## Clean Plants

## Promote Considering Environment in the Production Stages

SUBARU has proactively addressed energy conservation while cutting costs by eliminating waste and losses for protection of the environment.
Additionally, about the amount of landfill waste, Fuji Heavy Industries Ltd.'s all manufacturing plants have been keeping on zero emissions since FY2004.

## Effort in the Production Stage

## Amount of Resources Input and Total Emissions at Automobile Production (Gunma Manufacturing Division)

This figure shows the amount of resources used and emissions in FY2009 at Gunma Manufacturing Division, SUBARU's main automobile production plant.
[Legends on the figure : 1 Gunma Manufacturing Division, 2 FHI Total, (3) 5 Domestic Affiliated Companies, 14 Total of 5 North American Environmental Committees]

- Amount of Resources Input and Emissions


Approaches to Global Warming Prevention

## Activities for $\mathrm{CO}_{2}$ Emission Reduction and Energy Saving

We have been engaged in various activities to reduce $\mathrm{CO}_{2}$ emission and energy use by such energy saving measures as introduction of cogeneration system of natural gas, changeover from heavy oil to gas for boilers, reduction of standby electricity and taking energy cutting actions focused on energy intensive processes. Although the total emission volume varies from year to year due to the change in production volume, in FY2009, a total of about 196,500 tons of $\mathrm{CO}_{2}$ was emitted, which was lower than the level of FY1990 by $28 \%$.

We are now working aggressively on a padded $\mathrm{CO}_{2}$ reduction of 22 \% against FY 1990 , while the 4th Voluntary Plan for the Environment set 15 \% reduction for the total $\mathrm{CO}_{2}$ emission volume as the target for FY2010 against FY1990.


Reduction of Substitute CFC (HFC134a) Emitted to the Air To reduce atmospheric emissions of HFC134a used as a coolant from the vehicle manufacturing line at Gunma Manufacturing Division, we have continued effort to minimize leakage while pumping and recovering gas in air conditioner. As a result, we have succeeded to reduce emissions by over 95\% compared to FY1996 levels since FY2003 and have been kept its reduction of $97 \%$ since FY2006.

## Reduction of Waste Generation

## Keeping on zero emissions for waste generations in all manufacturing plants

All manufacturing plants have maintained zero emissions for waste generations since FY2004. Outline of waste generation and disposal in FY2009 is as follows.

- Outline of Waste generation and disposal at All Manufacturing Plants and Automobile Manufacturing (Gunma Manufacturing Division) in FY2009



## Efforts to Reduce Waste Generation

Since we consider that the generation of waste generation itself is a "waste", we have been making a continuous effort to achieve "zero emissions" and to curb the generation of waste generation.

We have been striving to effectively utilize resources by improving the yield ratio of raw materials used in the production stages and enhancing coating efficiency at paint factories.

The right graph shows the indexes obtained by dividing the ratio of the amount of by-products (scrap metal and non-ferrous scrap metals such as aluminum) generated by the automotive division by the value of shipped products. In FY2009, we got the best result ever; 6.01. Also, we have achieved at the target levels (of the amount by-products should be reduced, as determined by the Laws for the Promotion of the Effective Utilization of Resources) for a series of 7 years since FY 2003.

Trends of Amount of By-products Generated to outputs of Products


## Efforts to Reduce Consumption of Water Resources

## Water Resources Protection Activity

Total water consumption was about 2,838,000 m³ at all our manufacturing plants in FY 2009 and this is a decrease of $15 \%$ compared with the previous year.

The effort of implementing due to strict measures such as checking for leakage from water pipes at each
manufacturing plant or changing decrepit pipes have been done. The result is 54\% decrease compared with FY1999, a point of view with output per unit.
*About the trends of water consumption please refer page 46 in this report.

# Approach the Reduction of Environment-unfriendly Substances 

Management of Chemical Substances (the PRTR Law) We use 18 chemical substances subject to the PRTR Law. Use of such chemicals at all our manufacturing plants totaled 665 tons in FY2009, achieving a big reduction of about 17 tons compared with the previous year. These achievements result from activities such as reducing paint used in the vehicle or refuse collection vehicle body painting process and reducing the amount of thinner for cleansing.

