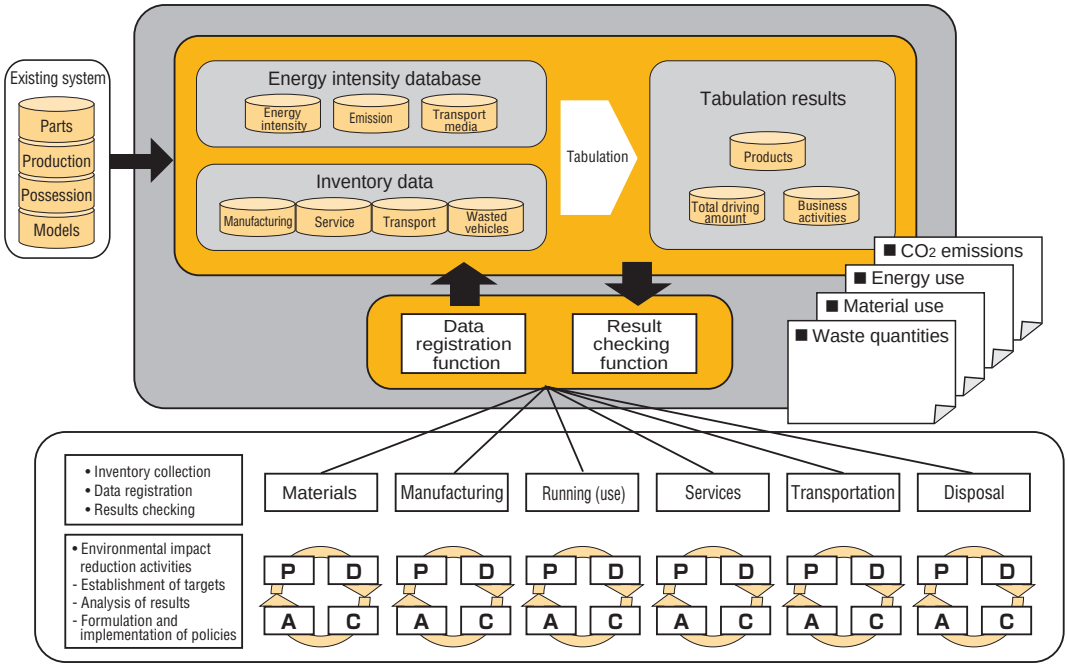
The LCA System enables us to quantify the environmental impacts of our products throughout their life cycles, from the preparation of materials and production to waste disposal. Thereby we can set environmental impact reduction targets. From now on, regarding our products and business activities, we will further improve the environment and reduce the use of substances that will impose environmental impacts.

The Honda LCA System is comprised of the Honda LCA Data System and the Honda LCA Management System. These systems can be applied commonly to motorcycles, automobiles and power products and each department can reduce its environmental impacts directly based on the collected environmental impact data.

For the specific examples regarding the use of the Honda LCA System, we compared the $CO_2$ emissions of CIVIC FERIO and CIVIC Hybrid throughout their entire life cycles and confirmed that CIVIC Hybrid had environmental improvement effects. CIVIC Hybrid is equipped with special parts such as IMA and batteries, and regarding materials and the production process, its $CO_2$ emissions are greater than those of the traditional CIVIC FERIO. In the process of actual use, however, $CO_2$ emissions from CIVIC Hybrid are remarkably smaller because of the improved fuel economy.

As a result, the $CO_2$ emissions throughout the life cycle of CIVIC Hybrid were by approximately 25% smaller compared with CIVIC FERIO.

◆ Honda LCA System

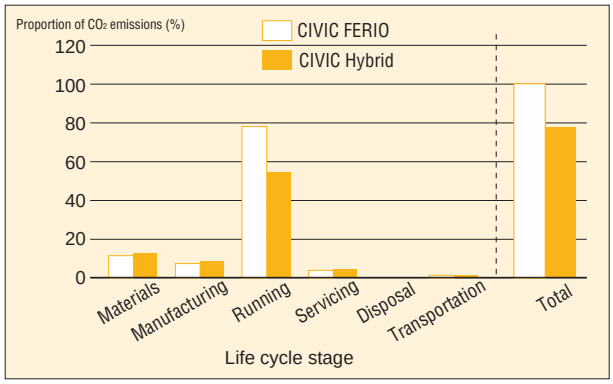



◆ LCA-targeted vehicles

| Name | | CIVIC FERIO | CIVIC Hybrid |
|---|---|---|---|
| Vehicle weight | | 1,070kg | 1,190kg |
| Fuel economy* (10·15 mode) | | 16.2km/ℓ | 29.5km/ℓ |
| Emissions gas concentration | CO | 0.60 | 0.50 |
| | HC | 0.02 | 0.02 |
| | NOx | 0.02 | 0.02 |

* In the LCA, the fuel economy is calculated based on actual fuel efficiency.

◆ CIVIC FERIO/CIVIC Hybrid $CO_2$ emissions



# 1 Products Domain

Honda accepts a firm commitment to environmental action at those running (usage) stages in the life cycle of its products at which they are liable to produce the greatest environmental load. In 1999, Honda announced its "specific targets to be achieved by 2005 with the improvement of clean exhaust gas and fuel economy" for its automobiles, motorcycles and power products respectively. Honda is now in the process of working towards achieving these targets.

## Automobiles

Besides achieving cleaner exhaust gas and improved fuel economy for Honda automobiles, efforts are under way to improve the recyclability of the products themselves, and to reduce the use of harmful substances such as lead in their production.

### Main targets for and achievements in fiscal 2001 in Japan

**Targets**

- Expansion of "Excellent" low emission vehicles and "Ultra" low emission vehicles by the Ministry of Land, Infrastructure and Transport, and improvement in average fuel economy by category
- Improving the recyclability

**Achievements**

- Additional approval for 12 models as "Excellent" low emission vehicles (Total: 27 models), 3 models as "Ultra" low emission vehicles (Total: 4 models) by the Ministry of Land, Infrastructure and Transport
- Average fuel economy of the 6 categories: Improvement in all of the categories and satisfaction by 5 categories of the target values for fuel economy set for fiscal 2010
- Recyclability of 90% or higher (all new models and fully changed models in fiscal 2001)

## 1 Achieving Cleaner Exhaust Gas

### Progress in the Targets to be Achieved by 2005 with Cleaner Exhaust Gas

Honda has given high priority to cleaner exhaust gas emissions in gasoline-powered vehicles, which are the most popular vehicles on the road. We have worked to reduce emissions such as carbon monoxide (CO), hydrocarbons (HC), and nitrogen oxides (NOx) contained in the exhaust gas.

#### Targets

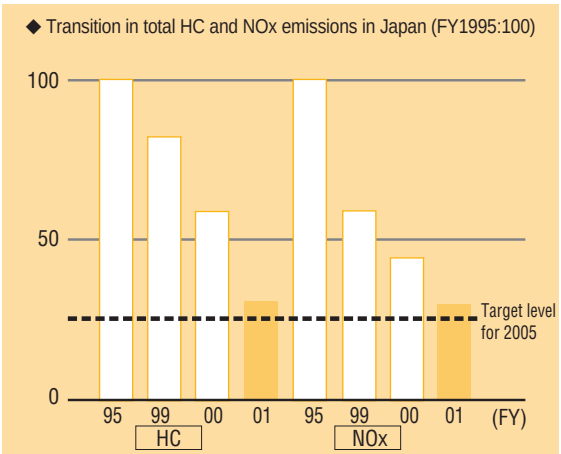
- Up to fiscal 2005 : To reduce the total exhaust emissions of HC and NOx by approximately 75% for new vehicles (compared with fiscal 1995)*1
- Up to fiscal 2002 : To achieve a clean performance that exceeds the 2000 exhaust emissions standards of Japan by 50% or more for all vehicles

#### Progress

As a result of our efforts described later, we were able to achieve the following progress in fiscal 2001.

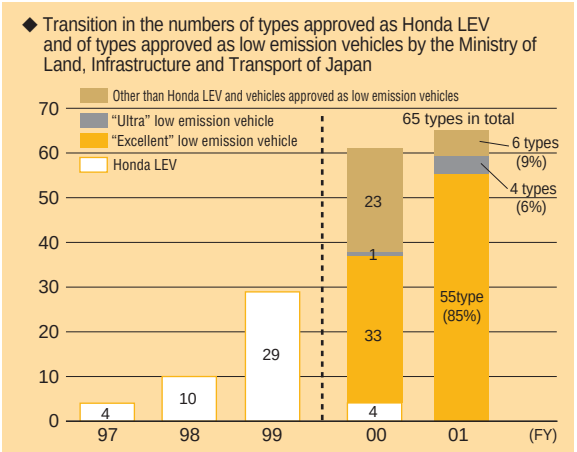
- Total HC emission level: Reduced by approx. 70% (as compared with 1995)*2
- Total NOx emission level: Reduced by approx. 71% (as compared with 1995)*2

◆ Transition in total HC and NOx emissions in Japan (FY1995:100)




- Types with a performance capability of achieving emissions of 50% or more below the 2000 exhaust emissions standards of Japan 91% of all types sold*2.
  (the Honda LEV*3 and "Excellent" or "Ultra" low emission vehicles under "the Low Emission Vehicles' Approval System of Japan" *4 of the Ministry of Land, Infrastructure and Transport)

◆ Transition in the numbers of types approved as Honda LEV and of types approved as low emission vehicles by the Ministry of Land, Infrastructure and Transport of Japan



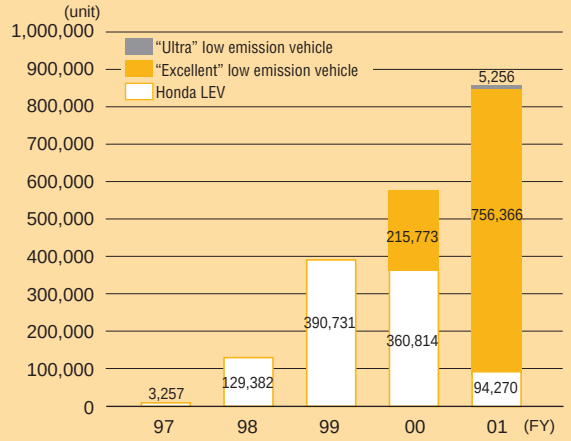

Note 1) Percentage calculated based on the total emission of types regulated by the 2000 exhaust emissions standards
Note 2) For fiscal 2000 (the year following the first announcement of the targets) and fiscal 2001, the numbers of types classified as "other than Honda LEV and vehicles approved as low emission vehicles" are shown.

*1 Target applicable to Japan
*2 Results in Japan (excluding mini trucks)
*3 Honda LEV: Low emission vehicle (LEV) developed by Honda, which are equipped with low emission engines and reduces the emissions of CO, HC and NOx to 10% of the 1978 exhaust emissions standards of Japan. Based on its own standards, Honda qualifies some of its vehicles as Honda LEV.
(Presently, however, we do not classify our new models as Honda LEV and instead classify them under the Low Emission Vehicles' Approval System of Japan started by the Ministry of Land, Infrastructure and Transport.)

*4 In order to give greater impetus to the use of low emission vehicles, the Ministry of Land, Infrastructure and Transport of Japan has instituted this approval system. The low emission vehicles with HC and NOx emission levels below the 2000 exhaust emissions standards are classed into 3 categories for approval.
25% reduction on the standards: "Good"
50% reduction on the standards: "Excellent"
75% reduction on the standards: "Ultra"

## 1. Models/Types and Sales Results for Honda LEV and Vehicles Approved as Low Emission Vehicles by the Ministry of Land, Infrastructure and Transport of Japan

◆ Transition in the sales results in Japan




Note) Figures quoted for the years prior to the establishment of the "Low Emission Vehicles' Approval System of Japan" (FY1987–1999) refer to the Honda LEV conforming vehicles.

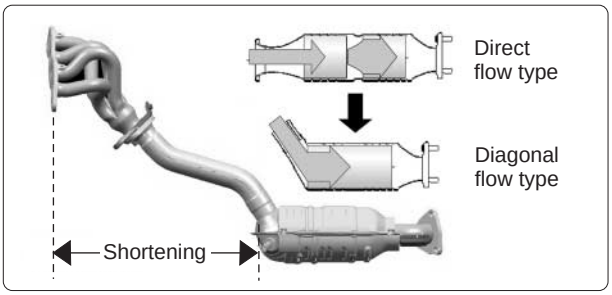
Honda has endeavored to expand the number of models approved under the Low Emission Vehicles' Approval System by the Ministry of Land, Infrastructure and Transport of Japan. The models released in fiscal 2001 were all approved as low emission vehicles under the system, including the approval of CIVIC (Types B and G), CIVIC FERIO (Type C) and CIVIC Hybrid. A total of 855,892 of Honda LEV and of vehicles approved as low emission vehicles were sold in fiscal 2001, accounting for approximately 96% of Honda's total sales in Japan.

◆ Models released in fiscal 2001 were approved as low emission vehicles

| "Ultra" low emission (☆☆☆) ・・・3 models | | |
|---|---|---|
| CIVIC (Types B and G) | CIVIC FERIO (Type C) | CIVIC Hybrid |

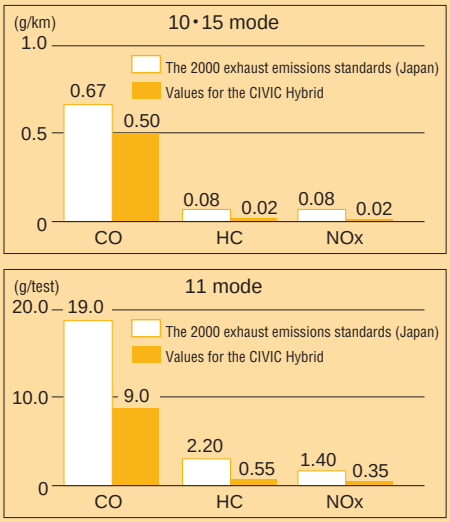
| "Excellent" low emission (☆☆) ・・・12 models | | | |
|---|---|---|---|
| CR-V | INSPIRE | STEP WGN | Fit |
| HR-V | INTEGRA | SABER | MOBILIO |
| That's | CIVIC TYPE R | VAMOS | LIFE |

## 2. Improvement in the Emission Performance of Honda's Main Models




Diagonal flow converter catalyzer

◆ Clean emission levels achieved with CIVIC Hybrid




Fit, released in June 2001, was approved as an "Excellent" low emission vehicle by the Ministry of Land, Infrastructure and Transport of Japan. The catalyzer purifying air pollutants in exhaust gas is activated at a certain temperature. For Fit, the rear exhaust system is adopted to reduce the distance to the catalyzer and the volume to reduce the heat loss of the exhaust gas. By these measures, the catalyzer is activated more promptly, thereby improving the purifying performance at cold start. Furthermore, we have adopted the diagonal converter catalyzer, which purifies exhaust gas more efficiently than the direct converter catalyzer because of the increased contact of exhaust gas with the catalyzer's cell surface achieved by diagonal flow.

### Other technologies adopted

- Rapid combustion by the i-DSI system
- Reduction of HC at cold start by the adoption of the highly atomizing injector
- Reduction of NOx by the electric-motored EGR*1

CIVIC Hybrid, released in December 2001, adopts the high-density 900 cells catalyzer and Honda's unique lean-burn*2 NOx-absorbing catalyzer and is approved as "Ultra" low emission vehicle by the Ministry of Land, Infrastructure and Transport of Japan.

*1 Exhaust Gas Recirculation: By returning part of exhaust gas to the mixed gas to be inhaled to the cylinder, the combustion temperature is lowered and NOx is reduced.

*2 Lean-burn refers to combustion of lean mixture. This technology is to burn the fuel in a mixture of air-fuel ratio higher than theoretical ratio to operate the engine.

# 1 Products Domain

## 2 Improvement in Fuel Economy

### Progress in the Targets to be Achieved by 2005 with the Improvement of Fuel Economy

Honda has introduced various technologies for improving fuel economy as a way of reducing $CO_2$ emissions that are responsible for global warming. In fiscal 2001, Fit with its 1.3-Liter i-DSI engine topped its class with a fuel economy of 23.0 km/ℓ (10·15 mode).

#### Targets

▶ Up to fiscal 2005 : To achieve the new fuel efficiency standards of Japan for fiscal 2010 for all weight categories

▶ Up to fiscal 2005 : To improve the average fuel economy by approximately 25% (compared with fiscal 1995)*1

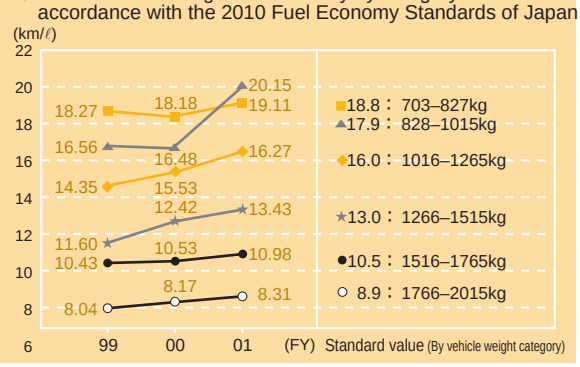
*1 Targets for Japan

#### Progress

As a result of the efforts described later, we were able to achieve the following progress in fiscal 2001.

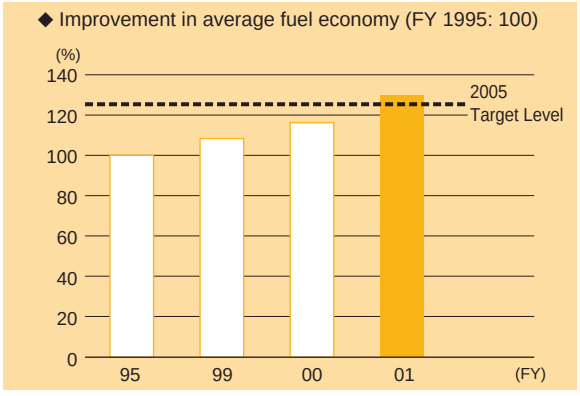
▶ Categories for which the 2010 Fuel Economy Standards of Japan were reached:
... Attained in five out of the six vehicle weight categories concerned.

◆ Transition in average fuel economy by category in accordance with the 2010 Fuel Economy Standards of Japan




▶ Average fuel economy ... improved by approximately 30% (as compared with 1995)*2, leading to the achievement of the target of "25% or more" in fiscal 2001

◆ Improvement in average fuel economy (FY 1995: 100)

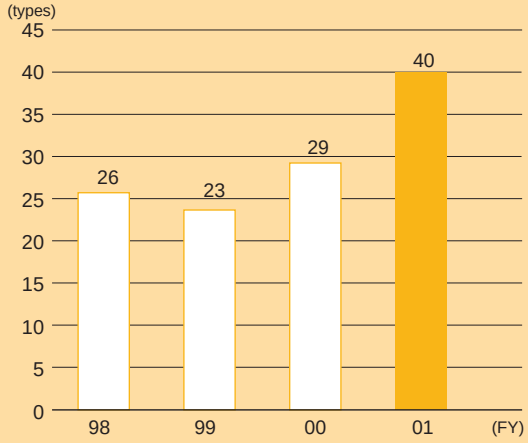



*2 Average fuel economy in Japan (gasoline-fueled passenger motor vehicle)

### 1. Types/Shipment Results Conforming to 2010 Fuel Economy Standards of Japan*

* For fiscal 2001 and onwards, we have decided to report the shipment results, instead of the sales results, based on the notifications made to the Ministry of Land, Infrastructure and Transport and to the Ministry of Economy, Trade and Industry of Japan.

◆ Transition in the number of types meeting the fiscal 2010 targeted values for fuel economy of Japan




Note) In this report, the number of types sold as of the end of each fiscal year is reported instead of the cumulative numbers.

In accordance with the amendment of the Energy Saving Law of Japan, the fiscal 2010 targeted values for fuel economy of Japan were announced. Honda is making efforts to increase the types that exceed the values. For types sold in fiscal 2001, 8 types meet the standards. (See the table below.) The number of the vehicles meeting these standards that were shipped in fiscal 2001 was 709,714, approximately 79% of all Honda vehicles shipped within Japan.

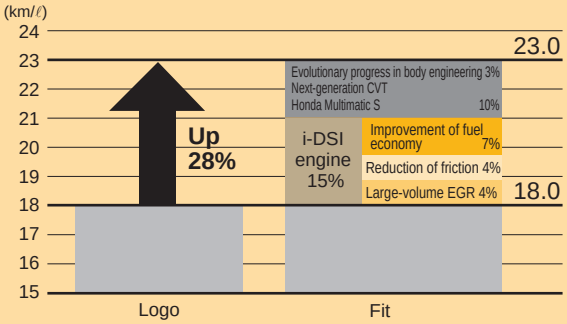
◆ Models that were released in fiscal 2001 and meeting the standards

| Models | Types meeting the standards |
|---|---|
| CIVIC HYBRID | All the types |
| CR-V | All the types |
| That's | That's FF |
| STEP WGN | All the types |
| VAMOS* | 2WD MT |
| Fit | All the types |
| MOBILIO | All the types |
| LIFE* | All the types excluding the 4WD 3-speed AT type |

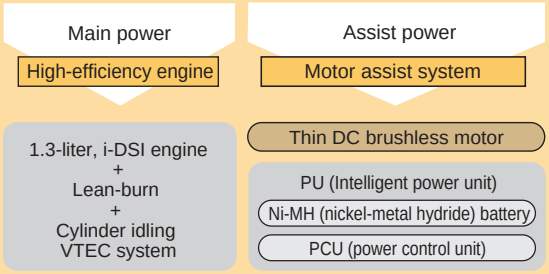
* For the models, types meeting the standards were added at the time of minor model change.

## 2. Fuel Economy for Main Models

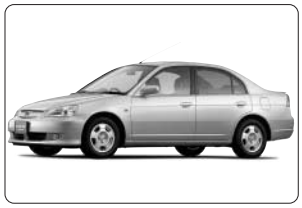
◆ Comparison of Fit and Logo in terms of fuel economy




◆ New Honda IMA System




Fit



CIVIC Hybrid

Fit, released in June 2001, is equipped with the i-DSI engine and has achieved the world's top-class fuel economy of 23.0 km/ℓ (10·15 mode). CIVIC Hybrid, released in December 2001, has also achieved the world's best fuel economy of 29.5 km/ℓ (10·15 mode) in the category of gasoline-powered mass production vehicles for 5 passengers. It is equipped with the new Honda IMA (Integrated Motor Assist) System characterized by the lean-burn i-DSI engine and the cylinder idling VTEC system that achieves highly efficient energy regeneration.

