# Environmental & Social Report 2012

Kanto Auto Works, Ltd.

# Contents



**Regarding Editing**

Kanto Auto Works has issued the “Environmental & Social Report” every year since fiscal 2000 to announce the results of environmental measures.

This fiscal 2012 edition has been edited carefully with priority on making the activities of our company “easy to understand”.

*This report mainly reports environment oriented activities for fiscal 2011 (April 2011-March 2012) as compiled on an independent basis by our company, with a portion of data from fiscal 2012 as well.

# Top Message

## Greetings

### We contribute to communities and society through cars and manufacturing

President Hattori Tetsuo
服部 悦夫

## Introduction

We would like to express out heartfelt sympathy to those affected and the families of those affected by the Great East Japan Earthquake which occurred in march of last year. We continue to pray and provide all possible support for the fastest possible recovery.

## Looking back on the past year

Last year I was reminded anew of the fearful power of nature and our powerlessness against it as I witnessed the Great East Japan Earthquake and the Thailand floods. We have implemented a large number of measures learned from our numerous past experiences as human beings, but unfortunately there is no technology which can withstand natural threats of an unimagined scale.

In addition, the continuous disorder triggered by the natural disasters made the issues of the supply chain for procuring parts in the automobile industry stand out, leading to necessary repetition of cessation of production and recommencement and transition to new measures.

It could be said, that against this background, the rotating days off to save energy were a result of our overreliance on nuclear energy for power supply to reduce use of fossil fuels and CO2 generation, and because we had become too used to the idea that power would always be provided somehow, our sensitivity to future power issues had become dulled. We plan to continue to make efforts towards implementing measures to resolve environmental and energy issues in the future.

## Working towards sustainable development

For automobiles as well, in recent years the diversification of the powertrain has also become a notable issue. In addition to further improvement of various types of internal combustion engines, it is predicted that the propagation of hybrid vehicles (HV), plugin hybrid vehicles (PHV), and electric vehicles (EV) along with social and infrastructure adjustment will not be a transient phenomena, but instead that electrification will continue to progress to an even greater degree.

Our company has also become able to manufacture the “Aqua” compact HV vehicle, and provide society with a product with leading-edge environmental performance. In the development of the Aqua’s body, which our company was in charge of, we improved fuel costs by making the vehicle more lightweight and promoted recycle design and reduction of substances of concern, aiming towards a truly environmentally friendly product from every stage of the product’s life from production to disposal.

From here on, we plan to continue to development environmentally friendly recyclable materials and energy and implement even greater energy saving measures in every stage of our products from planning and development to production to preserve for future generations the natural “environments”, “resources” and “safety” we believe necessary. We also plan to focus more intensely on “sustainable plant” activities for our plants to coexist with communities and in harmony with nature.

As a member of society, we as a company plan to remain thankful and modest for this “gift of life” in all of our actions, and seek to fulfill all of the expectations placed upon us. We humbly thank you and ask for your continued support.

June 2012

# Governance



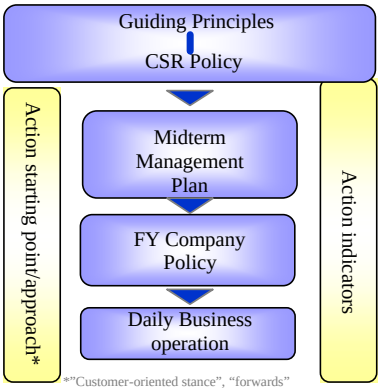
## Corporate Philosophy

**We contribute to communities and society through cars and manufacturing**

### Guiding Principles (Established 1992, Revised 1998)

Management views and values were clearly specified and established as the “Guiding Principles” in 1992.
The details of this philosophy are shared and understood by all employees and conveyed through all generations through business activities.

1. Honor the language and spirit of the law of all nations and endeavor to build a company trusted by society through open business activities.
2. Actively engage in ensuring harmony with society and the environment through all business activities.
3. Diligently carry out research and creation based on a philosophy of “customers first” and provide appealing products which satisfy the needs of the times.
4. Create a lively corporate culture full of creative and challenging spirit and promote long term growth.
5. Respect self development and drive and create pride and ambition for company employees.
6. Strive for mutual research based on a foundation of fair transactions and mutual trust to promote long term development.




*”Customer-oriented stance”, “forwards”

CSR Policy: Adjust “Guiding Principles” through relationships with stakeholders
Action Indicators: Circumstances and mental attitude for specific actions

Reflect the “Guiding Principles” in every business activity.