* About the trends of excretion amounts in substances subject to the PRTR Law, please refer page 46 in this report.


## Air Pollutants

Trends in total amount of Nitrogen Oxides (NOx) and Sulfur Oxides (SOx) emitted from specific facilities such as boilers at all manufacturing plants are as shown in the graph of page 46 .

Periodical measurement results of both NOx and SOx in FY2009 show that our voluntary standards are satisfactory at all locations measured.

## Water Pollutants Substances

Trends in the amount of nitrogen, phosphorous and BOD discharged into water at all our manufacturing plants are as shown in the graph of page 46.

In FY2009, the results of periodic measurements showed that 1 case has exceeded our voluntary standards. For cases of other substances in violation of limits including our voluntary standards, please see "The Number of Cases Where Limits Set in Environmental Laws and Regulation were Exceeded and Details" on page 45.

## VOC (Volatile Organic Compounds) Generated in

 Paint Process at Gunma Manufacturing Division The amount of VOC emissions per unit paint area in FY2009 was $52.8 \mathrm{~g} / \mathrm{m}^{2}, 42.2 \%$ less than that in FY2000, reaching the target in the 4th Voluntary Plan for Environment* ${ }^{* 1}$ ahead of schedule. This is mainly due to the switch to water-base paint in the new paint shop and the higher thinner collection rate. We will keep working for further reduction.※ 1 the Goal of the 4th Voluntary Plan for Environment is to reduce VOC emissions per unit by $30 \%$ less than that in FY2000 by the end of FY2010.

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

## Storage of Equipment Containing PCB

We store PCB appropriately and notifies the authorities of possession of PCB in accordance with the related laws and regulations every year. Regarding the equipments (such as transformers and condensers) we store that contain a high concentration of PCB, we already applied and registered for their disposal with the Japan Environmental Safety Corporation (JESCO) in March 2006 and it will be started to disposed in FY2011.

* For more characteristic information of each manufacturing, please refer our Site Report on page 63 to 92.


## Toward Reducing Environmental Impact in Logistics

SUBARU contributes to the reduction of environmental impact by setting optimal transportation routes, promoting modal shift in shipments of finished vehicles, cooperative trunsports of finished vehicles with other companies in the same trade. Reduction of packing materials by their reuse is also actively being tackled with.

## Reducing Environmental Burdens by the Completed Vehicles Transportation

Efforts by Subaru Logistics Co., Ltd
We have contributed to reducing environmental burdens caused during the transportation of completed vehicles, by improving transportation efficiency through such means as setting optimum standard transportation routes, promoting modal shifts and improving carrying efficiency. In FY2009, by promoting the cooperate transports of completed vehicles with other companies in the same industry, the total of consigned-to and con-signed-from vehicles was 29,954.

In FY2009, we promoted the installation of the highly functional digital tachograph, idling stop device and eco tires. Meanwhile, continuous efforts have been made to accurately grasp energy consumption and $\mathrm{CO}_{2}$ emissions by collecting data on travel distances and fuel consumptions periodically from cooperative companies. As a result of these approaches, we have achieved at about $1 \%$ improvement compared to the previous year in fuel economy, and been continuing to reduce the energy consumption per sales by $1 \%$ or more annually.

Trends in the Number of Vehicles Carried Through Cooperative Transports
(Unit)
50,000 -



## Reuse of Packaging Materials

Approaches to Reduction of Foam Materials for Packaging of Overseas Knockdown Parts by Reuse The Production Logistics Division of Subaru Logistics Co., Ltd, which handles packing designs for knockdown parts have been involved in activities to reduce environmental burdens primarily focusing on the reuse of packaging materials. Starting from March, 2006, Styrofoam packing materials and vacuum form packing materials have been reused and in FY 2008, we cut newly purchased materials to zero, shipping all goods with recycled materials. Also, the new type of Styrofoam packing materials introduced in FY2009 along with redesigned style of part packaging is now in use for shipment.

In order to a higher recycling rate, currently used packing materials will be thoroughly reviewed for expanded use of reused materials to minimize wastes.