◆ Fuel economy improvement technology adopted for Fit

**Adoption of 1.3-liter, i-DSI engine**

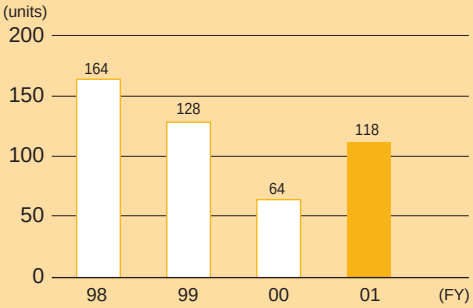
- Almost perfect combustion technology
  Compact combustion chamber + DSI timing control by twin plugs
- Reduced friction loss
  - Offset crank
  - Reducing friction by applying molybdic sulfide fine powders to the piston skirt surface

**Adoption of the next-generation CVT Honda Multimatic S**

Greatly improving the transmission efficiency by the wider pulley ratio as well as by the higher precision of hydraulic control

# 3 Alternative Energies

◆ Transition in sales of the CIVIC GX in Japan



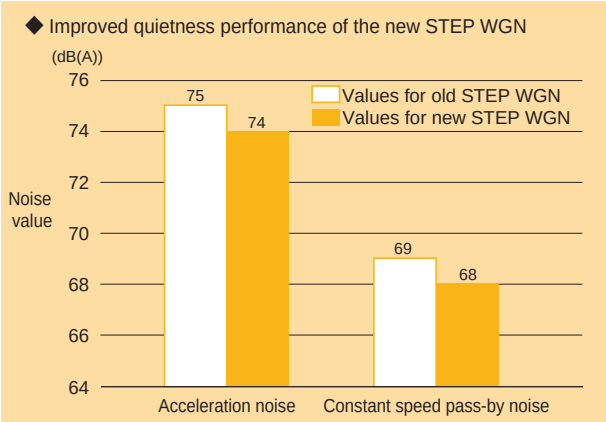

### Natural Gas Vehicle

The sales of CIVIC GX, powered by natural gas, which is more abundantly available and exhausts cleaner gas, were 118 vehicles in fiscal 2001.

# 1 Products Domain

## 4 Noise Reduction

### 1. Measures for Noise Reduction




Honda also focuses on the development of technology to reduce exterior noise. Such noise sources as the intake and exhaust noise and engine noise are responsible for most of the exterior noise. The new STEP WGN that was released in April 2001 has benefited from the following technologies to achieve a major reduction in exterior noise.

#### Reduction in engine noise

- Improved mounting stiffness of the main journal* of the crankshaft
- Adoption of "silent chains" (low-noise chains) for the timing belt
- Improved rigidity of the cylinder block

#### Reduction in noise from the air intake/exhaust system

- Adoption of large-capacity air cleaner with an integrated silencer
- Use of large-capacity exhaust pre-chamber (assist silencer)

#### Reduction in relation to the body

- Expanded use of sound absorbing materials within the engine room

* Main journal: positioned on the main crankshaft and contacts with the bearing

## 5 3R (reduce, reuse and recycle) Design

### 1. Advanced 3R Evaluation System

In fiscal 2001, we improved the traditional advanced recycling evaluation system to enable the 3R design, and started to implement the improved system for That's and MOBILIO.

### 2. Design for Reduction* 

* Reduce the generation of waste

For MOBILIO, we are implementing the following design for reduction.

#### ① Measures for weight reduction

| Construction modification |
|---|
| Engine block, engine head |
| Transmission ASSY. |
| ABS modulator |
| Power steering (electronic motored) |
| Rear suspension (H beam type) |

| Material changes |
|---|
| Application of high tension steel to road wheels |
| Adoption of magnesium to steering wheel core bars |
| Use of resin for the engine intake manifold |

#### ② Longer lives of consumables

| | |
|---|---|
| Engine oil | 10,000km → 15,000km |
| LLC (long life coolant) | Interval: 3 years → 11 years |
| Oil filter | 20,000km → 30,000km |
| ATF | Interval: 40,000km → 80,000km |

## 3. Design for Recyclability

By taking various measures as shown below, we have made it possible to be recycled for 90% or more of the materials used for new models and changed models released in fiscal 2001.

### 1) Design for easier dismantling

① Example of construction modification (MOBILIO)

| |
|---|
| Reduction (to one screw) of the screws to attach the front damper |
| Integration of the case and resonator of the air cleaner ASSY. |
| Reduction of the body attachment points from four to two by the H beam type rear suspension |

② Example of integrated parts

| That's | MOBILIO |
|---|---|
| Rear drum brake | Rear drum brake |
| Wheel | AC generator |
| Brake disk | Oil pump |
| Drive shaft | Water pump |
| Oil pump | |
| Water pump | |

### 2) Standardization of resin materials (Promotion of olefin resin)

| Standardization of resin materials (Promotion of olefin resin) | |
|---|---|
| Pillar garnish | Bumper |
| Instrumental panel | Cowl top |
| Inner fender | Others |

For all of the new models and changed models released in fiscal 2001, highly recyclable olefin resins are used for injection molded interior parts. Besides all resin parts weighing 5 g or more and large enough to affix a display are provided with a material mark.

### 3) Use of recycled materials (resins)

In fiscal 2001, we used recycled resins for That's (0.5 kg) and for MOBILIO (1.6 kg) and will further increase the use of recycled materials.

# 6 Reduction in Substances with Environmental Impacts

## 1. Reduced Use of Lead

Honda is making progress in reducing its use of lead. The new models released in fiscal 2001 used 1/3 or less lead than was used in 1996.

The cutback in lead use is the result of the following efforts.
- Adoption of lead-free special steel crankshafts
- Adoption of resin fuel tanks
- Stopping the use of lead in ceramic print on glasses

## 2. Reduction in HFC134a

We developed an air conditioner reducing the use of HFC134a by approximately 10% as compared with the fiscal 1995 level and adopted it for 7 models in 2001.

For air conditioners using no HFC134a, we are now making examinations for their practical use.

# 1 Products Domain

## Motorcycles

In the motorcycles area, we have made further progress in expanding the use of 4-stroke engines to give cleaner exhaust emissions. We have also made efforts to introduce new technologies to improve fuel economy. Our environmental commitment has also focused on reducing the use of harmful substances such as lead.

**Main targets and achievements for fiscal 2001 in Japan**

**Targets**
- Expanded use of 4-stroke engines
- Improved fuel economy for new models

**Achievements**
- Adoption of 4-stroke engines for 12 models (4-stroke motorcycles as a percentage of all motorcycles manufactured by Honda: 69.1%)
- ZOOMER, Bite, DioZ4: 75 km/ℓ on constant speed fuel economy at 30 km/h

## 1 Achieving Cleaner Exhaust Gases

### Progress in the Targets to be Achieved by 2005 for Cleaner Exhaust Gases

**Targets**

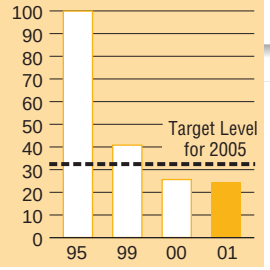
▶ Up to fiscal 2005 : To reduce total exhaust emissions of HC* to approximately 1/3 for new vehicles (compared with fiscal 1995)

*Total for Japan, the US, the EU, and Thailand

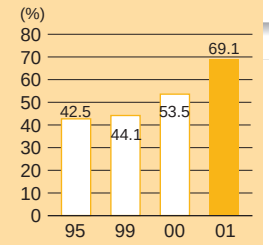
**Progress**

▶ In fiscal 2001, the percentage of 4-stroke motorcycles in Japan from all motorcycles manufactured by Honda increased to 69.1%, and as a result, HC emissions from new Honda motorcycles were reduced to approximately 1/4 of the level in 1995 (down by approximately 76%). Accordingly, overall HC emissions from Honda motorcycles in Japan were reduced to approximately 20% of the fiscal 1995 level.

◆ Transition in total HC emissions (FY)

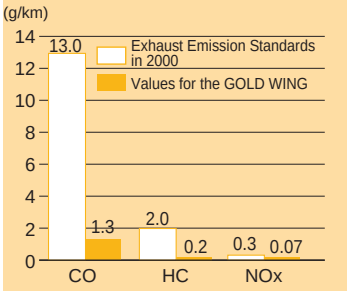



◆ Percentage of models with 4-stroke engines (in Japan)




### 1. Improvements in Emission Performance of Honda's Main Models

◆ Clean emission levels achieved with the GOLD WING




GOLD WING

The GOLD WING, a new model released in August 2001 and the VFR, released in January 2002, both reached clean emission levels equal to 1/10 (CO and HC) and 1/4 (NOx) of the exhaust emissions standards of Japan. This was achieved by adopting the following technologies.

- Use of a ternary catalytic converter, the HECS3*1
- Use of PGM-FI (an electronic fuel injection system)
- Air injection system*2 (a secondary air induction system)

*1 Honda Evolutionary Catalyzing System 3

*2 To enhance the exhaust gas cleaning performance of motorcycles, this system adds external air to the exhaust gas from the engine's combustion chamber so as to combust the unburned gases and thereby reduce the residual levels of carbon monoxide (CO) and hydrocarbons (HC).

## 2 Improvements in Fuel Economy

### Progress in the Targets to be Achieved by 2005 with the Improvements in Fuel Economy

**Targets**

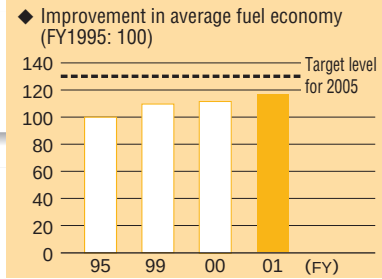
▶ Up to fiscal 2005: To improve average fuel economy* by approximately 30% (compared with fiscal 1995)

* Total average for Japan, the US, the EU and Thailand

**Progress**

▶ In fiscal 2001, the percentage of 4-stroke motorcycles from all the Honda motorcycles manufactured in Japan increased to 69.1%. As a result, we have succeeded in achieving an approximately 18% improvement in average fuel economy compared with 1995.

◆ Improvement in average fuel economy (FY1995: 100)



## 1. Fuel Economy for Main Models

Dio

In fiscal 2001, we increased the number of models using water-cooled 4-stroke 50 cc engines, which are excellent in fuel economy. These engines have already been used for the Dio and the Dio Deluxe, and the following models that are now using this engine have achieved a high fuel economy of 75.0 km/ℓ on constant speed fuel economy at 30 km/h.

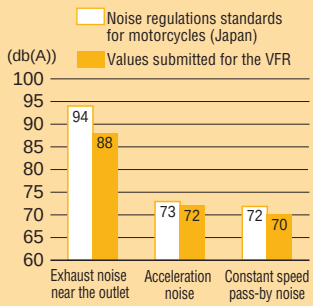
| Models released in fiscal 2001 with water-cooled 4-stroke 50 cc engines | |
|---|---|
| ZOOMER | (released in June 2001) |
| Bite | (released in January 2002) |
| Dio Z4 | (released in March 2002) |

# 3 Noise Reduction

## 1. Efforts to Reduce Noise

For the VFR, released in January 2002, we have achieved a level of quietness that is below the third noise regulation standards of Japan (made stricter in October 2001) by using the following noise reduction technologies.

◆ Quietness performance for the VFR




VFR

### Engine

- With the V4 VTEC engine adopted as the first V4 engine equipped with a valve control system, only two of the four valves in each cylinder are opened and closed at low rpm. This lowers the sound pressure level inside the combustion chamber.
- A silent chain drive is adopted for the camshaft.

### Drive system

- The newly-developed "Silent Cross Chain"* and a drive sprocket developed specially for the chain are utilized.

* Urethane resin rollers are used in combination with the iron rollers on the chain. The use of urethane resin rollers reduces the noise generated when the chain contacts the sprocket.

# 4 3R (reduce, reuse and recycle) Design

## 1. Advanced 3R Evaluation System

Since 1992, Honda has been checking each of its new models with their advanced 3R evaluation system to improve the 3R-related performance.

## 2. Design for Reduction

Luggage box

Since 1997, Honda has been using a special foaming technology for the injection molding process for the luggage boxes of scooters, to reduce the amount of materials used in the process. Following a slight reduction in pressure inside the mold after the skin layer is created, the foaming agent contained in the materials creates a foaming layer inside the product. The technology is also used on the SILVER WING 400 released in 2001, leading to a reduction in the use of materials by 20% (380 grams per luggage box).

## 3. Design for Recyclability

We have expanded the use of aluminum die cast frames, which give excellent recyclability. The recyclability rate for new models exceeds 90% (according to Honda's own criteria).

| Models released in fiscal 2001 that use aluminum die cast frames | |
|---|---|
| ZOOMER | (released in June 2001) |
| Bite | (released in January 2002) |
| Dio Z4 | (released in March 2002) |

# 5 Reduction in Substances with Environmental Impacts

## 1. Reduction in the Use of Lead

Honda had been expanding its use of lead-free brake hoses since 2000 and started using them on all of its motorcycles from fiscal 2001. In addition, we made efforts to stop the use of paints containing lead. See the table on the right for our achievements.

For the CBR954RR released in February 2002, we used lead-free, free-cutting steel*.

* Free-cutting steel: Steel to which other metal elements (usually sulfur or lead) have been added to make cutting easier

| Lead-free electrocoating |
|---|
| Models produced by the Hamamatsu Factory: Transfer to lead-free paints completed January 2002. |
| Models produced by the Kumamoto Factory: Transfer to new lead-free paints completed March 2002. |

| Lead-free finish coating |
|---|
| Models produced by the Hamamatsu Factory: Lead-free paints have been used since 1996. |
| Models produced by the Kumamoto Factory: Transfer to lead-free paints will be complete by December 2002. |

# 1 Products Domain

## Power Products

For Power Products, our environmental commitment is made in anticipation of stricter regulations, in focusing on cleaner exhaust gases and improved fuel economy in all product areas.

**Main targets and achievements for fiscal 2001 in Japan**

| | |
|---|---|
| Targets | ● Anticipating stricter regulations<br>● Improving the fuel economy for new product models |
| Achievements | ● Product types anticipating stricter regulations: 6 types<br>● Improvement in fuel economy for new products: Snowblower HS 1390i (10% improvement over the traditional model) |

## 1 Achieving Cleaner Exhaust Gases

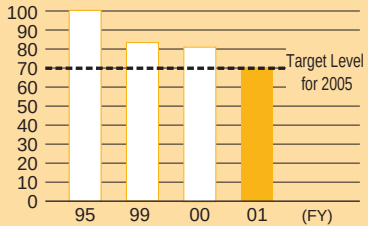
### Progress in the Targets to be Achieved by 2005 with Cleaner Exhaust Gases

**Targets**

▶ Up to fiscal 2005 : To reduce average exhaust emissions* of HC and NOx by approximately 30% for new products (compared with fiscal 1995)

* Average emission levels worldwide

◆ Reductions in total emissions of HC and NOx (FY 1995: 100)

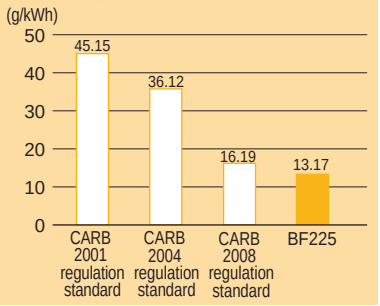



**Progress**

▶ As a result of the efforts we describe later, we were able to achieve an approximately 30% reduction in average HC + NOx emission levels at the end of fiscal 2001, four years earlier than the planned deadline.

### 1. Improvement in Emission Performance of Honda's Main Models

◆ Clean emission levels achieved with the BF225 (HC+NOx)




BF225

With the adoption of the PGM-FI (an electronic fuel injection system), the BF225/200 outboard engine released in November 2001 and the BF175 released in March 2002 have met the criteria set by the following much earlier than planned:

- The EPA Marine Regulations for the Year 2006
- The CARB* Marine Regulations for the Year 2008

The mini tiller "Putina" released in March 2002 uses a 4-stroke OHV engine especially made for the tiller, enabling it to meet the criteria for clean emission gases set forth by the EPA Phase 2 Regulations.

* California Air Resources Board

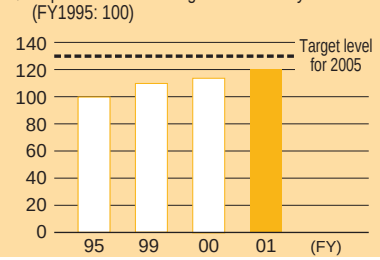
## 2 Improvement in Fuel Economy

### Progress in the Targets to be Achieved by 2005 with Improvements in Fuel Economy

**Target**

▶ Up to fiscal 2005: To improve the average fuel economy by approximately 30% (compared with fiscal 1995)

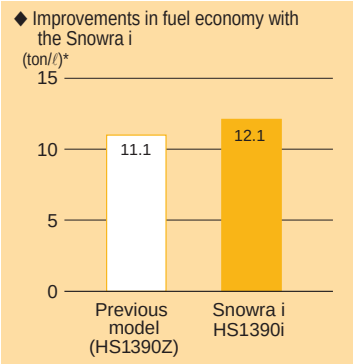
◆ Improvement in average fuel economy (FY1995: 100)




**Progress**

▶ We were able to improve the average fuel economy by approximately 20% at the end of fiscal 2001 as a result of the following efforts.

## 1. Efforts to Improve Fuel Economy




* Amount of snow removed (tons) per 1liter of fuel

Snowra i HS1390i

The snowblower "Snowra i" HS1390i released in November 2001 is the world's first hybrid snowblower: the snowblower apparatus that requires high levels of power is driven by an engine, and the drive part that needs to be carefully controlled is powered by an electric motor. Giving higher work efficiency and smoother operation, the actual fuel economy has been improved by approximately 10% over the previous model.

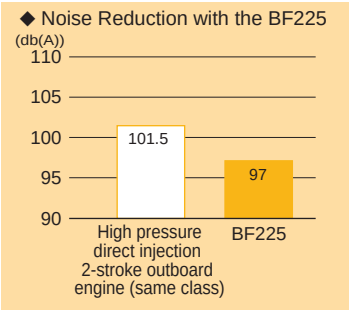
The fuel economy of the BF225, released in November 2001, has been improved by approximately 10% compared with the high-pressure direct injection 2-stroke outboard engine of the same class, by adopting the following technologies:

- Excellent combustion efficiency by the use of PGM-FI (an electronic fuel injection system)
- High-precision control of the air-fuel ratio by the use of the $O_2$ feedback system

# 3 Noise Reduction

## 1. Efforts to Reduce Noise

We achieved noise reductions for the main models released in fiscal 2001 by using the technologies described below.




**Small generator EBR2300CX:**

Top-of-its-class low-noise level (63 dB), reduced by 4 dB (60 Hz) compared with the traditional model

- Use of a 4-stroke OHV engine that reduces mechanical noise, and a large-sized muffler

**Mini tiller FG201 "Putina":**

Top-of-its-class low-noise level of 79.5 dB, meeting the Stage 2 criteria of the 2006 EU Noise Regulations

- Use of a silent muffler

EBR 2300CX

"Putina"

**BF225/200/175:**

Top-of-its-class quietness BF225/200: Noise level reduced by approximately 5 dB compared with a direct injection 2-stroke outboard engine

- V6 engine, large capacity intake silencer, etc.

# 4 Improvement of Recyclability

## 1. Design for Recyclability

Honda's goal is to make 95% of all parts and materials used in product manufacture recyclable by 2004. To make it easier to identify the materials, we are marking all plastic parts, down to the smallest possible size. For BF225/200/175 released in fiscal 2001, we were able to improve the recyclability rate to 94%.

# 5 Reduction in the Use of Substances with Environmental Impacts

## 1. Reduction in the Use of Lead

Honda is promoting the use of lead-free paints and will replace all paints used for power products with lead-free paints within fiscal 2002.

## 2. Reduction in the Use of Other Substances with Environmental Impacts

In December 2001, Honda replaced all paints used for coating the exterior parts of outboard engines with chromium-free paints. We are now examining the replacement of paints used for coating the interior parts of the engine (to prevent corrosion inside the water jacket) with chromium-free paints.

# 2 Purchasing and Production Domain

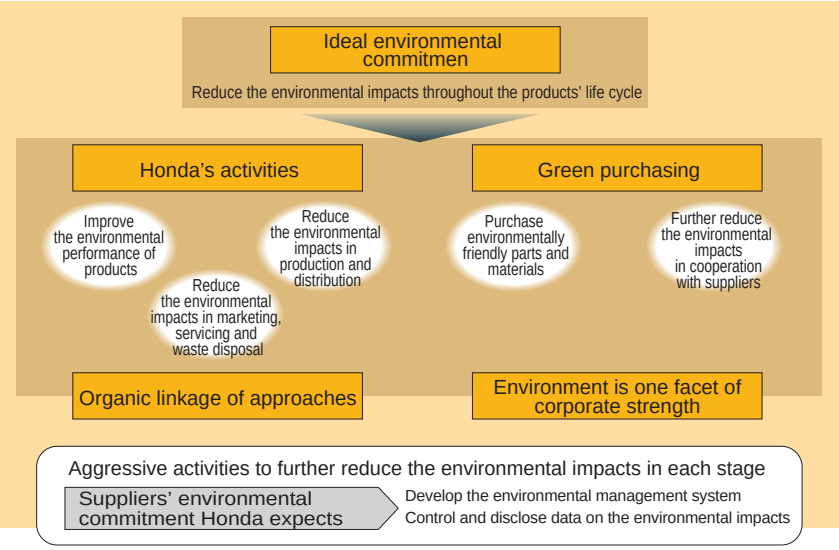
In the Purchasing and Production Domain, Honda is making progress in its Green Purchasing and Green Factory endeavors, in the quest for reduaced energy and resource consumption and zero emissions. By organizing Honda Green Conferences, Honda is trying to spread and share its environmental efforts and know-how on a wider basis.

**Main targets and achievements for fiscal 2001 in Japan**

| | | |
|---|---|---|
| Targets | ● Reduction in $CO_2$ emissions: 480,000 $CO_2$-tons<br>● Incineration of waste: 43% reduction over fiscal 1998 | |
| Achievements | ● $CO_2$ emissions: 488,000 $CO_2$-tons<br>● Incineration of waste: 47% reduction over fiscal 1998 | |

## 1 Promotion of Green Purchasing

### 1. Green Purchasing Guidelines




Honda set its green purchasing guidelines to aggressively promote the green procurement of materials and parts, and in December 2001, Honda held an explanatory meeting on the guidelines targeting suppliers. These guidelines show the specific management items and targets to be dealt with by Honda and its suppliers toward 2010 regarding the following:

1) Products to be purchased by Honda
2) Process by which products are manufactured
3) Corporate system for the environmental management of the manufacturing process

Honda's green purchasing guidelines

◆ Framework of Honda's green purchasing guidelines

| Honda green purchasing | Classification | Management item | Target |
|---|---|---|---|
| Products | Management of chemical substances contained in products (purchased parts) | Content of chemical substances in products (parts and materials) | Compliance with the schedule set forth in Honda's guidelines on chemical substances* |
| Manufacturing | Management of environmental impacts by suppliers | $CO_2$ emission volume | 2010: 6% reduction over 2000 |
| | | Waste amount (reduction of landfill) | 2007: Zero landfill |
| Corporate system | Promoting environmental management systems at suppliers | Further acquisition of ISO14001 certification | 2005: Completion in Japan<br>2008: Completion in other countries |

### [Promoting the Acquisition of ISO14001 Certification by Honda's Suppliers]

In fiscal 2001, Honda worked towards a target of 15 suppliers acquiring ISO14001 certification. This has resulted in certification of 10 companies (16 business sites), and of 55 companies (125 business sites) in total. From fiscal 2002, all suppliers will be encouraged to acquire the certification.