### Views on CSR (Corporate Social Responsibility)

The “Guiding Principles” is incorporated into a “CSR Policy” established based on the social responsibility the company should assume in all relationships with customers, employees, suppliers, shareholders, regional and global society and all other company stakeholders, and this policy is promoted among all employees.


“CSR Policy” carry card

### Action Starting Point/Approach

In fiscal 2003 we declared the “**Customer-oriented stance**” as part of our activities aimed at “establishing a customer based corporate culture”.

In addition, our action approach is shared with all employees and summed up with the word “**forward**”, and this “forward” oriented action approach is promoted in all business activities.

**当社はお客様本位の会社です。**
**We will do our best for all customers.**

Action Starting Point:
“The Customer-oriented Stance”

# Management Policy

## We contribute to realize a part of Toyota Global Vision from Tohoku area

The world economy is on a slow upswing but the situation is still unclear due to European financial uncertainty and concerns over the decelerating growth of developing countries. A number of large issues have accumulated in the Japanese economy as well, including the continuing strong yen and securing of future energy source, and the path to full recovery continue to be unclear.

In the automobile industry, growing demand from developing countries, and market growth and expansion resulting from gradual recovery of the global economy are expected, leading to increased intensity of manufacturer product development to suit regional needs and global multipolarization including increased localization of development and production.

In this severe business environment, our company has proceeded with reforms combining vehicle and unit creation in order to accelerate measures aimed at being a “Car Maker”, and according we will merge with Central Motor Co.LTD and Toyota Motor Tohoku Corporation in July to become “Toyota Motor East Japan Inc.”, making Tohoku the third largest production base for Toyota within Japan. We aim for this new merger to “manufacture the most competitive compact cars in the world from our Tohoku area”.

Toyota Motor East Japan Inc. will continue to develop and expand upon the efforts of our company up until now and will focus on promoting the 3 important items below.

1. Promotion of functional enhancement and area expansion in order to become a compact car specialist organization.
2. Promotion of measures to merge with the region to make Tohoku a manufacturing base.
3. Promotion of measures to create the personnel who serve as the base of the organization and increase teamwork.

We will aim to remain in harmony with customers, society and the environment and continue to remain earnest and modest in all of our efforts in order to realize these goals and contribute to the global growth of the Toyota Group.

**We contribute to realize a part of Toyota Global Vision and enhance Toyota Group's capability**

## Aqua Hybrid Vehicle Production Commencement

- Design that combines fun and innovation
- Superior fuel consumption characteristics
- Excellent quietness
- Low center of gravity, stable running

- Uses comfortable size front seats

- Spacious baggage area

- Clear and attractive meters

## Customer Opinions

Shizuoka Prefecture Resident
Imai

A compact size hybrid.
The expected good fuel consumption. Runs very quiet and I am very satisfied.

Kanagawa Prefecture Resident
Hayashi

Stylish but with a lot of storage and attention to details. A very comfortable to drive car. A car that is very friendly to both the environment and the wallet.

Shizuoka Prefecture Resident
Hashimoto

The fuel consumption is as good as expected.
The car looks small, but the interior is surprisingly roomy.

## Line-off Ceremony Held at Iwate Plant

A line-off ceremony was held at the Iwate plant for the Aqua Prius C* on January 17, 2012.

Visitors included Toyota Motor Corporation president Toyoda Akio and the honored chairman Toyoda Shoichiro in addition to numerous participants from dealerships and suppliers, and from our company president Hattori and other officers and relevant department as well as Iwate plant employees participated.

*Prius C: The overseas Aqua specification


The “Aqua”. that we put our hearts into building, makes its way to customers

## Message from the Developer

### Aiming for a compact car with a vision for the next 10 years

Technical
Management Division
Yoshikawa Daisuke

The Aqua was developed with an aim to creating a vehicle that could bring about a compact car revolution with the belief that “I wanted more people to enjoy hybrid vehicles (hereafter ‘HV’)” through the Aqua.
During development I experienced a major disaster, and a number of unanticipated issues came up, but we were able to deliver the product to customers on schedule. I think this was the result of the flexible and speedy handling by each supervisor all the way to top management working together as a company.

At present, production is being carried out at the Iwate plant, and I hope that in addition to creating a vehicle which customers truly feel has “no substitute”, that it can serve as a “guiding star for recovery of the Tohoku region” by always continuing development that exceeds all expectations.