- Trends in the Amount of Styrene Foam Packaging Materials for Reuse

- Trends in The Amount of Styrene Foam Packaging Materials for Reuse purchased
(\%)
120 -



## Aimed at Expanding "Green Dealerships"

To enhance our environmental protection activities into SUBARU Dealerships, we have promoted the environment management system "Eco-Action 21" certification.
In the midst of rising customers' environmental awareness, we accelerate the activities to aim familiarized Eco-vehicle and "Green Dealer Outlets" at the same time.

## Environmental Protection Activities in SUBARU Dealerships

## Promoting acquisition of the Eco-Action $21^{* 1}$ certification

To beef up our approaches to the environmental protection, we began from September 2008 introducing the environment management systems "Eco-Action 21 (EA21)" which was mapped out by the Ministry of the Environment based on ISO14001*2. By the end of March 2010, 20 out of 45 domestic dealerships have acquired EA21 certification. We will keep working to expand the scope for acquisition of the EA21 certification.
※ 1 The following approaches are needed to acquire EA21 certification of; Establishment of the EMS

- Grasping the amount of $\mathrm{CO}_{2}$ emissions, waste generation, water consumption and Setting the goal of reduction and its try - Making and issuing the Environmental activities Report regularly
※2 The Following 2 dealerships have been keeping acquisition of the ISO14001certification. FUUI SUBARU INC. . OSAKA SUBARU INC.
※3 In the Kyushu district, FUKUOKA SUBARU INC. and its five business units have the certification under the name of FUKUOKA SUBARU INC.
※4 Introducing the approach of acquisition of EA21 certification at TOCHIGI SUBARU, INC. on the page 15 as a feature article.
- The Status in Acquisition of the EA21 certification [As of April 1, 2010 with acquired order]

| Company | Acquisition Date | Acquisition numbers | Number of the deater which supply new automobile |
| :---: | :---: | :---: | :---: |
| TOKYO SUBARU INC. | Jan 27, 2009 | 0003261 | 32 |
| SAITAMA SUBARU KK | Feb 25, 2009 | 0003347 | 18 |
| NAGOYA SUBARU INC. | Apr 30, 2009 | 0003592 | 19 |
| HIGASHI SHIKOKU SUBARU INC | May 29, 2009 | 0003691 | 10 |
| SHIKOKU SUBARU INC | May 29, 2009 | 0003692 | 8 |
| HIROSHIMA SUBARU INC. | Jun 23, 2009 | 0003777 | 8 |
| GIFU SUBARU INC. | Jul 21, 2009 | 0003889 | 9 |
| YAMAGUCHI SUBARU CO., LTD. | Jul 31, 2009 | 0003965 | 10 |
| MIE SUBARU INC. | Aug 28, 2009 | 0004068 | 7 |
| KANAGAWA SUBARU CO. | Aug 28, 2009 | 0004069 | 24 |
| SAN-IN SUBARU INC. | Aug 28, 2009 | 0004070 | 9 |
| OKAYAMA SUBARU INC. | Aug 28, 2009 | 0004071 | 7 |
| NANSHIN SUBARU INC. | Sep 29, 2009 | 0004188 | 1 |
| FUKUOKA SUBARU INC. | Mar 11, 2010 | $0004737 * 3$ | 19 |
| NISHIKYUSYU SUBARU INC. |  |  | 12 |
| KUMAMOTO SUBARU INC. |  |  | 8 |
| OOITA SUBARU INC. |  |  | 5 |
| MINAMIKYUSYU SUBARU INC. |  |  | 12 |
| SHIN OKINAWA SUBARU INC. |  |  | 3 |
| TOCHIGI SUBARU, INC. ${ }^{* 4}$ | Mar 18, 2010 | 0004739 | 12 |



## TOKYO SUBARU INC. introduced their EA21 activity

In June 2009, Mr.Soeno, Managing Director of TOKYO SUBARU INC. made a speech under the theme of "On Acquisition of the Eco-Action 21" to the audience from companies who are studying the introduction of the EcoAction 21. The speech was made at a seminar on the introduction of the Eco-Action 21 which was hosted by EcoAction 21 Regional Office Tokyo Central.