* Honda's guidelines on chemical substances: The guidelines show the schedule for reducing, abolishing the use of, or replacing chemical substances with environmental impacts, including those regulated in Europe (lead, mercury, cadmium, hexavalent chromium) and those voluntarily regulated by Honda.

# 2 Promotion of Green Factories

## 1. Energy and Resource Saving

### Progress in the Targets to be Achieved by 2001 with the Promotion of Energy Saving

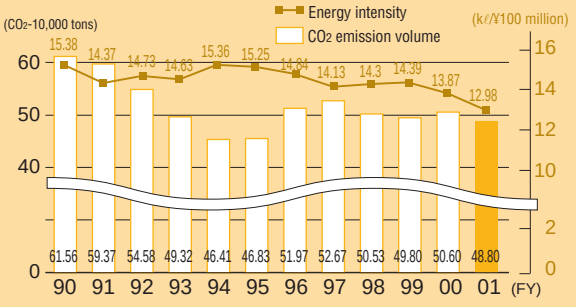
**Target**

▶ To reduce the energy intensity by 15% by 2001 (compared with 1990)

**Progress**

▶ In fiscal 2001, by taking the following measures, we succeeded in achieving the target shown above, reducing the energy intensity to 12.98 kℓ/¥100 million, down 15.6% from the 1990 level.

◆ $CO_2$ emission volume and energy intensity in Japanese factories

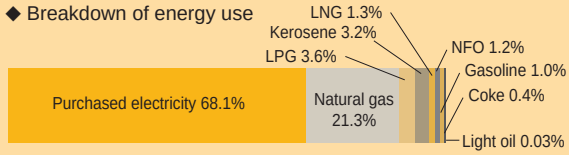



* The values in terms of crude oil do not contain NFO.

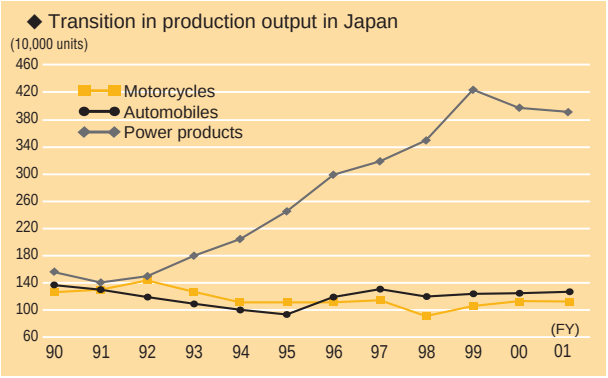
### 1) Energy

Carbon dioxide emissions at Honda factories was 488,000 $CO_2$-tons in fiscal 2001, down 4% from the previous fiscal year (506,000 $CO_2$-tons), and down 21% over fiscal 1990. (See the graph at upper right.) Emissions, however, were larger by 1.7% than the target for fiscal 2001 ($CO_2$ emissions of 480,000 $CO_2$-tons), influenced by an increase of 11% in the production output from the planned production. The energy intensity, the calculation unit for which was changed in fiscal 2000, was 22.1 $CO_2$-tons/¥100 million, down 3.5% from the previous year, thus achieving the target of 22.9 $CO_2$-tons. The following energy saving efforts were also sustained in fiscal 2001.

◆ Breakdown of energy use




◆ Transition in production output in Japan




◆ Energy saving efforts made in fiscal 2001

- Reduction by streamlining production lines
- Simplification of the thermal treatment process by changing the materials for crankshafts
- Reduction in the compressor air pressure
- Reduction in the air flow volume from the air conditioner in the coating booth by introducing inverter control
- Introduction of LNG

At our factories, we will further promote energy saving through LCA activities and the best mix of energies, introducing new energies.

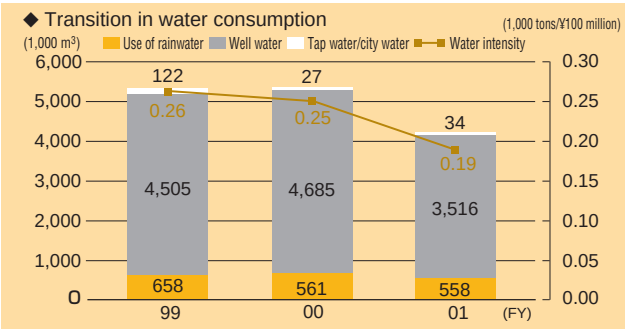
Note 1) $CO_2$ emission volume and water consumption are influenced by changes in the production output.
Note 2) With effect from fiscal 1999, the buggy, that used to be classified as a power product, has been re-classified as a motorcycle.

**The following $CO_2$ conversion factors were used:**

| | |
|---|---|
| Electricity: | 0.404 ($CO_2$-ton/MWh) |
| Natural gas: | 2.015 ($CO_2$-ton/1,000 Nm³) |
| LNG: | 1.174 ($CO_2$-ton/1,000 Nm³) |
| Kerosene: | 2.532 ($CO_2$-ton/kℓ) |
| Gasoline: | 2.246 ($CO_2$-ton/kℓ) |
| Light oil: | 2.576 ($CO_2$-ton/kℓ) |
| LPG: | 3.031 ($CO_2$-ton/ton) |
| NFO: | 2.716 ($CO_2$-ton/kℓ) |
| Coke: | 3.120 ($CO_2$-ton/ton) |

### 2) Resource saving (Water consumption)

◆ Transition in water consumption




Water consumption at the domestic factories in fiscal 2001 totaled 4,108,000 m³, down 22% from the previous year. This resource saving has been achieved by the following measures.

◆ Water saving measures taken in fiscal 2001

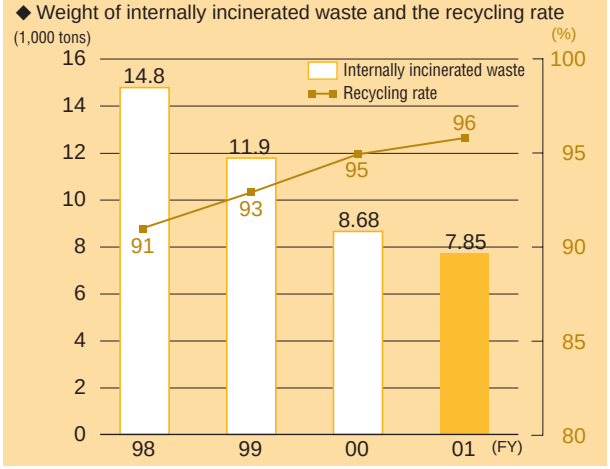
| | |
|---|---|
| Saitama Factory: | Streamlining of the engine plant |
| Suzuka Factory: | Replacement of cupolas with electric furnaces in the molding process |
| Suzuka Factory: | Recycling of washing water used for coating ("zero wastewater") |
| Kumamoto Factory: | Improving the water circulation rate by the use of rainwater |

# 2 Purchasing and Production Domain

## 2. Zero Emissions

### 1) Reduction of waste (By-products)

◆ Weight of internally incinerated waste and the recycling rate




Note) Recycling rate = Recycled amount (resold + passed to recycling companies for charge/free of charge) / Recycled amount + amount internally incinerated + amount externally disposed

◆ Breakdown of waste associated with production activities (units: 1,000 tons)

| Type | Fiscal 1990 | Fiscal 2000 | Fiscal 2001 |
|---|---|---|---|
| External landfill | 18.1 | 0.005 | 0.0 |
| Intermediate external disposal | 8.2 | 0.03 | 0.033 |
| Internal incineration | 17.0 | 8.68 | 7.85 |
| Recycling | 139.6 | 182.02 | 191.93 |
| Total amount of byproducts | 182.9 | 190.74 | 199.81 |

Efforts toward zero external landfill in the last fiscal year were continued at all the domestic factories in fiscal 2001.

We are also making efforts to reduce the total amount of waste and the amount of waste disposed of by incineration.

The amount of waste disposed of by incineration was approximately 8,000 tons, reduced by 47% over fiscal 1998, thus achieving the target of 43% reduction over the fiscal 1998 level. The total amount of waste was approximately 200,000 tons. Influenced by an increase in the production quantity by 6%, metal waste increased by 10%.

From now on, we will further reduce waste incineration by taking drastic measures to sort waste, and will make aggressive efforts to reduce the total amount of waste especially by implementing measures to prevent the generation of waste.

In fiscal 2001, the following measures were taken to reduce waste.

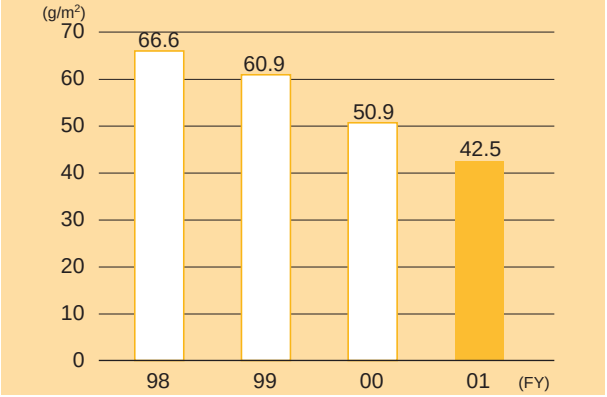
◆ Waste (by-product) reduction measures taken in fiscal 2001

- Reduction of combustible waste by proper sorting of waste
- Reduction of waste from the coating process by increasing the process efficiency

### 2) Prevention of air and water pollution

Air and water quality control are achieved by rigorous monitoring in accordance with our voluntary standards, which are more stringent than the regulations on gas emissions from combustion systems and the regulations on factory effluents. (For measurement results, see Factory Data on pages 47–51.)

◆ Transition in the amount of VOC emissions




In fiscal 2001, the average VOC emissions of the Suzuka Factory and the Saitama Factory, where automobiles are coated, was 42.5 g/m², down 17% from the previous fiscal year. This reduction was achieved by the following measures.

◆ VOC reduction measures taken in fiscal 2001

- Improving the thinner collection rate
- Improving the coating efficiency by installing bell painting machine for metallic coating
- Improving the coating efficiency by introducing robots

The measures implemented for the automobile coating process will also be implemented for the motorcycle and power product coating processes to further reduce the emissions of VOC.

### 3) Chemical emission (PRTR)*

The table on the next page gives the statistical results for fiscal 2001 for the substances falling within the scope of the PRTR Law. The treated amount was approximately 9,950 tons, up about 3% from the previous fiscal year, and the emission levels discharged into the air/hydrosphere amounted to approximately 2,670 tons, down about 5% from the previous fiscal year. (See pages 47–51 for the data for each of Honda's factories.)

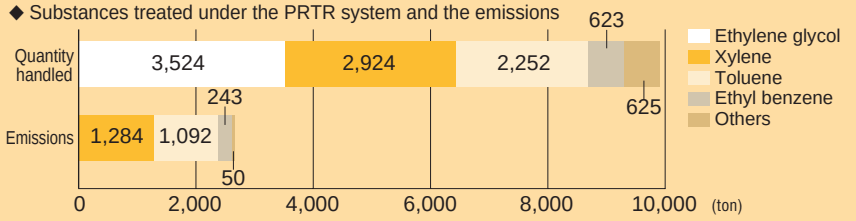
* PRTR: Pollutant Release and Transfer Register

◆ Results of fiscal 2001 survey in Japan by Honda*1

[Units: kg (Dioxins : mg-TEQ)]

| Substance No.*2 | CAS No. | Name of substance | Quantity handled | Released into the air | Released into public water areas | Total released | To sewage | External disposal waste | Recycling *3 | Total transfer amount | Quantity removed | Consumption (shipped amount) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | — | Water-soluble zinc compounds | 76,731 | 0 | 113 | 113 | 92 | 4,135 | 21,699 | 25,926 | 6,858 | 43,834 |
| 16 | 141-43-5 | 2-Amino ethanol | 26,454 | 0 | 0 | 0 | 0 | 0 | 1,230 | 1,230 | 3,253 | 21,971 |
| 30 | 25068-38-6 | Bisphenol A-type epoxy resin | 107,149 | 0 | 0 | 0 | 0 | 2,446 | 370 | 2,816 | 2,389 | 101,944 |
| 40 | 100-41-4 | Ethyl benzene | 623,214 | 242,523 | 0 | 242,523 | 0 | 0 | 137,554 | 137,554 | 26,594 | 216,543 |
| 43 | 107-21-1 | Ethylene glycol | 3,523,728 | 16 | 0 | 16 | 0 | 300 | 4 | 304 | 5,687 | 3,517,721 |
| 44 | 110-80-5 | Ethylene glycol monoethyl ether | 3,845 | 2 | 0 | 2 | 0 | 192 | 0 | 192 | 3,651 | 0 |
| 63 | 1330-20-7 | Xylene | 2,924,414 | 1,283,609 | 13 | 1,283,622 | 0 | 0 | 494,759 | 494,759 | 220,692 | 925,341 |
| 176 | — | Organic tin compounds | 16,230 | 0 | 0 | 0 | 3 | 103 | 328 | 434 | 0 | 15,796 |
| 198 | 100-97-0 | Hexamethylen tetramine | 50,500 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50,500 | 0 |
| 224 | 108-67-8 | 1,3,5-trimethylbenzene | 77,525 | 39,827 | 0 | 39,827 | 0 | 6,826 | 164 | 6,990 | 4,307 | 26,401 |
| 227 | 108-88-3 | Toluene | 2,252,464 | 1,091,821 | 0 | 1,091,821 | 0 | 0 | 43,397 | 43,397 | 288,188 | 829,058 |
| 230 | — | Lead and its compounds | 35,126 | 0 | 0 | 0 | 10 | 313 | 569 | 892 | 0 | 34,234 |
| 231 | 7440-02-0 | Nickel | 10,184 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10,184 |
| 232 | — | Nickel compounds | 11,611 | 0 | 293 | 293 | 650 | 3,371 | 2,054 | 6,075 | 0 | 5,243 |
| 243 | — | Barium and its water-soluble compounds | 1,884 | 0 | 0 | 0 | 0 | 0 | 18 | 18 | 816 | 1,050 |
| 253 | 302-01-2 | Hydrazine | 1,573 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,573 | 0 |
| 266 | 108-95-2 | Phenol | 22,105 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22,105 | 0 |
| 272 | 117-81-7 | Bis Phthalate (2-ethyl-hexyl) | 90,819 | 0 | 0 | 0 | 0 | 0 | 163 | 163 | 0 | 90,656 |
| 283 | — | Hydrogen fluoride or its water-soluble salts | 1,844 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,844 | 0 |
| 299 | 71-43-2 | Benzene | 53,301 | 153 | 0 | 153 | 0 | 0 | 0 | 0 | 7,224 | 45,924 |
| 304 | — | Boron and its compounds | 3,182 | 0 | 0 | 0 | 0 | 0 | 1,110 | 1,110 | 2,072 | 0 |
| 307 | — | Poly(oxyethylene)=alkylether | 4,276 | 0 | 0 | 0 | 176 | 1,587 | 0 | 1,763 | 2,513 | 0 |
| 309 | 9016-45-9 | Poly(oxyethylene)=nonyl-phenyl ether | 1,219 | 0 | 0 | 0 | 122 | 1,097 | 0 | 1,219 | 0 | 0 |
| 310 | 50-00-0 | Formaldehyde | 9,002 | 8,836 | 0 | 8,836 | 0 | 0 | 0 | 0 | 166 | 0 |
| 311 | — | Manganese and its compounds | 20,025 | 0 | 1,072 | 1,072 | 299 | 3,042 | 1,608 | 4,949 | 1,872 | 12,132 |
| | | Total (Units: kg) | 9,948,405 | 2,666,787 | 1,491 | 2,668,278 | 1,352 | 23,412 | 705,027 | 729,791 | 652,304 | 5,898,032 |
| 179 | | Dioxins (Units: mg-TEQ) | 1,345.47 | 5.68 | 0.50 | 6.18 | 315.00 | 8.59 | 1,015.70 | 1,339.29 | 0.00 | 0.00 |

◆ Substances treated under the PRTR system and the emissions




*1 Study conducted on 354 types of primary specified chemical substances falling within the scope of the law concerning the reporting of releases into the environment of specified chemical substances and for promoting improvements in their management (Law Promoting the Management of Chemical Substances). Substances treated on a scale of 1,000 kg or more.

*2 Numbers of primary specified chemical substances falling within the scope of the Law Promoting the Management of Chemical Substances.

*3 Also including the parts sold to external recycling firms.

## 3 Honda Green Conference

| Speakers (Departments) |
|---|
| Asama Giken Co., Ltd./Head Office Plant |
| F.C.C. Co., Ltd./Suzuka Plant |
| Showa Corporation/Saitama Plant |
| Yachiyo Industry Co., Ltd./Kameyama Business Division |
| Honda Lock Mfg. Co., Ltd./Hirose Plant |
| Honda Express Co., Ltd./Head Office |
| Honda CLIO Keiyo Co., Ltd. |
| Honda VERNO Kobe Co., Ltd. |
| Honda Sogo Tatemono Co., Ltd./Honda Aoyama Building Facilities Management Section |
| Parts Operations |
| Tochigi Factory/Business Administration Division |
| Saitama Factory/Sayama Plant/Paint & Plastics Plant |
| Saitama Factory/Sayama Plant/Business Administration Division |
| Hamamatsu Factory/Automobile Plant |
| Hamamatsu Factory/Business Administration Division |
| Suzuka Factory/Paint & Plastics Plant |
| Suzuka Factory/Business Administration Division |
| Kumamoto Factory/Engine Plant |
| Honda R & D Co., Ltd./Tochigi R & D Center |
| Honda Engineering Co., Ltd./Tochigi Technology Center |

As in fiscal 2000, the Third Honda Green Conference was held at the Hamamatsu Factory in fiscal 2001. Efforts were made to expand the range of supplier participants from manufacturers to sales and logistics companies. The factories selected their themes beforehand, with a total of 20 themes being finally presented at the Conference. Concurrently with the Conference, study visits were made to the supplier who won the President's Prize at the Second Honda Green Conference, as well as to Honda's factories including the Hosoe Plant at the Hamamatsu Factory, which was constructed as an advanced environmental model factory. In the future, participants will no longer be limited to domestic factories but will also include Honda's production companies from all over the world.

The Third Honda Green Conference

# 3 Logistics Domain

The main thrust of our efforts in the Logistics Domain has been directed toward our Green Logistics target, including the introduction of environmental management systems and the reduction of $CO_2$ emission through the improvement of the transportation efficiency. Efforts are also being made to reduce the use of packaging materials as a step towards a Recycling-based Society.

**Main targets and achievements for fiscal 2001 in Japan**

| | |
|---|---|
| Targets | ● Introduction of environmental management systems to distribution companies<br>● Improving the transportation efficiency<br>● Improving the recyclability rate |
| Achievements | ● No more companies acquired ISO14001 certification. (Three out of the four major distributors had already acquired certification.)<br>● $CO_2$ emission: 125,452 $CO_2$-tons (for the transportation of completed automobiles) |

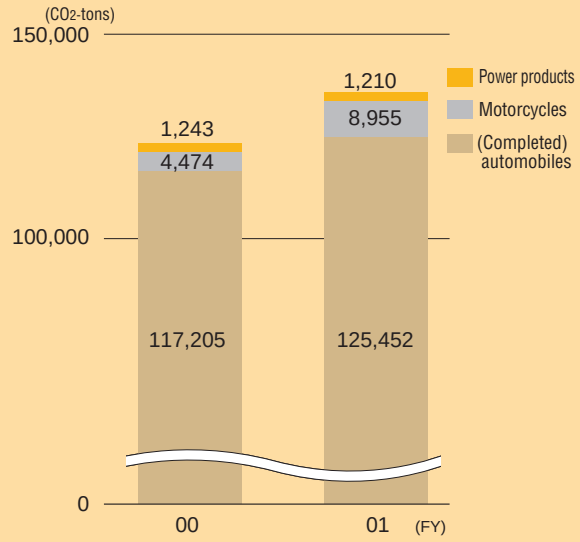
## 1 Promotion of Green Logistics

### 1. Implementing the Environmental Management System for the Distribution Companies

In the Logistics Domain, our efforts have concentrated on acquiring ISO14001 certification by the four major affiliated distribution companies that have a large share of the transportation volume, in an attempt to establish our Environmental Management System. Already three of them have acquired certification, and all the companies will acquire it by the end of fiscal 2002.

### 2. Improving the Shipping Efficiency

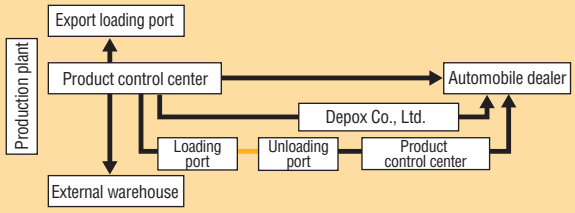
◆ Transition in $CO_2$ emissions from transportation activities




◆ $CO_2$ reductions due to measures to improve the transportation efficiency (fiscal 2001) (rate of increase in total emissions < rate of increase in the transportation amount)

| Item | Target | Time started | Reduction ($CO_2$-tons) |
|---|---|---|---|
| Expansion of transportation by ship and by joint transportation (new) | Automobiles | August 2001 | 785 |
| | | Total reduction | 785 |

◆ Scope of $CO_2$ emission calculation




In fiscal 2001, we took on-site measurements of the $CO_2$ emissions from the transportation of motorcycles and power products, in addition to those from the transportation of automobiles. As a result, the total $CO_2$ emissions from transportation amounted to 135,728 $CO_2$-tons.

#### • Improving the transportation efficiency for completed automobiles

$CO_2$ emissions from the transportation of completed automobiles was reduced by improving the transportation efficiency. Although the transportation of completed automobiles increased by 14.6% compared with fiscal 2001, the total $CO_2$ emissions increased by only 10%.

The following measures were taken mainly in fiscal 2001

**Main activities**

- Expansion of transportation by ship by the use of ferries and multipurpose vessels (promotion of a modal shift)
- Transportation of automobiles manufactured by other companies in Honda's own ships, and use of other companies' ships for return trip.
- Expansion of joint transportation with other companies by truck

Note 1) In the fiscal 2001 Environmental Annual Report, $CO_2$ emissions were reported in $CO_2$-tons (page 34). These figures, however, should have been reported in C-tons. (In this report, all figures are reported in $CO_2$-tons.)
Note 2) For $CO_2$ emission from the transportation of completed automobiles, only those being transported to destinations were been reported until last year. From this report onwards, however, we have decided to include the return trip.

### 3. Cleaner Exhaust Gases from Transportation

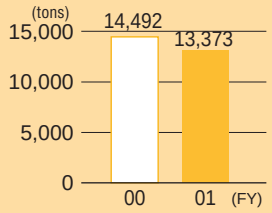
To reduce NOx, vehicles used for transportation have been successively replaced with low-emission vehicles at Honda's associated transportation companies. In addition, we are conducting surveys on DPF devices and low-sulfur fuels in response to the ordinance on environmental conservation enacted by the Tokyo Metropolitan Government.