## Message from the Production Engineer

### Acquiring HV knowhow and technology from a large number of issues

Production Engineering II
Division Assembly
Engineering Department
Sugihara Mitsuro

In preparation for our company’s first HV production, we worked together with various supervisors and relevant departments through the assembly process, which has the most changes, and the start up of 2 lines heading into startup for this production.

For the main battery, inverter, electronic control braking system and other HV specific structures in particular, because we had no in-house knowhow, we started an “HV working team” at the earliest stages of production who focused on acquiring the knowhow and frequently exchanged information with other plants with more HV experience.

## Messages from the Production Plant

Iwate Plant Quality Control Division
Quality Engineering Service Department
Muraguchi Atsushi

For Kanto Auto Works first HV, we solved the various vehicle quality issues without flinching together using the team’s ability.
Traffic to Iwate was interrupted by the earthquake which occurred when I was stationed at the Higashi Fuji Integration Center, however we overcame that difficulty as well and cultivated a great quality product. I am proud to introduce it both relatives and friends.

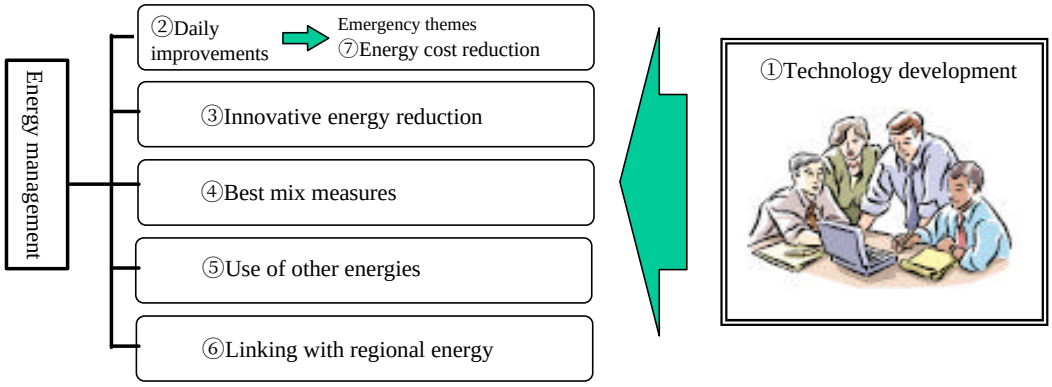
Iwate Plant Quality Control Division
Inspection Section No. 1
Toyomane Wataru

All relevant staff evaluated vehicles from customer standpoints and points of view and determined issues, and worked together as a group to resolve them as quickly as possible without giving up even in the face of the earthquake.
We will not simply rest on our laurels however, but will responsibly continue improve quality whenever possible.

# Energy Management Study Working Activities

## Activity Main Points

Our company launched working activities to study energy management and engages in activities to increase energy usage efficiency. We establish 6 sub-working activities based on main points and work on resolving issues for each of these themes.



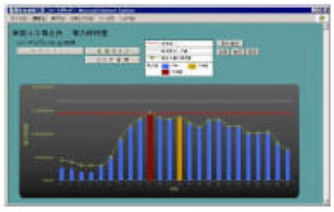

## Activity Results

As a method of determining energy consumption in fiscal 2011, the daily improvements sub-working group constructed a system which allows for easy verification of the electrical power used for each process via in-house PCs (visualized power usage). This led to familiarity with the way power was being used and helps with reduction of wasteful electrical usage.

Power visualization system screen example

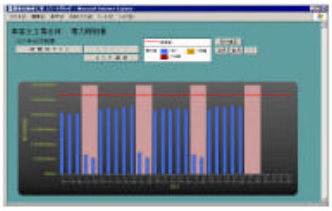
[Power usage over time]

Allows for verification of power usage conditions for the selected area and time periods, including past information.



[Power usage conditions per day]

Allows for verification of power usage conditions for the selected area and days, including past information.



Improvement example

Theme: Reduction of energy usage during non-operating time

Actual standby power was revealed by visualizing power usage. This allowed for standby power usage to be reduced by 23% by turning off facility power breakers after production completion. (Higashi Fuji Plant stamping process)

[Before improvement] [After improvement]


KANJI VOICE

**We actively carry out preservation activities aimed at optimizing operation of production facilities.**

**Higashi Fuji Plant**
**Body Manufacturing Division Stamping Section**
**Tsuchiya Mitsuhiro**

I'm in charge stamping process facility preservation.
We plan to continue to carry out activities to reduce environmental burden in production activities and realize an environmentally friendly stamping part production process.