# 2 Reduction of Packaging Materials

## 1. Repair Parts

### 1) Reduction in the use of packaging materials for repair parts

◆ Transition in the use of packaging materials for repair parts




In fiscal 2001, as a result of the activities described on the right, the total use of packaging materials amounted to 13,373 tons, down 1,119 tons (approximately 8%) over the previous fiscal year level (14,492 tons).

### 2) Activities to reduce packaging materials


Example of an improved packaging pad (to reduce the use of cardboard)

**Reduction of packaging materials**

- Reduction in the use of cardboard—improved packaging pads
- Reduction in the use of air caps*—Shift from the use of multiple packaging materials to the use of a single packaging material (Use of either cardboard or air caps)

**Introduction of returnable containers (for fender panels and bumper faces)**

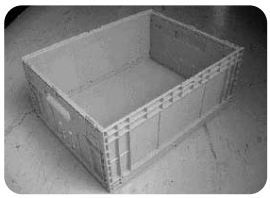
- Bumper face—The scope of items was expanded to 19 items by adding 8 items.

* Air cap: vinyl packaging material using encapsulated air bubbles

## 2. Knock-down (KD) Parts*

* Knock-down parts refer to parts for knock-down shipments (unassembled sets of parts for delivery overseas for assembly at the overseas destination).

### 1) Development of returnable internal containers and their expanded use



Newly developed returnable internal container

In fiscal 2001, the development of new containers that were introduced last year was completed and the containers started to be used for the export of parts to the United Kingdom. As a result, the amount of cardboard materials used for export was reduced by 59 tons (compared with fiscal 2000).

### 2) Expanded use of returnable external cases

In fiscal 2001, we started to use returnable external cases in the United States (at the Alabama Factory), Mexico, Indonesia and Turkey. As of March 2001, we are exporting our products from 17 bases in 10 countries* using returnable cases.

In countries where we use returnable cases, these cases account for 79% of the total number of cases used. (Up 23% from the fiscal 2000 level.)

* The U.S., Canada, Thailand, the Philippines, the U.K., Indonesia, Italy, Spain, Mexico, and Turkey

### 3) Promotion of the reuse and recycling of packaging materials at the factories in the KD parts importing country

Thanks to the cooperation of materials suppliers, Honda Automobile (Thailand) Co., Ltd. was able to start recycling polyethylene packaging materials. (See page 57 for details.)

## 3. Export of Completed Motorcycles

We are using returnable cases for exporting completed motorcycles to Europe and promoting the use of non-cardboard packaging materials for export to other areas.

◆ Reduction of packaging materials in the export of completed motorcycles (in fiscal 2001)

- Reduction in the use of steel materials: 1,600 tons
- Reduction in the use of cardboard materials: 600 tons

## 4. Transportation of Power Products

Returnable steel cases for outboard engines

We have been transporting OEM* power products for the domestic market in returnable containers. In fiscal 2001, we started to use returnable steel cases instead of the combined use of one-way steel cases and cardboard cases for the domestic transportation of medium- and large-sized outboard engines. As a result, the use of steel and cardboard materials was reduced.

◆ Reduction of packaging materials in the transportation of power products (in fiscal 2001)

- Reduction in the use of steel materials: 5.3 tons
- Reduction in the use of cardboard materials: 2.8 tons

* OEM: original equipment manufacturer

# 4 Sales and Services Domain

In the Sales and Services Domain, we are in the process of introducing Honda's own Environmental Management System at Honda automobile dealers and are undertaking efforts to ensure the appropriate disposal of end-of-life products and substances such as CFC12 or HFC134a. We are also extending similar activities to the Motorcycles and Power Products Domains.

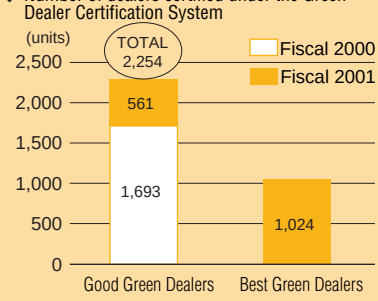
**Main targets and achievements for fiscal 2001 in Japan**

| | |
|---|---|
| Targets | ● Start of the second step certification of the Green Dealer Certification System<br>● Increase the CFC12 destruction rate |
| Achievements | ● Start of the second step certification "Best Green Dealer" (The certification was acquired by 1,024 stores.)<br>● CFC12 destruction rate: 83.3% (Improved by approximately 26 points) |

## 1 Promotion of Green Dealers (Automobiles)

### 1. Introduction of Environmental Management System

◆ Number of dealers certified under the Green Dealer Certification System




| Acquisition of ISO14001 Certification |
|---|
| Honda Primo Hokuriku Home Office (2002.1.20) |

We have been promoting the introduction of environmental management systems to Honda automobile dealers and in fiscal 2001, the dealers shown on the left were certified as "Good Green Dealers" or as "Best Green Dealers."

From now on, we will expand the number of dealers certified as "Best Green Dealers" and further encourage them to reduce $CO_2$ emissions.

In fiscal 2001, one dealer acquired ISO14001 certification as shown on the left.

* This proprietary Environmental Management System has been established by Honda on the basis of know-how obtained through acquisition of ISO14001 certification. The Honda Green Dealer Certification System is implemented in two steps. The Good Green Dealer Certification is awarded on the criteria of compliance with legal regulations and improving the environment, whereas the Best Green Dealer Certification, which is on a higher level, is awarded on the criterion of improving environmental efficiency.

### 2. Proper Disposal of End-of-Life Vehicles

#### 1) Proper disposal of CFC12 and HFC134a

◆ CFC12 destruction rate: 83.3%
(for 809 bases of the consolidated sales companies)

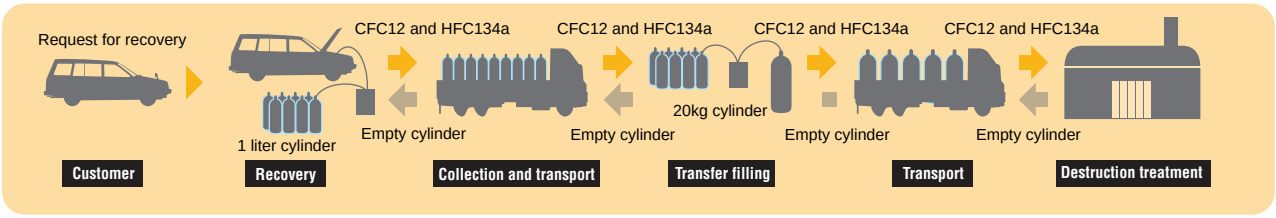
◆ HFC134a destruction rate: 84.4%
(for 809 bases of the consolidated sales companies)

Honda made efforts to promote the recovery and destruction of CFC12 used in automotive air-conditioning systems, and of HFC134a, which is responsible for global warming.

From now on, in response to the planned enforcement of the law on the recovery and destruction of CFC12 and HFC134a in October 2002, we will conduct the following activities:

・Further introduction of HFC134a recovery equipment
・Registration with local governments as a company engaged in the acceptance and recovery of CFC12 and HFC134a

◆ Flow of CFC12 and HFC134a recovery and destruction process




#### 2) Proper disposal of air bag inflators

We continue to instruct our dealers to properly dispose of air bag inflators as a requirement to be certified under the Green Dealer Certification System. At the end of fiscal 2001, 151 Honda dealers are participating in the air bag inflator recovery system of the Japan Automobile Manufacturers' Association.

Note) We have decided not to continue reporting on the "Promoting the Issuing of Manifests," as we have been doing up until last year in our Environmental Annual Report. We are now legally required to issue manifests and they have been properly issued as a result of the past efforts made within Honda. We have already completed the project and reporting is no longer necessary.

## 3. Other Activities

### 1) Publication of a Dismantling Manual

We published a "Dismantling Manual" for the dismantling and proper disposal of end-of-life vehicles. The manual, which puts first priority on safety and the environment, has been distributed to all Honda sales bases, Honda sales companies and dismantlers who deal with Honda. The manual explains how to remove the parts designated in the former Ministry of Health and Welfare's advance selection guidelines and in the former Ministry of International Trade and Industry's "Recycling Initiative," as well as those parts recommended by Honda, in an easy-to-understand manner with illustrations. In addition, it summarizes regulations that will need to be enforced in the future and specific methods to remove reusable and recyclable parts.

Dismantling Manual

### 2) Others

The activities described below were deployed under the environmental management system in an effort to encourage environmental improvement activities at Honda dealers.

- Distribution of CFC12 and HFC134a recovery posters to all dealers (September 2001)
- Publication of three issues of GD Press (environmental information magazine for sales companies)
- Participation in Honda Green Conferences (by Honda VERNO Kobe and Honda CLIO Keiyo)
- Publication of a list of Green Dealer certified dealers (June 2001)
- Distribution of the Green Dealer Manual to all sales companies (October 2001)

GD Press

Green Dealer poster

# 2 Expansion of Environmental Commitment to the Motorcycle and Power Products Areas

## 1. Motorcycles

**<Dealer>**

In March 2002, we opened "Honda Dream Tachikawa" in Tachikawa City, Tokyo as the first Honda Dream Store, which is a new type of store for sports bikes. Starting with this store, we plan to establish approximately 200 Honda Dream Stores throughout Japan by fiscal 2005, and to link the network of Honda Dream Stores with the Green Dealer System.

| Honda Dream Stores |
|---|
| • Proper disposal of end-of-life motorcycles from the acceptance of worn out motorcycles from customers, and parts and oil from the repair and inspection of customers' motorcycles |
| • Aggressive measures to quantify the environmental impacts of their own sales activities and to reduce those quantified impacts |

**<Distributer>**

Regarding the acquisition of ISO14001 certification by local subsidiaries (Distributer), we completed our surveillance of the Osaka Branch of Honda Motor Cycle Japan (former head office and Osaka Branch of Honda Motorcycle East Japan Co., Ltd.). In the future, further measures to reduce the environmental impact caused by the use of energy and $CO_2$ emissions will be promoted.

Also, we will encourage all other distributers to introduce environmental management systems to reduce their environmental impact.

## 2. Power Products

In fiscal 2001, we conducted surveys on the items shown on the right targeting our dealers, continuing on from fiscal 2000. Based on the results, we will build on the Green Dealer Certification System, which is Honda's original environmental management system, and encourage more dealers to participate.

- Issuing manifests
- Proper disposal of waste oil, batteries and machine parts
- Proper disposal of packaging materials (cardboard, iron frames, etc.)

# 5 Disposal and Recycling Domain

In the Disposal and Recycling Domein, Honda is aggressively engaged in research to develop technologies for the dismantling of end-of-life products and material recycling technology. Our efforts also concentrate on increasing the recovery of parts, including end-of-life bumpers, on the expansion of their recycling and reuse, and on improvements in actual recycling rate.

**Main targets and achievements for fiscal 2001 in Japan**

**Targets**
- Development of remanufacturing business
- Development of reuse business
- Technical development for proper disposal and recycling of end-of-life vehicles

**Achievements**
- No new items were marketed.
- Improving the efficiency of the vehicle turnover device for dismantling
- Formulating a dismantling line plan
- Measuring the actual recycling rate
- Start of "Honda Recycle Parts" by integrating the remanufacturing business and reuse business

## 1 Increasing the Recovery, Recycling, and Reusing of Parts

### 1. Expansion of "Honda Recycle Parts" Business

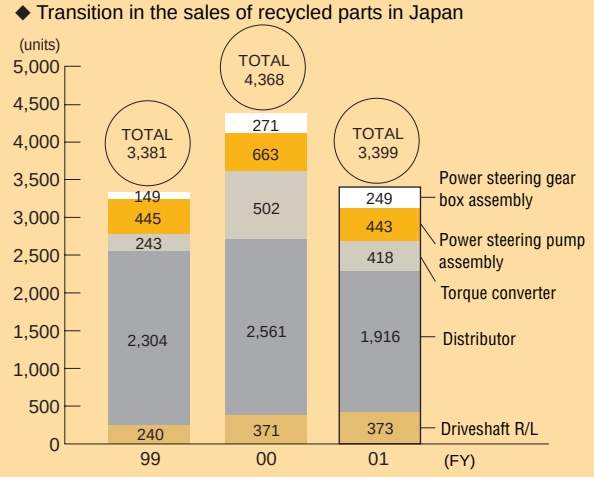
Honda Recycle Parts
www.honda.co.jp/parts/recycle/index.html (Japanese only)

In July 2001, we started selling "Honda Recycle Parts," which include reused parts as well as the highly functional recycled parts* that had been sold since 1998, such as the torque converters.

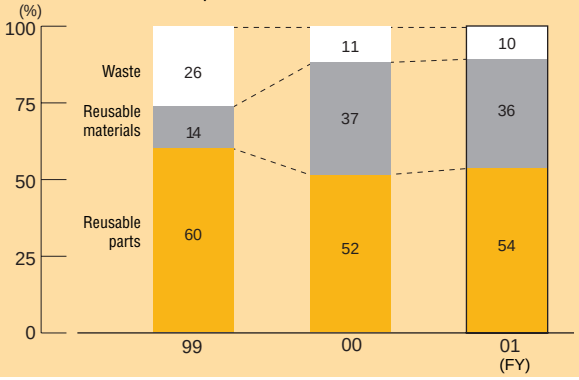
◆ History of Honda Recycle Parts

| | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|
| Recycled parts | Remanufacturing business | | | Honda Recycle Parts |
| Reused parts | | | | |

◆ Transition in the sales of recycled parts in Japan




◆ Rate of reuse in Japan




#### 1) Recycled parts

**Expansion of the lineup**

We examined the sale of new recycled parts to be sold as Honda Recycle Parts in fiscal 2001. However, since we could not obtain satisfactory results concerning technologies, production functions, or performance, so we did not market any new items in the fiscal year.

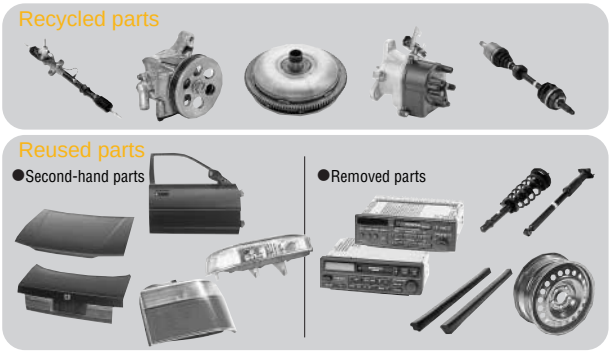
**Sales results**

The sales of recycled parts decreased over the previous year. This is due to a decrease in the number of existing models which can make use of recycled parts. We will expand the number of models which can make use of recycled parts and develop new items.

#### 2) Reused parts

Reused parts comprise second-hand parts (16 items in total) that are selected and removed from end-of-life vehicles two generations before, and removed parts (9 items in total) that are taken away to install optional parts.

We started selling these reused parts in the Kanto District in July 2001 and in the rest of Japan in January 2002.




Honda Recycle Parts

* Following the introduction of Honda Recycle Parts in fiscal 2001, we have decided to report on the Remanufacturing Business that we had been reporting on until last year under the section on Reused Parts, which comprises Honda Recycle Parts.

## 2. Recovery and Recycling of Bumpers

Also in fiscal 2001, we recovered bumpers from Honda automobile dealers as well as from general servicing and repair companies.

◆ Number of bumpers recovered in fiscal 2001 and the amount of resin recovered.....286,926 bumpers, 1,004 tons

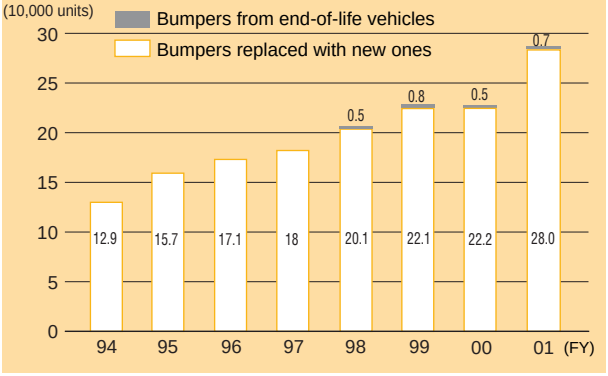
Bumpers replaced for repair ..... 279,966 bumpers, 980 tons
End-of-life vehicle bumpers ..... 6,960 bumpers, 24 tons

◆ Weight of resin recycled from recovered bumpers: 1,186 tons

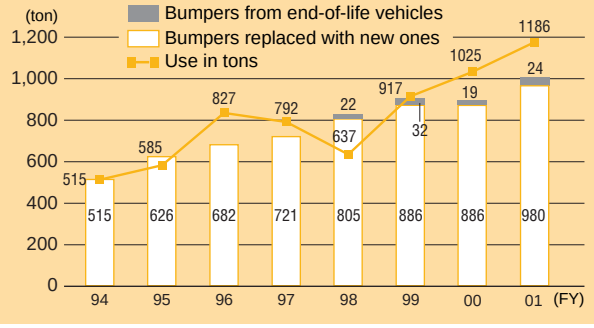
| Products made from the recycled resin |
|---|
| Automobiles: splash shield, splash guard, bumper for repair, etc. |
| Motorcycles: under cover |

In fiscal 2001, the number of types of bumpers fit for repair was increased by 53, making a total of 63 types.

◆ Number of recovered bumpers in Japan




◆ Use of resin recycled from recovered bumpers




Note) For fiscal 2001 and onwards, recovered bumper weight is to be calculated on the assumption that a single bumper weighs 3.5 kg.

# 2 Activity Results of the Dismantling Verification Center

## 1. Evaluation of the Ease of Vehicle Dismantling

According to the Manual for Evaluating the Ease of Vehicle Dismantling published last year, we evaluated 5 models for ease of dismantling in fiscal 2001. Accordingly, we obtained data on ease of dismantling involving liquids, parts containing substances with environmental impact, recyclable metal parts, reusable parts, and other recyclable parts such as those made of resin and glass. We will further improve the accuracy of evaluation and will use the evaluation results for product development and provision of services.

## 2. Infrastructure Supporting Technology

**Improvement of vehicle turnover device for dismantling <See page 12>**

We surveyed and analyzed the use of vehicle turnover devices for dismantling that we developed and put on sale in 1997. Based on the results, we improved the dismantling efficiency of the traditional model and proposed a new dismantling line plan based on the use of the device.

**Measurement of actual recycling rates of Honda vehicles in the market**

In fiscal 2001, jointly with a dismantler in Kitakyushu, we measured the actual recycling rates of Honda vehicles for the following two cases:

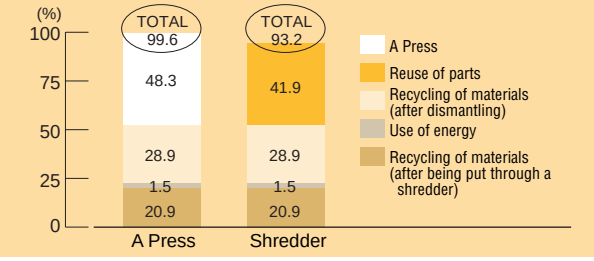
1) Pressing a vehicle into a die about 70 cm square (“A Press”) and putting it into a converter for recycling as iron; and
2) Processing a vehicle using a shredder into iron and non-iron.

As a result we were able to obtain high recycling rates in both cases. This is due to our efforts to aggressively reuse parts and recycle materials.

**Others**

We proposed the optimal method to remove gasoline from resin fuel tanks, and supported the publication of various dismantling manuals.

◆ Verification results of actual recycling rate



# 6 Administration Domain

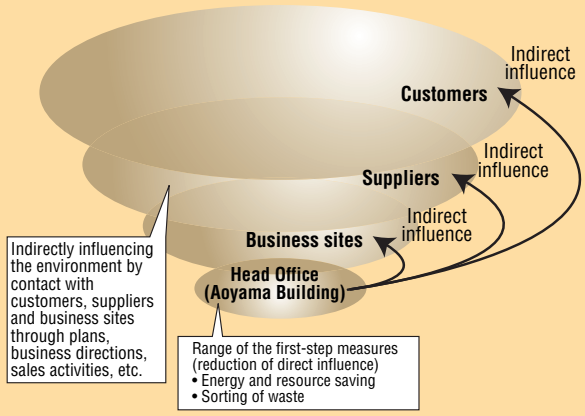
Main targets and achievements for fiscal 2001 in Japan

| | |
|---|---|
| Targets | ● Continuous improvement and consolidation of environmental management system in the office |
| Achievement | ● Consolidation of environmental management system in the office |

## 1 Promotion of Green Offices

Three years have passed since Honda's Aoyama head office building started to implement ISO14001-based recommendations. Employees are now engaged in activities to reduce the environmental impact as part of their office work. We are continuing to introduce a wider environmental viewpoint into the daily business activities of the employees.

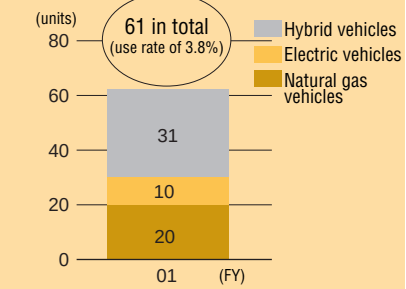
**Next step to be taken in the Aoyama Building based on ISO14001**



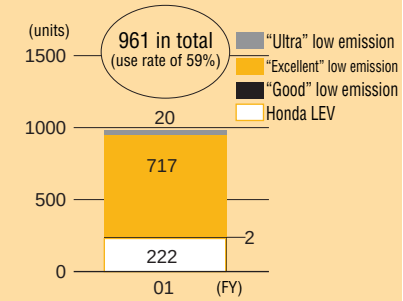

## Related Data

### Use of environmentally friendly/low-emission vehicles as company-owned cars at main business sites

◆ Use of government-designated environmentally friendly vehicles




◆ Use of low-emission vehicles




* The use rate is the ratio of environmentally friendly vehicles or low emission vehicles to all the vehicles owned by business sites (1,623 vehicles)

In the area of Social Activities, we have maintained a commitment toward nature conservation activities that comes out of our global vision of the "Green Renaissance Office," and we have engaged in activities designed to achieve a creative interaction between our offices and local communities. We also seek positive cooperation in environment-related events such as the holding of low-pollution vehicle fairs.

# Social Activities

## 1 Green Renaissance Activities

Internet address www.honda.co.jp/philanthropy/green.html (Japanese only)

### 1. Support Reforestation Activities in Japan

Honda has been supporting and participating in a reforestation project titled "Riverhead Forest (Tone River) Revitalization Project by Volunteers." This event for the conservation and revitalization of nature through afforestation is held by the CCC Creative Plant's Gunma Project at the source of the Tone River and in the upper reaches of the Minakami-Naramata Dam.

In fiscal 2001, a total of 49 Honda employees participated as volunteers in the thinning out* of alders in June and in the planting of alders in October. The alders could not actually be thinned out in June because of rain, and instead the participants learned about the trees in the forest. Our employees will continue to participate as volunteers in thinning out and planting trees to contribute to the protection of natural ecosystems through reforestation activities.

* Thinning out: to fell trees except those to be cultivated.

### 2. Plans for the Reforestation of Deserts in China—the "Joyful Forest" Project

The "Green Renaissance Office" supports the "Desert Afforestation Volunteers' Association," an NPO that carries out a model afforestation and agricultural project that contributes to preventing desertification through sand-arresting afforestation in the Horchin Desert in the Autonomous Region of Mongolia in the People's Republic of China. The Office started its "Joyful Forest Project" as a joint project with the Desert Afforestation Volunteers' Association and the local communities in fiscal 2000.

In fiscal 2001, the second volunteer afforestation project took place from May 19 to 26. (The third project, which were scheduled for September 2001, was canceled because of the terrorist attack in the U.S.) A total of 10,881 trees including poplars, pine, acacia and elms were planted by local citizens as well as by volunteers from Japan.

Joyful Forest

### 3. Eco Wagon

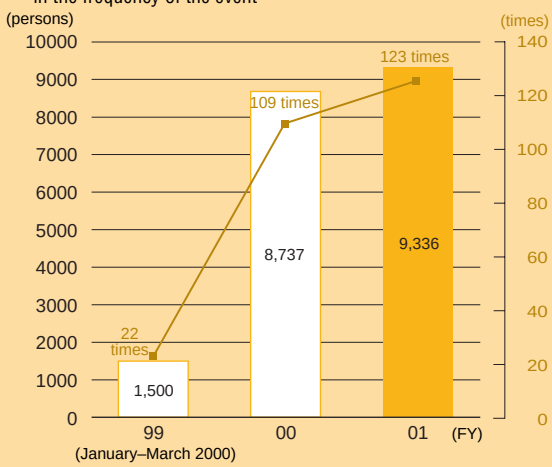
The Eco Wagon event is a program mainly intended for children to experience and study nature and organized with the cooperation of NPOs. In fiscal 2001, more than 9,300 people took part in the program. The reactions of teachers and elementary school pupils showed that the program was fully capable of meeting the needs of the comprehensive study class started at elementary schools in Japan in fiscal 2002.

In fiscal 2001, as the second step in the Eco Wagon program, an "Eco Wagon Expeditionary Party" was held to provide participants with the opportunity to be in contact with nature in different seasons. The tour was held three times in Hello Woods within Twin Link Motegi in spring, summer, and fall.

Eco Wagon Expeditionary Party

Participants in the Eco Wagon

◆ Transition in the number of Eco Wagon participants and in the frequency of the event



# Social Activities

For details of the following, please visit: world.honda.com/environment/2002report/

## 2 Support to NGOs and Environment-Related Foundations

In fiscal 2001, the Philanthropy Office gave support to 9 organizations engaged in environment-related social activities. (For details, please visit our Web site.)

## 3 Symbiosis Activities with Local Communities

Every Honda factory is in the process of implementing environmental exhibitions, cleaning operations and taking part in local environmental events in a general commitment toward symbiosis with the local communities. In fiscal 2001, various activities were conducted to attain the objectives of "symbiosis activities in closer harmony with local communities" and "enhancement of the environmental morale of employees." The number of local environmental events in which Honda factories participated totaled 37, and these were participated in by a total of approximately 340,000 employees. The environmental exhibitions held by the factories attracted an increasing number of exhibitors and participants from the local communities through programs in which the individual factories were able to demonstrate their own ways of commitment to the symbiosis with their local communities. Thus Honda's symbiosis activities have taken root in local communities.

(For details, please visit our Web site.)

## 4 Cooperation in Environmentally Friendly Vehicle Fairs and Support for Environment-related Lectures

Honda has exhibited its environmentally friendly vehicles at environment-related events held mainly by the national and local governments, and has given support to environment-related lectures held at such fairs. In fiscal 2001, we exhibited our vehicles at or gave support to a total of 39 environment-related events.

(For details, please visit our Web site.)

## 5 Other Activities

The Philanthropy Office produced a brochure to report on Honda's social activities conducted in fiscal 2001 and published it with the title "Honda Philanthropy 2001" on March 29, 2002.


Honda Philanthropy 2001



# Environment-Related Prizes and Awards Won by Honda

| Name of prize | Sponsored by | Prize winner | Date of award |
|---|---|---|---|
| Letter of thanks for the aggressive introduction of a thermal storage system | Heat Pump & Thermal Storage Technology Center of Japan | Honda Motor Co., Ltd. | 2001.7 |
| Higo's Water Resources Protection Award — Special Prize | Higo's Water Resources Protection Fund | Honda Motor Co., Ltd. Kumamoto Factory | 2001.10 |
| Official commendation as a factory ensuring the safety of high-pressure gas | Kyushu Bureau of Economy, Trade and Industry | Honda Motor Co., Ltd. Kumamoto Factory | 2001.11 |
| Official commendation for contributions to the protection of the air environment | Environmental Management Bureau of the Ministry of the Environment | Honda Motor Co., Ltd. Kumamoto Factory | 2001.12 |
| Fiscal 2001 Distinction for "Energy-Conservation Equipment and Systems" (Energy Conservation Award) — Energy Resource Bureau Director's Award (Fit) | The Energy Conservation Center, Japan | Honda Motor Co., Ltd. | 2002.1 |
| The 11th Global Environment Award — The Minister of Economy, Trade and Industry Prize | Fujisankei Communications Group The Japan Industrial Journal | Honda Motor Co., Ltd. | 2002.1 |
| Fiscal 2001 Commendation for Outstanding Examples of Energy Saving — The Energy Conservation Center Prize (for outstanding energy saving by the efficient operation of coating booths) | The Energy Conservation Center, Japan | Honda Motor Co., Ltd. Sayama Factory Saitama Plant | 2002.1 |
| National Competition for Fiscal 2001 Commendation for Outstanding Examples of Energy Saving — Director of Chubu Bureau of Economy, Trade and Industry Prize (for reductions in the use of air blows by the engine processing module machine/gang head) | The Energy Conservation Center, Japan | Honda Motor Co., Ltd. Suzuka Factory | 2002.2 |

# 1 Environmental Data by Products Sold in Japan

Note: Only data for models with a large sales turnover is given. For data on all our products please refer to the following URL: world.honda.com/environment/2002report/

## [Automobiles] Environmental Data for New Models and Remodeled Automobiles Sold in Japan in Fiscal 2001

| Model name | | | STEP WGN | Fit | INTEGRA | CR-V | CIVIC | CIVIC Hybrid | MOBILIO | That's |
|---|---|---|---|---|---|---|---|---|---|---|
| Main type listed | | | D | A | TYPE R | Fullmark iL | TYPE R | – | A | That's FF |
| Marketing date | | | 2001.4.6 | 2001.6.22 | 2001.7.2 | 2001.9.20 | 2001.12.6 | 2001.12.14 | 2001.12.21 | 2002.2.8 |
| Type | | | LA-RF3 | LA-GD1 | LA-DC5 | LA-RD5 | LA-EP3 | ZA-ES9 | LA-GB1 | LA-JD1 |
| Engine (motor) type | | | K20A | L13A | K20A | K20A | K20A | LDA-MF3 | L15A | EO7Z |
| Total engine displacement ($cm^3$) | | | 1,998 | 1,339 | 1,998 | 1,998 | 1,998 | 1,339 | 1,496 | 656 |
| Motor type (hybrid vehicles) | | | – | – | – | – | – | AC synchronous motor (slim-shaped brushless DC motor) | – | – |
| Rated voltage (V) (hybrid vehicles) | | | – | – | – | – | – | 144 | – | – |
| Running gear | Type of drive line | | FF | FF | FF | 4WD | FF | FF | FF | FF |
| | Transmission | | Electronically controlled 4-speed AT | Multimatic S (continuously variable automatic transmission) (prosmatic) | 6-speed MT | 4-speed AT with O/D switch | 6-speed MT | Multimatic S (continuously variable automatic transmission) | Multimatic S (continuously variable automatic transmission) (prosmatic) | 3-speed AT |
| Vehicle weight (kg) | | | 1,490 | 990 | 1,180 | 1,480 | 1,210 | 1,190 | 1,260 | 820 |
| Emission gas concentration | Level approved under MLIT's low-emission vehicle approval system (Note) | | ☆☆ | ☆☆ | ☆☆ | ☆☆ | ☆☆ | ☆☆☆ | ☆☆ | ☆☆ |
| | Figures reported to MLIT, measuring mode 10·15 (g/km) | CO | 0.50 | 0.50 | 0.67 | 0.40 | 0.67 | 0.50 | 0.50 | 0.60 |
| | | HC | 0.04 | 0.04 | 0.04 | 0.03 | 0.04 | 0.02 | 0.04 | 0.04 |
| | | NOx | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.02 | 0.04 | 0.04 |
| | Figures reported to MLIT, measuring mode 11 (g/test) | CO | 14.0 | 9.0 | 15.0 | 14.0 | 15.0 | 9.0 | 9.0 | 11.0 |
| | | HC | 1.10 | 1.10 | 1.10 | 1.00 | 1.10 | 0.55 | 1.10 | 1.10 |
| | | NOx | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 | 0.35 | 0.70 | 0.70 |
| Fuel economy | 10·15 mode (km/ℓ) | | 13.2 | 23.0 | 12.4 | 13.0 | 12.4 | 29.5 | 18.2 | 19.0 |
| | $CO_2$ emissions (g/km) | | 179 | 103 | 190 | 181 | 190 | 80 | 130 | 124 |
| | Compliant with 2010 Fuel Economy Standard | | ○ | ○ | — | ○ | — | ○ | ○ | ○ |
| Designation of local government-designated low-emission vehicle | 7 prefectures/cities incl. Tokyo | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 6 prefectures/cities in Keihanshin area (Kyoto, Osaka, Kobe) | | ○ | ○ | ○ | ○ | ○ | (Not applicable) | ○ | ○ |
| | Sapporo City | | ○ | ○ | ○ | ○ | ○ | (Not applicable) | ○ | ○ |
| Vehicles liable to green tax system | | | ○ | ○ | — | ○ | — | ○ | ○ | ○ |
| Noise level (examined by MLIT) | Exhaust noise near the outlet (dB(A))/Engine rpm | | 87(4,875) | 81(4,275) | 95(5,500) | 85(4,875) | 94(5,500) | 79(4,275) | 83(4,125) | 76(4,000) |
| | Acceleration noise (dB(A)) | | 74 | 74 | 74 | 74 | 74 | 70 | 73 | 74 |
| | Constant speed pass-by noise (dB (A), 50km/h) | | 68 | 68 | 70 | 69 | 69 | 67 | 67 | 68 |
| Air conditioner | Refrigerant HFC134a consumption (g) | | 700 | 450 | 550 | 530 | 550 | 550 | 550 | 500 |
| Lead Use | JAMA's 2000 target met (1/2 of 1996) | | ○ | ○ | ○ | ○ | | | ○ | |
| | JAMA's 2005 target met (1/3 of 1996) | | | | | | ○ | ○ | | ○ |

Note: ☆☆ indicates approved excellent low-emission vehicles, ☆☆☆ indicates approved ultra low-emission vehicles

### Automobile Exhaust Emissions Standards of Japan

| Item | 2000 exhaust emissions standards | |
|---|---|---|
| | 10・15 mode (g/km) | 11 mode (g/test) |
| CO (carbon monoxide) | 0.67 | 19.0 |
| HC (hydrocarbons) | 0.08 | 2.20 |
| NOx (nitrogen oxides) | 0.08 | 1.40 |

### 2010 Fuel Economy Standards of Japan (Gasoline-Powered Passenger Vehicle)

| Vehicle weight / Taxable weight (kg) | –702 | 703–827 | 828–1,015 | 1,016–1,265 | 1,266–1,515 | 1,516–1,765 | 1,766–2,015 | 2,016–2,265 | 2,266– |
|---|---|---|---|---|---|---|---|---|---|
| 10・15 mode fuel consumption (km/ℓ) | 21.2 | 18.8 | 17.9 | 16.0 | 13.0 | 10.5 | 8.9 | 7.8 | 6.4 |

### Noise Regulation Values of Japan

| | | |
|---|---|---|
| Exhaust noise near the outlet | standard value dB(A) | 96 |
| Acceleration noise | standard value dB(A) | 76 |
| Constant speed pass-by noise | standard value dB(A) | 72 |

### Ministry of Land, Infrastructure and Transport in Japan : Low Emission Vehicle Approval Standard

| Item | 25% emission reduction level against the FY 2000 standards (Good Low Emission Vehicle) | | 50% emission reduction level against the FY 2000 standards (Excellent Low Emission Vehicle) | | 75% emission reduction level against the FY 2000 standards (Ultra Low Emission Vehicle) | |
|---|---|---|---|---|---|---|
| | 10・15 mode (g/km) | 11 mode (g/test) | 10・15 mode (g/km) | 11 mode (g/test) | 10・15 mode (g/km) | 11 mode (g/test) |
| CO (carbon monoxide) | 0.67 | 19.0 | 0.67 | 19.0 | 0.67 | 19.0 |
| HC (hydrocarbons) | 0.06 | 1.65 | 0.04 | 1.10 | 0.02 | 0.55 |
| NOx (nitrogen oxides) | 0.06 | 1.05 | 0.04 | 0.70 | 0.02 | 0.35 |

## [Motorcycles] Environmental Data for New Models and Remodeled Motorcycles Sold in Japan in Fiscal 2001 (Major models)

| Model name | | SILVER WING | ZOOMER | CB400SS | CB400 SUPER FOUR | Bite | Ape 100 |
|---|---|---|---|---|---|---|---|
| Marketing date | | 2001.4.20 | 2001.6.1 | 2001.10.11 | 2002.1.31 | 2002.1.31 | 2002.2.15 |
| Type | | BC-PF01 | BA-AF58 | BC-NC41 | BC-NC39 | BA-AF59 | BC-HC07 |
| Engine model/type | | PF01E water-cooled 4-stroke | AF55E water-cooled 4-stroke | NC38E Air-cooled 4-stroke | NC23E water-cooled 4-stroke | AF55E water-cooled 4-stroke | HC07E Air-cooled 4-stroke |
| Total engine displacement ($cm^3$) | | 582 | 49 | 397 | 399 | 49 | 99 |
| Transmission | Constant mesh | – | – | ○(5-speed return) | ○(6-speed return) | – | ○(5-speed return) |
| | Continuously variable | ○(V-matic) | ○(V-matic) | – | – | ○(V-matic) | – |
| Vehicle weight (kg) | | 236 | 84 | 153 | 189 | 77 | 87 |
| Emission gas concentration (examined by MLIT) | CO (g/km) | 6.40 | 10.5 | 10.5 | 10.5 | 7.2 | 10.5 |
| | HC (g/km) | 1.00 | 1.60 | 1.60 | 1.60 | 1.10 | 1.60 |
| | NOx (g/km) | 0.15 | 0.24 | 0.24 | 0.24 | 0.26 | 0.24 |
| Fuel consumption rate (km/ℓ) | 60km/h constant speed test value | 25.0 | – | 39.0 | 37.0 | – | 53.2 |
| | 30km/h constant speed test value | – | 75.0 | – | – | 75.0 | – |
| Noise level (values examined by MLIT) | Constant speed pass-by noise dB(A) | 89(3500rpm) | 82(4000rpm) | 86(3500rpm) | 88(5500rpm) | 82(4000rpm) | 80(4000rpm) |
| | Exhaust noise near the outlet dB(A) | 73 | 70 | 72 | 73 | 70 | 70 |
| | Acceleration noise dB(A) | 71(35km/h) | 63(20km/h) | 68(50km/h) | 67(35km/h) | 63(20km/h) | 67(40km/h) |

Motorcycle Exhaust Emissions Standards of Japan

| Item | Regulation values | |
|---|---|---|
| | 4-stroke | 2-stroke |
| CO (Carbon monoxide) g/km | 13.0 | 8.00 |
| HC (Hydrocarbons) g/km | 2.00 | 3.00 |
| NOx (Nitrogen oxides) g/km | 0.30 | 0.10 |

Noise Regulation Values of Japan (Effective on and after October 1, 2001)

Main data are values submitted in the type certification application form in accordance with the Road Vehicle Act

| Item | Class A motorcycle 50cc or less | Class B motorcycle Over 50cc to 125cc or less | Light vehicle Over 125cc to 250cc or less | Small vehicle Over 250cc |
|---|---|---|---|---|
| Constant speed pass-by noise, Standard value dB(A) | 65 | 68 | 71 | 72 |
| Exhaust noise near the outlet, Standard value dB(A) | 84 | 90 | 94 | 94 |
| Acceleration noise, Standard value dB(A) | 71 | 71 | 73 | 73 |

## [Power Products] Environmental Data for New Models and Remodeled Products Sold in Japan in Fiscal 2001

| Category | | Small generator | Snowblower | Outboard engine | | | Mini tiller |
|---|---|---|---|---|---|---|---|
| Marketing date | | 2001.7.5 | 2001.11.8 | 2001.11.28 | | 2002.3.14 | 2002.3.1 |
| Model name | | EBR2300CX | Snowra i HS1390i | BF225A | BF200A | BF175A | Putina |
| Type | | EZFJ | SACJ | BAGJ, BAHJ | BAEJ, BAFJ | BAJJ, BAKJ | FAFJ |
| Engine type | | GX160K1 air-cooled, 4-stroke single-cylinder OHV | GX390 air-cooled, 4-stroke single-cylinder OHV | 4-stroke 60° V-6 cylinder vertical shaft type | 4-stroke 60° V-6 cylinder vertical shaft type | 4-stroke 60° V-6 cylinder vertical shaft type | GXV50 air-cooled 4-stroke single cylinder OHV vertical |
| Total engine displacement ($cm^3$) | | 163 | 389 | 3,471 | 3,471 | 3,471 | 49 |
| Weight (kg) | | Dry weight: 45 | 235 (JN) 250 (J) | 270 (LN) | | | Dry weight: 16.5 equipped weight: 17 |
| Fuel economy | Continuous operation time capability | Approx.10.5(J) Approx.9.1(N) | – | – | – | – | – |
| | Fuel consumption rate (ton/ℓ) | – | 12.1 | – | – | – | 0.35 |
| | Fuel consumption rate (g/PSh) (at continuous rated output) | – | – | 327 | 352 | 360 | – |
| Emission gas concentrations | EPA Phase 2 compliance with multipurpose engine emission standards | ○*1 | ○*3 | (Not applicable) | (Not applicable) | (Not applicable) | ○ |
| | CARB Tier 2 compliance with multipurpose engine emission standards | ○*1 | ○*3 | (Not applicable) | (Not applicable) | (Not applicable) | ○ |
| | Compliance with the voluntary standards of the Japan Land Engine Manufacturers Association | – | – | (Not applicable) | (Not applicable) | (Not applicable) | – |
| | EPA 2006 compliance with marine engine emission standards | (Not applicable) | (Not applicable) | ○*1 | ○*1 | ○*3 | (Not applicable) |
| | CARB 2008 compliance with marine engine emission standards | (Not applicable) | (Not applicable) | ○*1 | ○*1 | ○*3 | (Not applicable) |
| | Compliance with the 2006 voluntary standards of the Japan Boating Industry Association | (Not applicable) | (Not applicable) | – | ○ | ○ | (Not applicable) |
| | CO [g/kWh (g/HPh)] | 306.1(228.27)*2 | – | – | 139.05*2 | 100.74*2 | – |
| | HC [g/kWh (g/HPh)] | (4.923)*2 | – | – | 3.54*2 | 3.31*2 | – |
| | NOx [g/kWh (g/HPh)] | (2.79)*2 | – | – | 6.39*2 | 8.21*2 | – |
| | HC+NOx [g/kWh (g/HPh)] | 10.3 (7.713)*2 | – | – | 9.93*2 | 11.52*2 | – |
| Noise Level | EU noise level [dB(A)] | – | 108*4 | – | (Not applicable) | (Not applicable) | – |
| | Actual noise level | 63(dB(A)/7m)(J) 65(dB(A)/7m)(N) | | 97.0 | 96.0 | 95.5 | 79.5 |

*1: A US regulation used as a reference standard for products sold in the Japanese market.
*2: For reference only: the standards are for a similar model that has obtained an emissions permit in the US, and do not constitute a guarantee that these standards will be met by products marketed in Japan.
*3: A US regulation: as the product is not sold in the US the figures are for reference only.
*4: For reference only: the standards are for a similar model that has obtained a noise permit in the EU, and do not constitute a guarantee that these standards will be met by products marketed in Japan.

●Multipurpose Engine Emissions Standards

| Item | | Stationary less than 66cc*1 | Stationary from 100cc to 225cc*2 | Stationary from 225cc to 1000cc*3 | |
|---|---|---|---|---|---|
| Applicable models | | FG201 | EBR 2300CX | HS 1390i | |
| EPA regulations (Phase-2) (g/kWh) | CO | 610 | 610 | 610 | (Including aging deterioration) |
| | HC | 50 | 16.1 | 12.1 | (Including aging deterioration) |
| | NOx | | | | |

*1: Regulation standards since 2001 *2: Regulation standards from 2003 *3: Regulation standards since 2001 (CO) and from 2005 (HC and NOx)

| Item | | Stationary below 66cc*4 | Stationary from 65cc to 225cc*5 | Stationary from 225cc to 1000cc*5 | |
|---|---|---|---|---|---|
| Applicable models | | FG201 | EBR 2300CX | HS 1390i | |
| CARB Tier2 regulations (g/bhp/h) | CO | 400 | 410 | 410 | (Including aging deterioration) |
| | HC | 54 | 12 | 9 | |
| | NOx | | | | |

*4: Regulation standards since 2000 *5. Regulation standards from 2002

| The voluntary standards of the Japan Land Engine Manufacturers Association (g/kWh) | | Unmobile engine equipment less than 66cc | 100cc–225cc | Over 225cc |
|---|---|---|---|---|
| Applicable models | | FG201 | EBR 2300CX | HS 1390i |
| 2003 primary standards (new engine regulations) | CO | 519 | 519 | 519 |
| | HC | 50 | 16.1 | 13.4 |
| | NOx | | | |
| 2008 secondary standards (in-use regulations) | CO | 610 | 610 | 610 |
| | HC | 50 | 16.1 | 12.1 |
| | NOx | | | |

●Marine Engines Emissions Standards

| Applicable models | | BF225A | BF200A | BF175A | |
|---|---|---|---|---|---|
| Power (kW) | | 165.5 | 147.1 | 128.7 | |
| 2006 EPA regulations (gr/kWh) | HC+NOx | 45.2 | 45.3 | 45.5 | (Including aging deterioration) |
| 2006 voluntary standards of Japan Boating Industry Association (gr/kWh) | HC+NOx | 45.2 | 45.3 | 45.5 | (Including aging deterioration) |
| 2008 CARB regulations (gr/kWh) | HC+NOx | 15.8 | 15.9 | 15.9 | (Including aging deterioration) |

# 2 Japanese Factory Data

(Supplementary explanation) The tables are based on measurements taken between April 2001 and March 2002.

Water Quality
- Items given are those substances for which measurements are required by the Water Pollution Control Law and bylaws of local government authorities.
- The listed data had been obtained by statistical processing of our monthly data. Measurements of substances not listed here are conducted on an ongoing basis to ensure that they are in line with regulatory standards.

Air Quality
- Items given are those substances for which measurements are required by the Water Pollution Control Law and bylaws of local government authorities.
- The equipment measured includes boilers, drying ovens, incinerators etc.

● **For detailed data on air and water quality, noise, vibration and odor, please refer to the following URL:** (world.honda.com/environment/2002report)

## 1) Water Quality, Air Quality, PRTR

### Saitama Factory Wako Plant

- Address: 8-1 Hon Cho, Wako City, Saitama Prefecture
- Established: 1953
- Main products: Automobile parts
- Number of employees: 914 (as of March 31, 2002)
- Water discharge point: Sewage system
- ISO14001 acquired: January 1998

**Water quality**

| Item | Regulation standards (incl. agreed standards) | Voluntary regulation standards | Measurement results | |
|---|---|---|---|---|
| | | | Maximum (minimum) | Average |
| Hydrogen ion concentration | 5–9 | 5.6–8.4 | 7.7(6.8) | 7.3 |
| Biochemical oxygen demand (BOD) | 600 | 420 | 300 | 166 |
| Suspended solids (SS) | 600 | 420 | 58 | 40 |
| Oil content | 5 | 3.5 | 2.9 | 1.5 |
| Selenium | 0.1 | 0.07 | < 0.01 | < 0.01 |
| Cyanide | 1 | 0.7 | Below detection limit | Below detection limit |

Unit: mg/ℓ (except for pH)

**Air quality**

| Item | Regulation standards (incl. agreed standards) | Voluntary regulation standards | Measurement results | |
|---|---|---|---|---|
| | | | Maximum (minimum) | Average |
| Particulates | Unregulated | – | 0.05 | 0.0475 |
| Nitrogen oxides | Unregulated | – | 43 | 37.25 |

Units: particulates g/Nm$^3$, nitrogen oxides ppm

**PRTR listed substances**

| Substance | Volume handled | Volume discharged | | Volume transferred | | | Volume disposed | Volume consumed (transferred to products) |
|---|---|---|---|---|---|---|---|---|
| | | Atmosphere | Public waters | Sewage | Waste disposal sites outside company | Recycling | | |
| Xylene | 74,582 | 373 | 0 | 0 | 0 | 0 | 74,209 | 0 |
| Toluene | 176,308 | 881 | 0 | 0 | 0 | 0 | 175,427 | 0 |
| Benzene | 7,260 | 36 | 0 | 0 | 0 | 0 | 7,224 | 0 |
| Total | 258,150 | 1,290 | 0 | 0 | 0 | 0 | 256,860 | 0 |

### Saitama Factory Sayama Plant

- Address: 1-10-1 Shin-Sayama, Sayama City, Saitama Prefecture
- Established: 1964
- Main products: Legend, Odyssey, Accord etc.
- Number of employees: 4,785 (as of March 31, 2002)
- Water discharge points: Sewage system (domestic and industrial wastewater), Iruma River (indirect cooling water)
- ISO14001 acquired: January 1998

**Water quality** Domestic/industrial wastewater (sewage system)

| Item | Regulation standards (incl. agreed standards) | Voluntary regulation standards | Measurement results | |
|---|---|---|---|---|
| | | | Maximum (minimum) | Average |
| Hydrogen ion concentration | 5–9 | 5–9 | 7.3(6.3) | 6.8 |
| Biochemical oxygen demand (BOD) | 600 | 360 | 350(120) | 229 |
| Suspended solids (SS) | 600 | 360 | 54(9) | 25 |
| Oil content | 30 | 18 | 17(3) | 9.8 |
| Zinc and its compounds | 5 | 3 | 0.8(0) | 0.3 |
| Mangan and its compounds | 10 | 6 | 1.3(0.6) | 0.8 |
| Flourine content | 8 | 5 | 3.8(0) | 1.8 |
| Lead and its compounds | 0.1 | 0.06 | 0.059(0.002) | 0.034 |
| Cadmium and its compounds | 0.1 | 0.06 | Below detection limit | Below detection limit |
| Cyanides | 1 | 0.6 | Below detection limit | Below detection limit |
| Soluble iron and its compounds | 10 | 6 | Below detection limit | Below detection limit |
| Copper and its compounds | 3 | 2 | Below detection limit | Below detection limit |
| Chromium (VI) compounds | 0.5 | 0.03 | Below detection limit | Below detection limit |

Unit: mg/ℓ (except for pH)

Note: Please refer to the above URL for more information about cooling water discharged to rivers.

**Air quality**

| Item | Regulation standards (incl. agreed standards) | Voluntary regulation standards | Measurement results | |
|---|---|---|---|---|
| | | | Maximum (minimum) | Average |
| Particulates | 0.1 | 0.05 | 0.004 | 0.003 |
| | 0.2 | 0.1 | 0.004 | 0.003 |
| | 0.25 | 0.125 | 0.005 | 0.0035 |
| Nitrogen oxides | 130 | 75 | 73 | 66.5 |
| | 150 | 75 | 74 | 51 |
| | 180 | 90 | 74 | 53 |
| | 230 | 115 | 100 | 57.5 |
| | 250 | 125 | 117 | 113.5 |
| Hydrogen chloride | 500 | 200 | 140 | 75.5 |
| Sulphur oxides | 8.05 | 4.03 | 0.59 | 0.59 |
| Dioxins | 80 | 0.1 | Below detection limit | Below detection limit |

Units: particulates g/Nm$^3$, nitrogen oxides ppm, hydrogen chloride Nm$^3$, sulphur oxides Nm$^3$/h, dioxins ng-TEQ/Nm$^3$

**PRTR listed substances**

| Substance | Volume handled | Volume discharged | | Volume transferred | | | Volume disposed | Volume consumed (transferred to products) |
|---|---|---|---|---|---|---|---|---|
| | | Atmosphere | Public waters | Sewage | Waste disposal sites outside company | Recycling | | |
| Soluble zinc compounds | 24,866 | 0 | 0 | 92 | 4,135 | 0 | 0 | 20,639 |
| Bis Phenol A epoxy resins | 40,799 | 0 | 0 | 0 | 2,446 | 0 | 0 | 38,353 |
| Ethyl benzene | 296,835 | 92,154 | 0 | 0 | 0 | 135,693 | 19,422 | 49,566 |
| Ethylene glycol | 1,702,478 | 0 | 0 | 0 | 0 | 0 | 0 | 1,702,478 |
| Xylene | 1,207,837 | 445,764 | 0 | 0 | 0 | 436,368 | 104,208 | 221,497 |
| Organotin compounds | 5,300 | 0 | 0 | 3 | 103 | 0 | 0 | 5,194 |
| 1,3,5-Trimethyl benzene | 15,137 | 8,311 | 0 | 0 | 6,826 | 0 | 0 | 0 |
| Toluene | 1,099,550 | 609,629 | 0 | 0 | 0 | 22,285 | 96,094 | 371,542 |
| Lead and its compounds | 16,154 | 0 | 0 | 10 | 313 | 0 | 0 | 15,831 |
| Nickel | 10,184 | 0 | 0 | 0 | 0 | 0 | 0 | 10,184 |
| Nickel compounds | 5,744 | 0 | 0 | 650 | 3,371 | 0 | 0 | 1,723 |
| Bis (2-ethylhexyl) phthalic acid | 74,491 | 0 | 0 | 0 | 0 | 0 | 0 | 74,491 |
| Benzene | 28,302 | 53 | 0 | 0 | 0 | 0 | 0 | 28,249 |
| Polyoxyethylene alkyl ether | 1,763 | 0 | 0 | 176 | 1,587 | 0 | 0 | 0 |
| Polyoxyethylene nonyl phenyl ether | 1,219 | 0 | 0 | 122 | 1,097 | 0 | 0 | 0 |
| Formaldehyde | 2,514 | 2,514 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mangan and its compounds | 7,424 | 0 | 0 | 299 | 3,042 | 0 | 0 | 4,083 |
| Total | 4,540,597 | 1,158,425 | 0 | 1,352 | 22,920 | 594,346 | 219,724 | 2,543,830 |
| Dioxins (unit: mg-TEQ) | 8.81 | 0.22 | 0 | 0 | 8.59 | 0 | 0 | 0 |

## Tochigi Factory Takanezawa Plant

- Address: 2900 Kami-Takanezawa Ohaza, Takanezawa Cho, Shioya Gun, Tochigi Prefecture
- Established: 1990
- Main preoducts: NSX, S2000, Insight
- Number of employees: 435 (as of March 31, 2002)
- Water discharge point: Gogyo River via Haga Industrial Park Joint Treatment Plant
- ISO14001 acquired: September 1997

### Water quality

| Item | Regulation standards (incl. agreed standards) | Voluntary regulation standards | Measurement results | |
|---|---|---|---|---|
| | | | Maximum (minimum) | Average |
| Hydrogen ion concentration | 5.8–8.6 | 6.2–8.2 | 8.1(7.2) | 7.6 |
| Biochemical oxygen demand (BOD) | 25 | 18 | 13 | 4.1 |
| Chemical oxygen demand (COD) | 25 | 18 | 9.5 | 7.3 |
| Suspended solids (SS) | 50 | 37 | 18 | 4.5 |
| Oil content | 5 | 2.5 | 2.1 | less than 0.5 |
| Zinc and its compounds | 5 | 2.5 | 0.86 | 0.2 |
| Soluble iron and its compounds | 3 | 1.5 | 0.3 | 0.08 |
| Soluble mangan and its compounds | 3 | 2.2 | 0.3 | 0.15 |
| Flourine content | 8 | 6.5 | 5.6 | 3.1 |
| Nitrogen content | 20 | 15 | 18.6 | 15 |

Unit: mg/ℓ (except for pH)

### Air quality

| Item | Regulation standards (incl. agreed standards) | Voluntary regulation standards | Measurement results | |
|---|---|---|---|---|
| | | | Maximum (minimum) | Average |
| Particulates | 0.3 | 0.15 | 0.003 | 0.002 |
| Nitrogen oxides | 150 | 112 | 110 | 59 |

Units: particulates g/Nm$^3$, nitrogen oxides ppm

### PRTR listed substances

| Substance | Volume handled | Volume discharged | | Volume transferred | | | Volume disposed | Volume consumed (transferred to products) |
|---|---|---|---|---|---|---|---|---|
| | | Atmosphere | Public waters | Sewage | Waste disposal sites outside company | Recycling | | |
| Ethyl benzene | 3,890 | 78 | 0 | 0 | 0 | 0 | 0 | 3,812 |
| Ethylene glycol | 5,991 | 4 | 0 | 0 | 300 | 0 | 5,687 | 0 |
| Ethylene glycol monoethyl ether | 3,845 | 2 | 0 | 0 | 192 | 0 | 3,651 | 0 |
| Xylene | 51,512 | 1,595 | 0 | 0 | 0 | 21,924 | 2,006 | 25,987 |
| Toluene | 52,450 | 2,866 | 0 | 0 | 0 | 1,582 | 449 | 47,553 |
| Benzene | 1,163 | 23 | 0 | 0 | 0 | 0 | 0 | 1,140 |
| Total | 118,851 | 4,568 | 0 | 0 | 492 | 23,506 | 11,793 | 78,492 |

## Tochigi Factory Haga Plant

- Address: 52-1 Hagadai, Haga Machi, Haga Gun, Tochigi Prefecture
- Established: 1993
- Main products: Chassis parts etc.
- Number of employees: 108 (as of March 31, 2002)
- Water discharge point: Gogyo River via Haga Industrial Park Joint Treatment Plant
- ISO14001 acquired: September 1997

### Water quality

| Item | Regulation standards (incl. agreed standards) | Voluntary regulation standards | Measurement results | |
|---|---|---|---|---|
| | | | Maximum (minimum) | Average |
| Hydrogen ion concentration | 5.8–8.6 | 6.4–8.1 | 8.1(7.2) | 7.6 |
| Biochemical oxygen demand (BOD) | 20 | 10 | 8.5 | less than 0.5 |
| Chemical oxygen demand (COD) | 20 | 10 | 2.9 | 2.6 |
| Suspended solids (SS) | 40 | 20 | 3.6 | less than 0.5 |
| Oil content | 5 | 2.5 | 0.7 | Below detection limit |
| Colon bacillus colony count | 3,000 | 1,500 | 46 | 0 |
| Nitrogen content | 60 | 30 | 4.7 | 3.3 |
| Phosphorous content | 8 | 4 | 0.08 | 0.075 |

Units: mg/ℓ (except for pH), colon bacillus colony count No./cm$^3$

### Air quality

| Item | Regulation standards (incl. agreed standards) | Voluntary regulation standards | Measurement results | |
|---|---|---|---|---|
| | | | Maximum (minimum) | Average |
| Particulates | 0.3 | 0.15 | Below 0.005 | Below 0.005 |
| Nitrogen oxides | 180 | 90 | 80 | 63 |
| Sulphur oxides | 7 | 3.5 | 0.1 or less | 0.1 or less |

Units: particulates g/Nm$^3$, nitrogen oxides ppm, sulphur oxides K-values

### PRTR listed substances

| Substance | Volume handled | Volume discharged | | Volume transferred | | | Volume disposed | Volume consumed (transferred to products) |
|---|---|---|---|---|---|---|---|---|
| | | Atmosphere | Public waters | Sewage | Waste disposal sites outside company | Recycling | | |
| Xylene | 2,295 | 7 | 0 | 0 | 0 | 0 | 0 | 2,288 |
| Total | 2,295 | 7 | 0 | 0 | 0 | 0 | 0 | 2,288 |

## Tochigi Factory Mohka Plant

- Address: 19 Matsuyama Cho, Mohka City, Tochigi Prefecture
- Established: 1970
- Main products: Engine parts, suspension parts etc.
- Number of employees: 981 (as of March 31, 2002)
- Water discharge point: Kokai River via Gogyo River
- ISO14001 acquired: September 1997

### Water quality

| Item | Regulation standards (incl. agreed standards) | Voluntary regulation standards | Measurement results | |
|---|---|---|---|---|
| | | | Maximum (minimum) | Average |
| Hydrogen ion concentration | 5.8–8.6 | 5.8–8.6 | 8.1(7.2) | 7.6 |
| Biochemical oxygen demand (BOD) | 20 | 10 | 13 | 4.1 |
| Suspended solids (SS) | 40 | 20 | 18 | 4.5 |
| Oil content | 5 | 2.5 | 2.1 | 0.5 |
| Zinc and its compounds | 5 | 2.5 | 0.86 | 0.2 |
| Soluble iron and its compounds | 3 | 1.5 | 0.3 | 0.08 |
| Colon bacillus colony count | 3,000 | 1,500 | 167 | 7 |
| Nitrogen content | 60 | 30 | 12 | 10 |
| Phosphorous content | 8 | 4 | 0.1 | 0.1 |
| Phenols | 1 | 0.5 | Below detection limit | Below detection limit |
| Soluble mangan and its compounds | 3 | 1.5 | 0.2 | 0.15 |
| Cyanides | 1 | 0.5 | Below detection limit | Below detection limit |

Units: mg/ℓ (except for pH), colon bacillus colony count No./cm$^3$

### Air quality

| Item | Regulation standards (incl. agreed standards) | Voluntary regulation standards | Measurement results | |
|---|---|---|---|---|
| | | | Maximum (minimum) | Average |
| Particulates | 0.3 | 0.15 | less than 0.007 | less than 0.007 |
| Nitrogen oxides | 180 | 135 | 120 | 71.2 |
| Sulphur oxides | 8 | 6.4 | 0.33 or less | 0.33 or less |

Units: particulates g/Nm$^3$, nitrogen oxides ppm, sulphur oxides K-values

### PRTR listed substances

| Substance | Volume handled | Volume discharged | | Volume transferred | | | Volume disposed | Volume consumed (transferred to products) |
|---|---|---|---|---|---|---|---|---|
| | | Atmosphere | Public waters | Sewage | Waste disposal sites outside company | Recycling | | |
| Soluble zinc compounds | 15,543 | 0 | 0 | 0 | 0 | 15,543 | 0 | 0 |
| Xylene | 28,639 | 0 | 0 | 0 | 0 | 0 | 0 | 28,639 |
| Toluene | 1,765 | 0 | 0 | 0 | 0 | 0 | 0 | 1,765 |
| Total | 45,947 | 0 | 0 | 0 | 0 | 15,543 | 0 | 30,404 |

## Hamamatsu Factory

- Address: 1-13-1 Aoi Higashi, Hamamatsu City, Shizuoka Prefecture
- Established: 1954
- Main products: Motorcycles, power products, automatic transmissions for automobiles etc.
- Employees: 3,712 (as of March 31, 2002, including Hosoe Plant)
- Water discharge point: Isaji River, Danzu River (rainwater only)
- ISO14001 acquired: March 1998 (automobile, motorcycle factory), April 1997 (power products factory)

### Water quality

Factory wastewater (sewage)

| Item | Regulation standards (incl. agreed standards) | Voluntary regulation standards | Measurement results | |
|---|---|---|---|---|
| | | | Maximum (minimum) | Average |
| Hydrogen ion concentration | 5.7–8.7 | 5.7–8.7 | 7.5 | 7.4 |
| Biochemical oxygen demand (BOD) | 300 | 150 | 111 | 91.4 |
| Suspended solids (SS) | 300 | 150 | 50 | 39 |
| Oil content | 35 | 17.5 | Below detection limit | Below detection limit |
| Lead and its compounds | 0.1 | 0.05 | 0.02 | 0.01 |
| Zinc and its compounds | 5 | 2.5 | 0.09 | 0.07 |
| Soluble iron and its compounds | 10 | 5 | 2 | 1.3 |
| Flourine content | 15 | 7.5 | 0.3 | 0.25 |
| Dioxins | 10 | 5 | 3.8 | 2.9 |

Unit: mg/ℓ (except for pH), Dioxins pg-TEQ/ℓ

Note: Please refer to the URL on page 47 for more information about cooling water discharged to rivers.

### Air quality

| Item | Regulation standards (incl. agreed standards) | Voluntary regulation standards | Measurement results | |
|---|---|---|---|---|
| | | | Maximum (minimum) | Average |
| Particulates | 0.10 | 0.05 | Below detection limit | Below detection limit |
| | 0.20 | 0.10 | Below detection limit | Below detection limit |
| | 0.25 | 0.125 | Below detection limit | Below detection limit |
| Nitrogen oxides | 150 | 75 | 64 | 43 |
| | 180 | 90 | 83 | 41 |
| | 250 | 125 | 98 | 94 |
| Hydrogen chloride | 700 | 350 | 350 | 270 |
| | 80 | 40 | 8.3 | 0.7 |
| Sulphur oxides | 2.37 | 1.185 | 0.34 | 0.26 |
| Dioxins | 20 | 10 | 0.0067 | 0.00335 |
| | 80 | 0.1 | 0.03 | 0.0169 |
| Chlorine | 30 | 15 | Below detection limit | Below detection limit |
| Flourine compounds | 3 | 1.5 | 0.70 | 0.12 |

Units: particulates g/Nm$^3$, nitrogen oxides ppm, hydrogen chloride and chlorine mg/Nm$^3$, sulphur oxides Nm$^3$/h, dioxins ng-TEQ/Nm$^3$

### PRTR listed substances

| Substance | Volume handled | Volume discharged | | Volume transferred | | | Volume disposed | Volume consumed (transferred to products) |
|---|---|---|---|---|---|---|---|---|
| | | Atmosphere | Public waters | Sewage | Waste disposal sites outside company | Recycling | | |
| Soluble zinc compounds | 7,302 | 0 | 0 | 0 | 0 | 319 | 6,858 | 125 |
| 2-amino ethanol | 3,295 | 0 | 0 | 0 | 0 | 1,230 | 2,065 | 0 |
| Ethylene glycol | 265,555 | 12 | 0 | 0 | 0 | 4 | 0 | 265,539 |
| Xylene | 115,478 | 87,843 | 0 | 0 | 0 | 27,635 | 0 | 0 |
| Toluene | 23,563 | 18,072 | 0 | 0 | 0 | 5,490 | 0 | 1 |
| Barium and its compounds | 1,884 | 0 | 0 | 0 | 0 | 18 | 816 | 1,050 |
| Boron and its compounds | 3,182 | 0 | 0 | 0 | 0 | 1,110 | 2,072 | 0 |
| Mangan and its compounds | 1,882 | 0 | 0 | 0 | 0 | 0 | 1,872 | 10 |
| Total | 422,141 | 105,927 | 0 | 0 | 0 | 35,806 | 13,683 | 266,725 |
| Dioxins (unit: mg-TEQ) | 319.22 | 0.72 | 0 | 315.00 | 0 | 3.50 | 0 | 0 |

## Hamamatsu Factory Hosoe Plant

- Address: 5794-1 Kiga Aza Ohtsubo, Hosoe Cho, Inasa Gun, Shizuoka Prefecture
- Established: 2001
- Main products: Outboard engines
- Employees: Included as Hamamatsu Factory employees (as of March 31, 2002)
- Water discharge point: Lake Hamana

### Water quality

No applicable facilities

### Air quality

| Item | Regulation standards (incl. agreed standards) | Voluntary regulation standards | Measurement results | |
|---|---|---|---|---|
| | | | Maximum (minimum) | Average |
| Particulates | 0.10 | 0.05 | Below detection limit | Below detection limit |
| Nitrogen oxides | 150 | 75 | 47 | 46.5 |

Units: particulates g/Nm$^3$, nitrogen oxides ppm

## Suzuka Factory

- Address: 1907 Hirata Cho, Suzuka City, Mie Prefecture
- Established: 1960
- Main products: Civic, STEP WGN, Fit etc.
- Employees: 8,073 (as of March 31, 2002)
- Water discharge point: Suzuka River
- ISO14001 acquired: February 1998

### Water quality

| Item | Regulation standards (incl. agreed standards) | Voluntary regulation standards | Measurement results | |
|---|---|---|---|---|
| | | | Maximum (minimum) | Average |
| Hydrogen ion concentration | 5.8–8.6 | 5.8–8.6 | 7.7(6.6) | 7.0 |
| Biochemical oxygen demand (BOD) | Maximum 65/ average 50 | 25 | 22 | 14 |
| Chemical oxygen demand (COD) | 200.1 | 200.1 | 165 | 92.6 |
| Suspended solids (SS) | Maximum 90/ average 70 | 35 | 25 | 15.4 |
| Oil content | 1 | 1 | 0.9 | 0.6 |
| Copper and its compounds | 1 | 0.5 | Below detection limit | Below detection limit |
| Zinc and its compounds | 5 | 2.5 | 0.3 | 0.1 |
| Soluble iron and its compounds | 10 | 5 | 3.9 | 1.2 |
| Soluble mangan and its compounds | 10 | 5 | 2.1 | 1.1 |
| Total chromes | 2 | 1 | Below detection limit | Below detection limit |
| Flourine content | 8 | 4 | 4.8 | 1.7 |
| Colon bacillus colony count | 3,000 | 1,500 | 280 | 20 |
| Nitrogen content | Maximum 120/ average 60 | 15 | 14.6 | 10.2 |
| Phosphorous content | Maximum 16/ average 8 | 1.5 | 1.4 | 1.0 |
| Cadmium and its compounds | 0.1 | 0.05 | Below detection limit | Below detection limit |
| Cyanides | 1 | 0.5 | Below detection limit | Below detection limit |
| Lead and its compounds | 0.1 | 0.05 | Below detection limit | Below detection limit |

Units: mg/ℓ except for pH and COD pollution, pollution loading amount of COD (regulated total volume) is measured in kg per day, Colon bacillus colony count in No./cm$^3$

### Air quality

| Item | Regulation standards (incl. agreed standards) | Voluntary regulation standards | Measurement results | |
|---|---|---|---|---|
| | | | Maximum (minimum) | Average |
| Particulates | 0.05 | 0.025 | Below detection limit | Below detection limit |
| | 0.10 | 0.050 | 0.03 | 0.03 |
| | 0.20 | 0.100 | 0.07 | 0.03 |
| | 0.25 | 0.125 | Below detection limit | Below detection limit |
| | 0.40 | 0.200 | 0.101 | 0.059 |
| Nitrogen oxides | 70 | 35 | 20 | 16.55 |
| | 150 | 75 | 72.9 | 45.5 |
| | 180 | 90 | 64 | 21.3 |
| | 200 | 100 | 44.1 | 42.45 |
| | 230 | 115 | 40.9 | 10.2 |
| | 250 | 125 | 121.8 | 116.5 |
| Hydrogen chloride | 700 | 350 | 25 | 16.55 |
| Sulphur oxides | 14.5 | 7.25 | Below detection limit | Below detection limit |
| Dioxins | 0.1 | 0.1 | 0.052 | 0.01864 |

Units: particulates g/Nm$^3$, nitrogen oxides ppm, hydrogen chloride mg/Nm$^3$, sulphur oxides Nm$^3$/h, dioxins ng-TEQ/Nm$^3$

### PRTR listed substances

| Substance | Volume handled | Volume discharged | | Volume transferred | | | Volume disposed | Volume consumed (transferred to products) |
|---|---|---|---|---|---|---|---|---|
| | | Atmosphere | Public waters | Sewage | Waste disposal sites outside company | Recycling | | |
| Soluble zinc compounds | 29,020 | 0 | 113 | 0 | 0 | 5,837 | 0 | 23,070 |
| Bis Phenol A epoxy resins | 66,350 | 0 | 0 | 0 | 0 | 370 | 2,389 | 63,591 |
| Ethyl benzene | 285,179 | 113,802 | 0 | 0 | 0 | 1,861 | 6,351 | 163,165 |
| Ethylene glycol | 1,479,566 | 0 | 0 | 0 | 0 | 0 | 0 | 1,479,566 |
| Xylene | 1,048,955 | 366,218 | 13 | 0 | 0 | 8,832 | 26,962 | 646,930 |
| Organotin compounds | 10,930 | 0 | 0 | 0 | 0 | 328 | 0 | 10,602 |
| Hexamethylene tetramine | 50,500 | 0 | 0 | 0 | 0 | 0 | 50,500 | 0 |
| 1,3,5-Trimethyl benzene | 62,388 | 31,516 | 0 | 0 | 0 | 164 | 4,307 | 26,401 |
| Toluene | 770,862 | 334,929 | 0 | 0 | 0 | 14,040 | 13,696 | 408,197 |
| Lead and its compounds | 18,972 | 0 | 0 | 0 | 0 | 569 | 0 | 18,403 |
| Nickel compounds | 5,867 | 0 | 293 | 0 | 0 | 2,054 | 0 | 3,520 |
| Hydrazine | 1,573 | 0 | 0 | 0 | 0 | 0 | 1,573 | 0 |
| Phenol | 5,785 | 0 | 0 | 0 | 0 | 0 | 5,785 | 0 |
| Bis (2-ethylhexyl) phthalic acid | 16,328 | 0 | 0 | 0 | 0 | 163 | 0 | 16,165 |
| Hydrogen fluoride and soluble salt | 1,844 | 0 | 0 | 0 | 0 | 0 | 1,844 | 0 |
| Benzene | 16,576 | 41 | 0 | 0 | 0 | 0 | 0 | 16,535 |
| Polyoxyethylene alkyl ether | 2,513 | 0 | 0 | 0 | 0 | 0 | 2,513 | 0 |
| Formaldehyde | 6,488 | 6,322 | 0 | 0 | 0 | 0 | 166 | 0 |
| Mangan and its compounds | 10,719 | 0 | 1,072 | 0 | 0 | 1,608 | 0 | 8,039 |
| Total | 3,890,415 | 852,828 | 1,491 | 0 | 0 | 35,826 | 116,086 | 2,884,184 |
| Dioxins (unit: mg-TEQ) | 332.80 | 4.30 | 0.50 | 0 | 0 | 328.00 | 0 | 0 |

## Kumamoto Factory

- Address: 1500 Hirakawa Ohaza, Ohzu Machi, Kikuchi Gun, Kumamoto Prefecture
- Established: 1976
- Main products: Mini car engines, tractors etc.
- Number of employees: 2,927 (as of March 31, 2002)
- Water discharge point: Kikuchi River via Hyuga River and Koushi River
- ISO14001 acquired: November 1997

### Water quality

| Item | Regulation standards (incl. agreed standards) | Voluntary regulation standards | Measurement results | |
|---|---|---|---|---|
| | | | Maximum (minimum) | Average |
| Hydrogen ion concentration | 5.8–8.6 | 6.5–7.9 | 7.5–7.9 | 7.8 |
| Biochemical oxygen demand (BOD) | 7 | 3.5 | 3.2 | 2.4 |
| Suspended solids (SS) | 10 | 5 | 5 | 3.0 |
| Oil content | 1 | 0.5 | 0.5 | Below detection limit |
| Copper and its compounds | 0.3 | 0.15 | Below detection limit | Below detection limit |
| Zinc and its compounds | 1.5 | 0.75 | 0.16 | 0.10 |
| Soluble iron and its compounds | 3 | 1.5 | 0.15 | 0.08 |
| Flourine content | 8 | 4 | 0.44 | 0.44 |
| Colon bacillus colony count | 3,000 | 1,500 | 620 | 620 |
| Nitrogen content | 60 | 30 | 23 | 23 |
| Phosphorous content | 8 | 4 | 0.99 | 0.99 |
| Mangan and is soluble compounds | Should not be detected | Should not be detected | Below detection limit | Below detection limit |
| Total chromes | 0.1 | 0.5 | Below detection limit | Below detection limit |
| Cadmium and its compounds | Should not be detected | Should not be detected | Below detection limit | Below detection limit |
| Lead and its compounds | Should not be detected | Should not be detected | Below detection limit | Below detection limit |
| Chromium (VI) compounds | 0.05 | 0.025 | Below detection limit | Below detection limit |

Units: mg/ℓ except for pH, colon bacillus colony counts No./cm$^3$

### Air quality

| Item | Regulation standards (incl. agreed standards) | Voluntary regulation standards | Measurement results | |
|---|---|---|---|---|
| | | | Maximum (minimum) | Average |
| Particulates | 0.05 | 0.025 | 0.01 or less | 0.01 or less |
| | 0.1 | 0.05 | 0.02 | 0.01 or less |
| Nitrogen oxides | 150 | 75 | 69 | 66 |
| | 180 | 90 | 74 | 64 |
| | 230 | 115 | 28 | 25 |
| | 250 | 125 | 67 | 60 |
| Hydrogen chlorides | 700 | 350 | 103 | 77 |
| Sulphur oxides | 6.42 | 3.21 | 0.16 | 0.09 |
| Dioxins | 80 | 0.1 | 0.019 | 0.019 |

Units: particulates g/Nm$^3$, nitrogen oxides ppm, hydrogen chloride mg/Nm$^3$, sulphur oxides Nm$^3$/h, dioxins ng-TEQ/Nm$^3$

### PRTR listed substances

| Substance | Volume handled | Volume discharged | | Volume transferred | | | Volume disposed | Volume consumed (transferred to products) |
|---|---|---|---|---|---|---|---|---|
| | | Atmosphere | Public waters | Sewage | Waste disposal sites outside company | Recycling | | |
| 2-amino ethanol | 23,159 | 0 | 0 | 0 | 0 | 0 | 1,188 | 21,971 |
| Ethyl benzene | 37,310 | 36,489 | 0 | 0 | 0 | 0 | 821 | 0 |
| Ethylene glycol | 70,138 | 0 | 0 | 0 | 0 | 0 | 0 | 70,138 |
| Xylene | 395,116 | 381,809 | 0 | 0 | 0 | 0 | 13,307 | 0 |
| Toluene | 127,966 | 125,444 | 0 | 0 | 0 | 0 | 2,522 | 0 |
| Phenol | 16,320 | 0 | 0 | 0 | 0 | 0 | 16,320 | 0 |
| Total | 670,009 | 543,742 | 0 | 0 | 0 | 0 | 34,158 | 92,109 |
| Dioxins (unit: mg-TEQ) | 684.64 | 0.44 | 0 | 0 | 0 | 684.20 | 0 | 0 |

## 2) Groundwater

### Results of Groundwater Measurements Taken at Plants and Factories in Japan in Fiscal 2001

| Substance | Environmental standard | Branch | | | |
|---|---|---|---|---|---|
| | | Saitama Factory Wako Plant | Saitama Factory Sayama Plant | Tochigi Factory Takanezawa Plant | Tochigi Factory Haga Plant |
| Cadmium | 0.01mg/ℓ or less | Less than 0.0001 | Less than 0.001 | Less than 0.001 | – |
| Total cyanides | Should not be detected | 5.8–less than 0.1 | Less than 0.1 | Less than 0.005 | – |
| Lead | 0.01mg/ℓ or less | Less than 0.005 | 0.009–less than 0.005 | Less than 0.001 | – |
| Chromium (VI) | 0.05mg/ℓ or less | Less than 0.04 | Less than 0.04 | Less than 0.005 | – |
| Arsenic | 0.01mg/ℓ or less | Less than 0.005 | Less than 0.0005 | Less than 0.001 | – |
| Total mercury | 0.0005mg/ℓ or less | Less than 0.0005 | Less than 0.0005 | Less than 0.00005 | – |
| Alkyl mercury | Should not be detected | Less than 0.0005 | Less than 0.0005 | – | – |
| PCB | Should not be detected | Less than 0.0005 | Less than 0.0005 | – | – |
| Dichloromethane | 0.02mg/ℓ or less | Less than 0.002 | Undetected | Less than 0.002 | – |
| Tetrachloride carbon | 0.002mg/ℓ or less | Less than 0.0002 | Undetected | Less than 0.0002 | – |
| 1,2-dichloroethane | 0.004mg/ℓ or less | Less than 0.0004 | Undetected | Less than 0.0004 | – |
| 1,1-dichloroethylene | 0.02mg/ℓ or less | Less than 0.002 | Undetected | Less than 0.002 | – |
| Cis-1,2-dichloroethylene | 0.04mg/ℓ or less | 0.007–less than 0.004 | Undetected | Less than 0.004 | – |
| 1,1,1-trichloroethane | 1mg/ℓ or less | Less than 0.002 | Undetected | Less than 0.0005 | Less than 0.001 |
| 1,1,2-trichloroethane | 0.006mg/ℓ or less | Less than 0.0006 | Undetected | Less than 0.0006 | – |
| Trichloroethylene | 0.03mg/ℓ or less | 0.07–0.021 | 0.002–Undetected | Less than 0.001 | Less than 0.001 |
| Tetrachloroethylene | 0.01mg/ℓ or less | 0.002–less than 0.001 | Undetected | Less than 0.0005 | Less than 0.0005 |
| 1,3-dichloropropane | 0.002mg/ℓ or less | – | Undetected | Less than 0.0002 | – |
| Thiram | 0.006mg/ℓ or less | Less than 0.0006 | Undetected | Less than 0.0006 | – |
| Simazine | 0.003mg/ℓ or less | Less than 0.0003 | Undetected | Less than 0.0003 | – |
| Thiobencarb | 0.02mg/ℓ or less | Less than 0.002 | Undetected | Less than 0.002 | – |
| Benzene | 0.01mg/ℓ or less | Less than 0.001 | Undetected | Less than 0.001 | – |
| Selenium | 0.01mg/ℓ or less | Less than 0.005 | Undetected | Less than 0.001 | – |
| Nitrate and nitrite-nitrogen | 10mg/ℓ or less | 5.9 | 6.5–8.9 | 3.1 | – |
| Flourine | 0.8mg/ℓ or less | Less than 0.1 | 0.4–0.6 | 0.2 | – |
| Boron | 1mg/ℓ or less | 0.002 | Less than 0.1 | – | – |

| Substance | Environmental standard | Branch | | | |
|---|---|---|---|---|---|
| | | Tochigi Factory Mohka Plant | Hamamatsu Factory | Suzuka Factory | Kumamoto Factory |
| Cadmium | 0.01mg/ℓ or less | Less than 0.001 | Less than 0.001 | Less than 0.001 | Less than 0.001 |
| Total cyanides | Should not be detected | Less than 0.01 | Less than 0.1 | 1.1–less than 0.1 | Less than 0.001 |
| Lead | 0.01mg/ℓ or less | 0.011–less than 0.001 | Less than 0.005 | Less than 0.005 | Less than 0.001 |
| Chromium (VI) | 0.05mg/ℓ or less | Less than 0.005 | Less than 0.005 | 0.11–less than 0.04 | Less than 0.005 |
| Arsenic | 0.01mg/ℓ or less | 0.006–less than 0.001 | Less than 0.005 | Less than 0.005 | Less than 0.001 |
| Total mercury | 0.0005mg/ℓ or less | Less than 0.0005 | Less than 0.0005 | Less than 0.0005 | Less than 0.0005 |
| Alkyl mercury | Should not be detected | – | Less than 0.0005 | Less than 0.0005 | Less than 0.0005 |
| PCB | Should not be detected | – | Less than 0.0005 | Less than 0.0005 | – |
| Dichloromethane | 0.02mg/ℓ or less | Less than 0.002 | Less than 0.002 | Less than 0.002 | Less than 0.002 |
| Tetrachloride carbon | 0.002mg/ℓ or less | Less than 0.0002 | 0.0002–less than 0.0002 | Less than 0.0005 | Less than 0.0002 |
| 1,2-dichloroethane | 0.004mg/ℓ or less | Less than 0.0004 | Less than 0.0004 | Less than 0.0004 | Less than 0.0004 |
| 1,1-dichloroethylene | 0.02mg/ℓ or less | Less than 0.002 | 0.007–less than 0.002 | Less than 0.002 | Less than 0.002 |
| Cis-1,2-dichloroethylene | 0.04mg/ℓ or less | Less than 0.004 | Less than 0.004 | 0.04–less than 0.004 | Less than 0.004 |
| 1,1,1-trichloroethane | 1mg/ℓ or less | Less than 0.0005 | 0.0042–less than 0.0005 | Less than 0.001 | Less than 0.03 |
| 1,1,2-trichloroethane | 0.006mg/ℓ or less | Less than 0.0006 | Less than 0.0006 | Less than 0.0006 | Less than 0.0006 |
| Trichloroethylene | 0.03mg/ℓ or less | 0.039–less than 0.001 | 0.017–less than 0.002 | 0.025–less than 0.002 | Less than 0.003 |
| Tetrachloroethylene | 0.01mg/ℓ or less | 0.037–less than 0.0005 | 0.0035–less than 0.0005 | Less than 0.0005 | Less than 0.001 |
| 1,3-dichloropropane | 0.002mg/ℓ or less | Less than 0.0002 | Less than 0.0002 | Less than 0.0002 | Less than 0.0002 |
| Thiram | 0.006mg/ℓ or less | Less than 0.0006 | Less than 0.0006 | Less than 0.0006 | Less than 0.0006 |
| Simazine | 0.003mg/ℓ or less | Less than 0.0003 | Less than 0.0003 | Less than 0.0003 | Less than 0.0003 |
| Thiobencarb | 0.02mg/ℓ or less | Less than 0.002 | Less than 0.002 | Less than 0.002 | Less than 0.002 |
| Benzene | 0.01mg/ℓ or less | Less than 0.001 | Less than 0.001 | 3.0–less than 0.001 | Less than 0.001 |
| Selenium | 0.01mg/ℓ or less | Less than 0.001 | Less than 0.002 | Less than 0.001 | Less than 0.001 |
| Nitrate and nitrite-nitrogen | 10mg/ℓ or less | 6.4–7.3 | 6.8–1.6 | 1.27 | 0.4–4.2 |
| Flourine | 0.8mg/ℓ or less | Less than 0.08 | Less than 0.1 | Less than 0.1 | 0.09-0.08 |
| Boron | 1mg/ℓ or less | Less than 0. 1 | Less than 0. 05 | 0. 07 | – |

● The figures in the chart are the certified measurements of a measurement company, and have been listed with no amendment.

Legend
- Undetected, less than ( ): figures are the minimum detectable by the measuring equipment, and indicate that nothing was detected.
- — : items for close inspection during fiscal 2002.

# 3 Overseas Factories Data

## North America

| Item | Company name | Honda of America Mfg., Inc. (HAM) | | | | Honda Transmission Mfg., of America Inc. |
|---|---|---|---|---|---|---|
| | | Marysville Auto Plant | Marysville Motorcycle Plant | East Liberty Auto Plant | Anna Engine Plant | |
| | Country | United States of America | United States of America | United States of America | United States of America | United States of America |
| | Main product | Automobiles | Motorcycles, ATV | Automobiles | Engines | Automatic transmissions |
| Energy | Electricity (1,000 kWh) | 255,012 | 21,015 | 117,893 | 192,816 | 28,500 |
| | Natural gas (1,000 kcf) 〈($m^3$)〉 | 1,140〈32,281〉 | 181〈5,125〉 | 695〈19,680〉 | 489〈13,847〉 | 70.2〈1,988〉 |
| Water | Water usage (1,000 gal.) 〈($m^3$)〉 | 243,831〈923,000〉 | 32,509〈123,060〉 | 127,888〈484,109〉 | 92,349〈349,579〉 | 5,005〈18,946〉 |
| | Waste water (1,000 gal.) 〈($m^3$)〉 | 185,192〈701,028〉 | 26,362〈99,791〉 | 84,612〈320,291〉 | 59,537〈225,372〉 | 1,933〈7,317〉 |
| Total waste (US ton) | | 3,640 | 434 | 1,408 | 6,194 | 449 |
| ISO14001 acquired | | 1998.12 | 1998.12 | 1998.9 | 1998.12 | 1998.6 |

| Item | Company name | Honda Power Equipment Mfg., Inc. | Honda of South Carolina Mfg. | Honda Mfg, of Alabama L.L.C.*2 | Honda of Canada Mfg.(HCM) | | Honda de Mexico S.A.de C.V. |
|---|---|---|---|---|---|---|---|
| | | | | | Plant 1 | Plant 2 | |
| | Country | United States of America | United States of America | United States of America | Canada | Canada | Mexico |
| | Main product | Power products | 4-wheel ATV | Automobiles | Automobiles | Automobiles | Motorcycle, automobile and power product parts |
| Energy | Electricity (1,000 kWh) | 9,840 | 17,773 | 26,782 | 80,984 | 87,506 | 17,928 |
| | Natural gas (1,000 kcf) 〈($m^3$)〉 | 38.0〈1,076〉 | 24.7〈699〉 | 251〈7,102〉 | 477〈13,507〉 | 586〈16,594〉 | 89.7〈2,540〉 |
| Water | Water usage (1,000 gal.) 〈($m^3$)〉 | –*1 | 6,974〈26,399〉 | –*3 | 59,194〈224,074〉 | 138,141〈522,920〉 | 59,739〈226,137〉 |
| | Waste water (1,000 gal.) 〈($m^3$)〉 | 5,433〈20,566〉 | 1,777〈6,727〉 | 10,303〈39,001〉 | – | – | 21,417〈81,072〉 |
| Total waste (US ton) | | 210 | 2,861 | 0 | 1,357 | 1,486 | 661 |
| ISO14001 acquired | | In progress | In progress | In progress | 1998.9 | 1999.10 | 1999.12 |

*1. Certain items unmeasured
*2. Results for December 2001 to March 2002
*3. Measurements start April 2002

## South America

| Item | Company name | Moto Honda da Amazonia LTDA. |
|---|---|---|
| | Country | Brazil |
| | Main product | Motorcycles |
| Energy | Electricity (kWh) | 60,065,953 |
| | Diesel oil (ℓ) | 377,213 |
| | LPG (kg) | 834,809 |
| | Kerosene (ℓ) | 2,944,000 |
| Water | Mains water ($m^3$) | 19,170 |
| | Well water ($m^3$) | 686,294 |
| Waste | Total waste (kg) | 17,851,850 |
| | Recycled waste (kg) | 15,149,510 |
| | Disposed on-site (kg) | 1,009,250 |
| | Stored on-site (kg) | 108,210 |
| | Incinerated on-site (kg) | 1,584,880 |
| ISO14001 acquired | | 1998.10 |

## Europe

| Item | Company name | Honda of the U.K. Manufacturing Ltd. | Honda Europe N.V. | Honda Belgium N.V. | Honda Italia Industriale S.P.A. (ATTESA) |
|---|---|---|---|---|---|
| | Country | United Kingdom | Belgium | Belgium | Italy |
| | Main product | Automobiles, engines | Distribution of completed automobiles and parts | Automobile parts | Motorcycles, power products |
| Energy | Electricity (kWh) | 103,318,506 | 7,021,041 | 8,101,155 | 6,242,343 |
| | Fuel (ℓ) | — | 112,150 | — | — |
| | Natural gas ($m^3$) | 13,931,794 | 35,089 | 181,045 | 1,147,489 |
| | Steam (GJ) | — | — | 7,521 | — |
| | Water ($m^3$) | 416,890 | 11,377 | 1,117 | 23,166 |
| | Total (kWh) | 255,767,747 | 8,579,467 | 17,603,248 | 18,798,790 |
| $CO_2$ (ton) | | 60,170 | 2,528 | 5,967 | 4,338 |
| Water | Waste water ($m^3$) | 165,890 | 11,377 | 6,878 | 27,910 |
| Waste | Recycled waste (ton) | 15,450.59 | 2,094.73 | 906.90 | — |
| | Disposed at external landfill (ton) | 1,923.16 | 0.00 | 373.80 | — |
| | Total waste (ton) | 17,373.75 | 2,094.73 | 1,280.70 | — |
| ISO14001 acquired | | 1998.3 | 1998.3 (Completed automobile distribution)<br>1999.6 (HE) | 1997.3 | 1999.1 |

Continued over

## Europe

| Item | Company name | CIAP.S.P.A. | Montesa Honda Factory S.A. | Anadolu Honda Otomobilcilk A.S. | Honda Europe Power Equipment S.A. |
|---|---|---|---|---|---|
| | Country | Italy | Spain | Turkey | France |
| | Main product | Motorcycle parts | Motorcycles | Automobiles | Power products |
| Energy | Electricity (kWh) | 862,161 | 3,153,785 | 1,989,684 | 1,471,400 |
| | Fuel (ℓ) | — | — | — | — |
| | Natural gas ($m^3$) | 100.951 | 61,932 | 692,140*2 | 305,825 |
| | Steam (GJ) | — | — | — | — |
| | Water ($m^3$) | 2,276 | 23,944 | 64,440 | 8,294 |
| | Total (kWh) | 1,966,822 | 3,831,479 | 10,776,017 | 4,817,901 |
| $CO_2$ (ton) | | 414 | 362 | 3,163 | 1,033 |
| Water | Waste water ($m^3$) | 36*1 | — | 38,926 | 5,886 |
| Waste | Recycled waste (ton) | 207.00 | 661.00 | 29.70 | 870.83 |
| | Disposed at external landfill (ton) | 47.40 | 103.00 | 20.19 | 117.02 |
| | Total waste (ton) | 254.40 | 764.00 | 49.89 | 987.85 |
| ISO14001 acquired | | 1999.6 | 1998.12 | 1999.12 | 1999.1 |

*1: Excluded direct discharge to sewage *2: LPG

## Asia and Oceania (Results from January 2001 to December 2001)

| Item | Company name | Honda Automobile (Thailand)Co.,Ltd. | Thai Honda Mfg. Co., Ltd. | Asian Autoparts (Thailand) Co., Ltd. | Honda Cars Philippines Inc. | Honda Philippines Inc. | Honda Siel Cars India Ltd. | Hero Honda Motors Ltd. |
|---|---|---|---|---|---|---|---|---|
| | Country | Thailand | Thailand | Thailand | Philippines | Philippines | India | India |
| | Main product | Automobiles | Motorcycles, power products | Parts for Automobiles, Motorcycles, Power products | Automobiles | Motorcycles, power products | Automobiles | Motorcycles |
| Energy | Electricity (kWh) | 25,816,800 | 30,278,000 | 14,379,000 | 8,013,335 | 3,662,750 | 3,539,880 | 4,144,702 |
| | Crude oil (ℓ) *1 | 494,198 | 0 | 3,620,389 | 377,270 | 1,028,534 | 1,725,098 | 15,243,296 |
| | LPG (kg) *2 | 6,522,976 | 1,286,542 | 96,954 | 368,047 | 352,968 | 407,210 | 1,762,993 |
| $CO_2$ (ton) | | 41,244 | 27,546 | 21,500 | 6,511 | 5,923 | 8,279 | 48,937 |
| Waste | Reused/recycled (ton) | 7,987.16 | 3,868.80 | 704.30 | 1,594.25 | 539.35 | 1,195.16 | 12,706.80 |
| | Disposed on-site (ton) | 92.46 | 1,422.90 | 93.30 | 126.70 | 6.38 | 0 | 1,307.90 |
| | Disposed at external landfill (ton) | 319.06 | 212.40 | 458.30 | 0 | 4,388.94 | 0 | 144.00 |
| | Total waste (ton) | 8,398.68 | 5,504.10 | 1,255.90 | 1,720.95 | 4,934.67 | 1,195.16 | 14,158.70 |
| ISO14001 acquired | | 1998.12 | 1998.12 | 2001.12 | 1998.12 | In progress | 2001.4 | 1999.6 |

*1: Oils converted as crude oil *2: Gases converted as LPG

| Item | Company name | Honda Siel Power Products | P.T.Honda Prospect Motor | P.T.Astra Honda Motor Inc. | Honda Atlas Cars (Pakistan) Ltd. | Atlas Honda Ltd. | Honda Vietnam Co., Ltd. | Armstrong Auto Parts SDN. BHD. |
|---|---|---|---|---|---|---|---|---|
| | Country | India | Indonesia | Indonesia | Pakistan | Pakistan | Vietnam | Malaysia |
| | Main product | Power products | Automobile parts | Motorcycles | Automobiles | Motorcycles | Motorcycles | Motorcycle, automobile parts |
| Energy | Electricity (kWh) | 2,124,830 | 10,757,740 | 37,306,722 | 4,411,240 | 4,488,808 | 11,420,150 | 5,765,012 |
| | Crude oil (ℓ) *1 | 319,875 | 1,658,827 | 3,723,377 | 442,868 | 573,266 | 132,656 | 289,652 |
| | LPG (kg) *2 | 12,578 | 29,040 | 523,000 | 0 | 372,033 | 1,273,333 | 25,200 |
| $CO_2$ (ton) | | 2,357 | 12,049 | 37,326 | 3,417 | 4,806 | 5,586 | 5,301 |
| Waste | Reused/recycled (ton) | 770.65 | 1,187.64 | 8,827.52 | 1,463.00 | 1,393.45 | 896.50 | 115.10 |
| | Disposed on-site (ton) | 28.80 | 0 | 0 | 0 | 45.20 | 527.00 | 0 |
| | Disposed at external landfill (ton) | 0 | 203.94 | 103.16 | 0 | 112.30 | 0 | 0 |
| | Total waste (ton) | 799.45 | 1,391.58 | 8,930.68 | 1,463.00 | 1,550.95 | 1,423.50 | 115.10 |
| ISO14001 acquired | | 1999.12 | In progress | 2000.9 | In progress | — | 2001.9 | In progress |

*1: Oils converted as crude oil *2: Gases converted as LPG

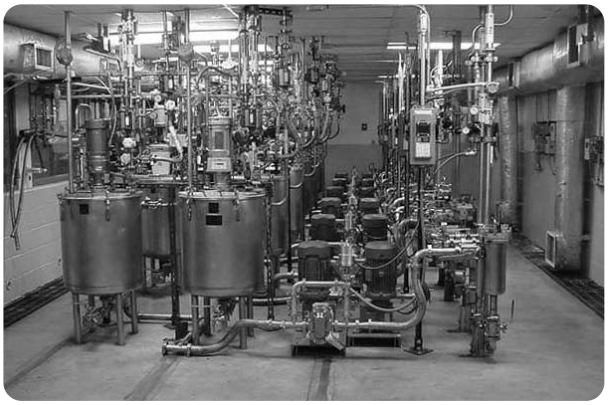
| Item | Company name | Honda Autoparts Mfg. SDN. BHD. | Dongfeng Honda Auto Parts Co., Ltd. | Dongfeng Honda Engine Co., Ltd. | Guangzhou Honda Automobile Co., Ltd. | Wuyan-Honda Motors (Guanzou) Co., Ltd. | Jialing-Honda Motors Co., Ltd. | Honda Mingdong Generators Co., Ltd. |
|---|---|---|---|---|---|---|---|---|
| | Country | Malaysia | China | China | China | China | China | China |
| | Main product | Automobile parts | Automobile parts | Automobile parts | Automobiles | Motorcycles | Motorcycles | Power products |
| Energy | Electricity (kWh) | 3,200,762 | 9,919,272 | 6,927,060 | 36,891,357 | 13,976,800 | 4,326,800 | 977,400 |
| | Crude oil (ℓ) *1 | 7,148 | 14,116 | 226,432 | 2,910 | 2,590,665 | 364,353 | 45,425 |
| | LPG (kg) *2 | 9,816 | 0 | 240,000 | 82,340 | 199,000 | 119,207 | 0 |
| $CO_2$ (ton) | | 2,507 | 6,902 | 6,176 | 25,784 | 17,182 | 4,299 | 799 |
| Waste | Reused/recycled (ton) | 85.07 | 1,118.50 | 0 | 13,761.97 | 2,748.62 | 163.70 | 67.60 |
| | Disposed on-site (ton) | 35.60 | 0 | 2,119.44 | 0 | 0 | 0 | 0 |
| | Disposed at external landfill (ton) | 89.18 | 438.00 | 369.00 | 1,540.39 | 1,620.00 | 20.00 | 0 |
| | Total waste (ton) | 209.85 | 1,556.50 | 2,488.44 | 15,302.36 | 4368.62 | 183.70 | 67.60 |
| ISO14001 acquired | | In progress | In progress | In progress | 2001.11 | In progress | — | — |

*1: Oils converted as crude oil *2: Gases converted as LPG

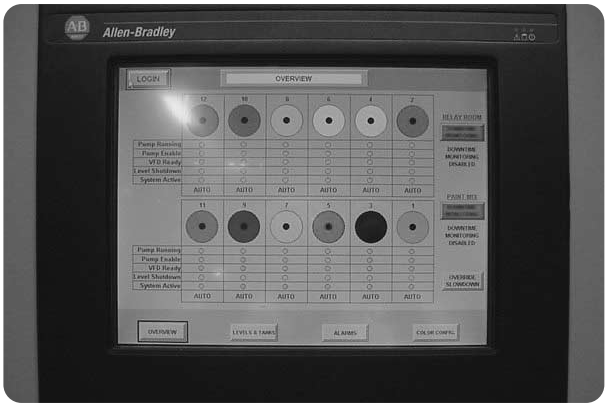
Data are available to the public on the Internet: world.honda.com/environment/2002report/

# 1 The Americas

## Energy-Saving Activities (U.S.)



Energy saving measures taken at ELP
■ Electric motor for transporting paint
(Small cylindrical object in the center of the photo)




Energy saving measures taken at ELP
■ Central monitoring panel to show the remaining amount of paint and motor operations

● Honda of America Mfg. Inc. (HAM), which is Honda's production center in North America, has been reducing the environmental impacts of its production activities based on its own environmental policies.

At its East Liberty Auto Plant (ELP), the energy and water consumption of each production process is centrally managed and thorough surveys are conducted and effective measures are taken when processes with room for improvement are found. For example, the plant achieved a large 53% reduction in its use of energy by improving energy use efficiency on holidays, and by replacing hydraulic motors with electric ones for transporting paint to the coating process.

## Contribution to Environmental Protection by Local Exchanges (U.S.)

Catching Canada geese for protection and ringing them
■ A contribution to research for the protection of the local ecosystem

● Honda of America Mfg., Inc. (HAM) has been aggressively contributing to the protection of nature as well as to the improvement of local areas.

For example, on the approximately 1.2 million square meters of land alongside Darby Creek, which is within the premises and rented out as farmland to local people, the company has created a pond for flood control, and has been studying which plants are effective for soil and water conservation.

It has also been conducting surveys on the changes happening in the local ecosystem, which seem to be partially caused by climate change. In recent years, it has been observed that wild geese, which migrate to the local lakes from Canada to spend the winter, stay at the lakes even after winter has gone. The factory, in cooperation with local NGOs and universities, has conducted research on the issue to protect the local ecosystem, catching the wild geese for protection and ringing them.

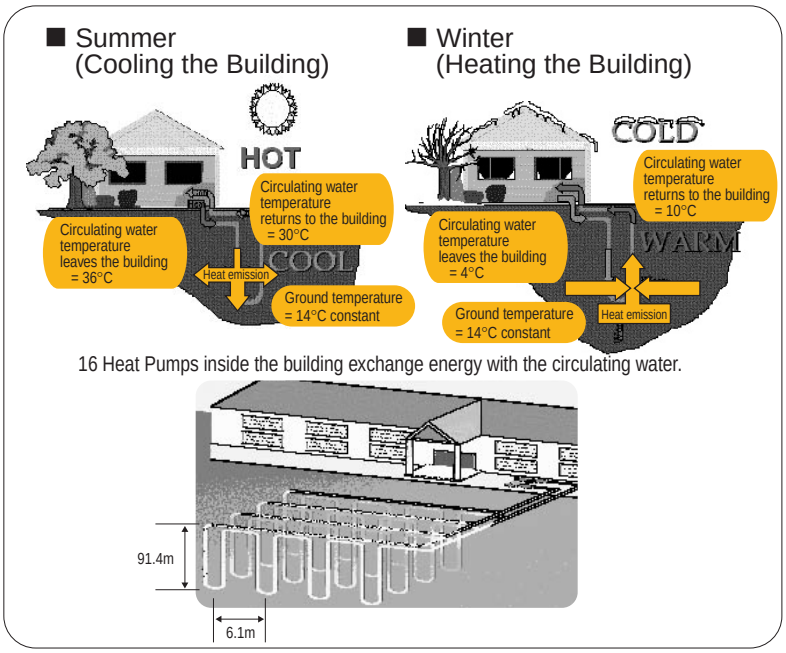
Furthermore, the company gives support to local academic organizations and holds events for exchanges with local citizens, to create rich local communities in partnership with local people.

## Geothermal Heating and Cooling for HTM's Technical Center

Natural light skylights

New Technical Center

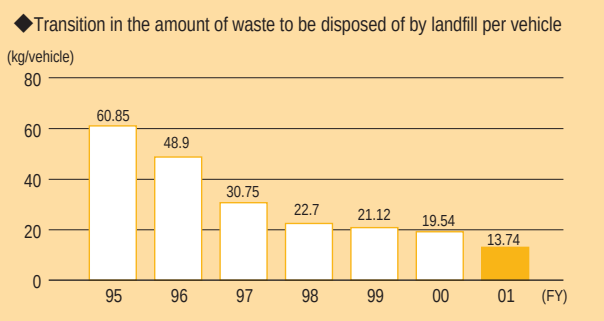
● Honda Transmission Mfg. of America, Inc. (HTM), the production center for automatic transmissions in the Americas, is located in Ohio and has introduced a 1st in Honda: Geothermal Heating & Cooling. This new technology is being utilized for its newly established Technical Center, a test & analysis building for transmission Product Engineering & Market Quality. As a result, this building does not use any natural gas. It uses only electricity and utility costs are less than 50% of a typically heated & cooled building. The Technical Center also incorporated a range of other innovative ideas, including radiant floor heating, and the "harvesting" of natural sunlight, to provide its associates with a comfortable working environment that is at the same time, energy efficient.




Geothermal System introduced at the HTM Technical Center

# 2 Europe

## Reduction of Waste at Green Factories (in the U.K. and Turkey)




● Honda of the U.K. Mfg., Ltd. (HUM) succeeded in reducing the amount of landfill from 60 kg per vehicle to 14 kg, as a result of implementing waste prevention measures including the reuse and recycling of waste.

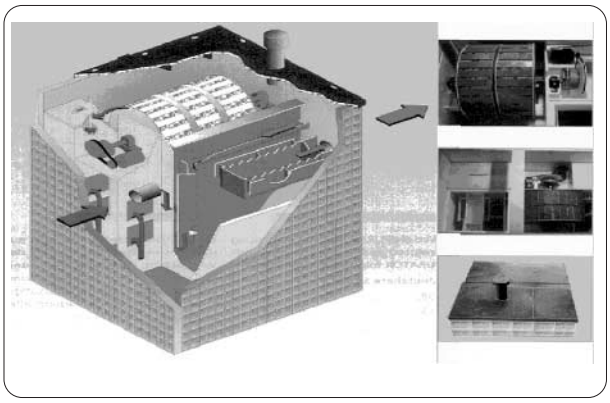
● Anadolu Honda Otomobilick A.S. (TAH) reduced solid waste generated by the production of a vehicle to 18%, and harmful waste to 20% last year. This was achieved by using local supplies of materials, which accounted for 86% of all material supplies, in returnable cases as well as by the recycling or reuse of hazardous waste.

In addition, the introduction of electrostatic guns reduced paint drips by approximately 18%, and the use of solvents were also reduced by approximately 23% in the coating process.

At the company, hazardous waste is carefully sorted, and clothes and gloves that are tainted with pollutants are washed before being disposed of.

Wasted solvents, paints, and oil are recycled and paint sludge is 100% reused in the paint manufacturing process. Furthermore the company has been making continuous efforts to reduce the use of consumables.

## Installation of New Water Purifying Equipment to Improve the Quality of Treated Wastewater (in Belgium)

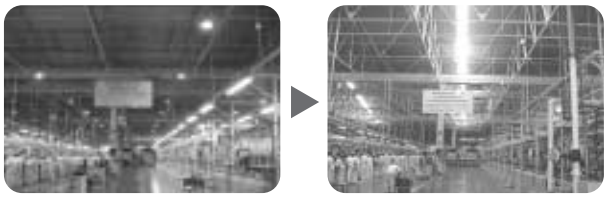


Bio-rotor (water purifying equipment)

- Honda Europe N.V. (HE) installed bio-rotors to improve the quality of treated wastewater. The rotors stir the wastewater, introducing fresh air to activate the bacteria in the water, and thereby purifying it. HE regards the treatment and further purification of wastewater as one of its most important tasks.

# 3 Asia & Oceania

## Reduction of Electricity Consumption by the Use of Natural Light (in Thailand)



Before the installation of skylights

After the installation of skylights

- Thai Honda Mfg. Co., Ltd. (THM) replaced mercury vapor lamps with fluorescent lighting fixtures (each with two tubes) and thereby reduced the consumption of electricity for lighting equipment.

  To further save energy, THM has installed skylights in the roof of its factory. Because natural light streams in through them, there is no need to turn on the lights during the 8 hours of daylight, which is half the time that the factory is in operation. The company has greatly reduced its electricity consumption.

## Reduction of Waste (in Thailand)

Materials before volume reduction

Foam melting machine

Packaging materials the volume of which was reduced by heating

- Honda Automobile (Thailand) Co., Ltd. (HATC) has been promoting the recycling of packaging materials for knock-down parts. By introducing foam melting machines that reduce the volume of packaging materials by heating, the company has achieved a 95% reduction in volume.

  As a result, waste packaging materials, which were costly to dispose of in the past, are now able to be recycled.

## Persons Responsible for Commitments

**Sales and Services**

Automobile sales: Shoji Azuma
Masao Koike
Motorcycle sales: Tatsuhiro Oyama
Power product sales: Toshimi Wakamatsu
Parts sales: Kazuyuki Ariyoshi

**Purchasing**

Automobile purchasing: Tomonao Osaka

**Factory and Office Operations**

General Environmental Adminstrator
Saitama Factory: Hideshi Obata
Tochigi Factory: Hiroshi Sato
Hamamatsu Factory: Yukihiko Takamura
Suzuka Factory: Katsumi Watanabe
Kumamoto Factory: Katsushige Hoshino
Head office: Nobutaka Okabe

**Logistics**

Products and K.D. parts: Mitsuhiro Chiba

**Administration**

Administration: Nobutaka Okabe
Personnel: Noboru Kamimura
Public Relations: Hiroshi Oshima

**Secretariat**

Environment and Safety Planning Office:
Keiichi Mitobe

Note) As of June 2002

## ■ External Verification

For the reasons given below, we have not obtained any external verification.

1. No guidelines have been established for external verification.
2. The qualifications required of the verification organizations are not clear.

We will continue to examine the details and timing of external verification, paying attention to the progresses made in relation to the items described in the above.

The results presented in this Report have been collected by each of the active departments concerned and endorsed within the Japan Environmental Committee's system. Data relating to the factories has been checked by environmental audits, and surveillance inspections under ISO14001.

For all inquiries concerning the contents of this report, please contact us at the following address:

**Environment and Safety Planning Office**

**Tel.81-3-5412-1155 Fax.81-3-5412-1154**

HONDA

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100% bagasse (cane trash) using waterless soy-based inks.

**Honda Motor Co., Ltd.**
1-1, 2-chome Minami-Aoyama, Minato-ku, Tokyo

Published : August 2002

ASMA 20000208

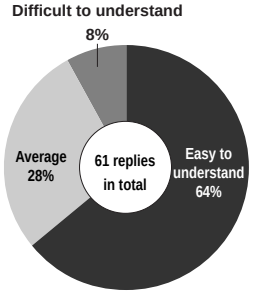
# Results of the Questionnaire and Interviews on the Honda Environmental Annual Report 2001*

**Questionnaire: Conducted from August 2001 to May 2002 (61 replies in total)**
**Interviews: Conducted from January to February 2001 (6 interviewees in total)**

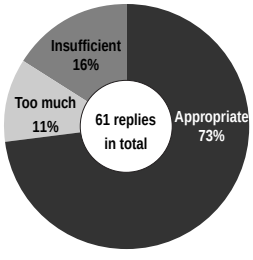
* We selected six persons from those who replied to the questionnaire to interview on the subject of what they thought of the report and Honda's environmental conservation activities.

## Major Findings

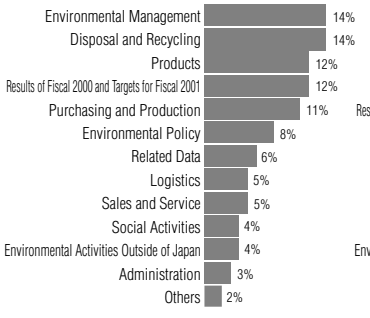
### ■ Intelligibility



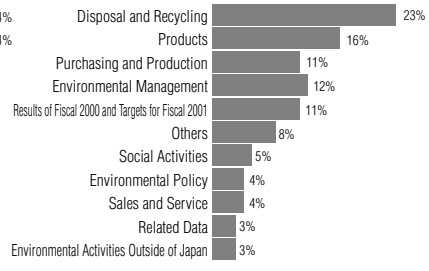

### ■ Amount of information




### ■ Part found most interesting




### ■ Part that needs to be improved




## Main Opinions and Requests from Our Readers and Honda's Responses

### Opinions and Requests regarding Honda Environmental Annual Report 2001

● **"Would like to have specific examples of LCA."**
→In the Honda Environmental Annual Report 2002, we give a specific example in the section titled "Promotion of Life Cycle Assessment (LCA)." (on page 21).

● **"Would like you to specify your ISO14001-certified business sites."**
→In the 2002 version, we show the business sites that acquired certification in fiscal 2001 under the new title of "Environmental Management by Honda's Business Sites" (on page 16).
We also show the dates on which Honda's business sites acquired ISO14001 certification in the section titled "Japanese Factory Data" (on pages 47 to 51 and "Overseas Factory Data"(on pages 53 to 54)).

● **"Would like you to publish the report earlier in the year."**
→The publication of this 2002 version was set to be in early July, which is one month earlier than last year's publication in August.

● **"The font is too small to read."**
→In this 2002 report, we use a larger font to ensure readability.

### Requests regarding Honda's Environmental Conservation Activities

● Accelerated promotion of LCA
● Development and popularization of environmentally friendly vehicles
● Contribution to the development of environmentally friendly transport systems
● Expansion of nature protection activities
● Aggressive utilization of circulating resources such as vegetable fibers
● Global environmental business beyond national boundaries
● Activities involving all Honda group companies (especially for green purchasing and recycling)
● Environmental management compatible with profitability

The opinions you have kindly presented to us are of immense value to use in our future environmental conservation activities and the disclosure of Environmental Information, including the Honda Environmental Annual Report.
We sincerely thank you for your cooperation.

## We hereby request all our readers to let us have the benefit of their opinions and ideas.

Our "Honda Annual Environmental Report 2002" presents a summary of the results of our environmental commitments in fiscal 2001 from the viewpoint of the life cycle of our products. Our goal is to give details of our commitments and activities in the most concise manner in concrete figures and data that measure up to objective evaluation.

We will strive to enrich the content of our Report by giving full consideration to your opinions, ideas and advice.

To help us achieve this goal, we would be most grateful for your cooperation in completing the questionnaire on the back of this leaf and sending it back to us.

FAX: 81-3-5412-1154

You can answer the questionnaire also on our Web site.

world.honda.com/environment/2002report/report_enq.html

**Environment and Safety Planning Office, Honda Motor Co., Ltd.**