# Environmental Reports
# Environmental Management

## View on Environmental Measures

Our company revised the "Basic Policy for Environment Related Activities" in March of 2001 in response to changes made to the "Toyota Earth Charter“ in order to challenge ever higher targets and carries out activities accordingly. In addition, management which takes the environment into consideration is incorporated as one of the most important issues in our “Guiding Principles“, which also further clarifies our position on related measures and promotes environmental preservation activities.

## Basic Policy on Environment Related Measures

**1 Contribute to an affluent 21st century society**
In order to contribute to an affluent 21st century society, aim for growth in harmony with the environment, and attempt to achieve zero emissions in all business activity domains.

**2 Environmentally Considerate Product and Technology Development**
Mobilize all of the technologies cultivated up until now and further improve them, to promote product and technology development that is compatible with both economics and the environment.

**3 Independent Action**
Evaluate effects on the environment at every stage from development and production to usage and disposal, strictly obey all legal standards and promote independent action with consideration for the environment.

**4 Cooperation and Collaboration with Society**
Build cooperative and collaborative relationships with broad segments of society related to environmental preservation, including associate companies.

## Environmental Policy

**1** In addition to strictly obeying all national and regional municipality and other environmental legislation and other requirements, predict and evaluate environmental effects of vehicle production and endeavor to maintain and improve environmental preservation.

**2** Actively engage in making products lightweight, improving recyclability and reducing substances of concern from the development stage to promote production of products that both reduce environmental burden and make customers happy.

**3** Work towards creation of a recycling oriented society with each employee being conscious of and responsible for environmental considerations through promotion of improvement of employee environmental awareness under our slogan of “Forward!”.

**4** In addition to ensuring quality communication with regional society, contribute to regional environmental preservation activities.

**5** Always consider harmony with natural environments and continually improve environmental management systems to reduce environmental burden.

**6** Set, periodically review and, when necessary, revise targets and goals for the successful achievement of this environmental policy.

This environmental policy should be thoroughly disseminated to employees and disclosed publicly outside the company.

## Environmental Measures System

**Safety/Environmental Function Council**
Determines orientation for the company’s major environmental issues aimed at overall promotion of environmental preservation activities. (Newly established April 2007)
Chairpeople: General environmental officers; Members: the president and other directors and other relevant officers

**Environmental Council**
Promotes reduction of environmental burden resulting from product development, production technologies and production.

- **Higashi Fuji Integration Center And Yokosuka Area Environmental Council**
- **Higashi Fuji Plant Environmental Council**
- **Iwate Plant Environmental Council**

Work towards study and promotion of environmental preservation activities for each region.

**Global Environment Subcommittee**
Share environment related information with cooperative companies, cooperates in and promotes environmental preservation measures.

**Environment Office Council**
Works towards cross-boundary coordination and promotion of environmental preservation activities by each regional office and other relevant staff.

# Fifth Environmental Action Plan



<table>
<tr><th colspan="3">Measure Items</th><th>Detailed Implementation Items/Objectives</th></tr>
<tr><td rowspan="3">Measures aimed at construction of a low carbon society</td><td>Development/Design</td><td>・Weight reduction that contributes to improvement of vehicle fuel consumption, development and commercial production of vehicle structures with superior electrical and heat efficiency ratios</td><td>☐Weight reduction through use of high tensile steel plate and material replacement<br>☐Body structure development that leads to reduced power consumption<br>☐Body structure development with reduced running resistance and superior thermal efficiency</td></tr>
<tr><td>Production/Physical Distribution</td><td>・Ensuring thoroughness of energy saving activities in production and reduction of greenhouse gas emission amounts<br><br>・Pursuit of transport efficiency ratios in physical distribution activities and reduction of CO2 emission amounts</td><td>☐Promotion of CO2 reduction activities through development and introduction of low CO2 generating technologies and daily improvement activities<br>(Pursuit of improved productivity, activities deployed in offices etc. as well)<br>☐Use of renewable energy<br><br>☐Promotion of CO2 reduction measures through further improvement of transportation efficiency ratios<br><br><Energy Source CO2><br><table><tr><th>Item</th><th>Base Year</th><th>Target (2012)</th></tr><tr><td>Emission amounts per vehicle*</td><td>2001</td><td>25% reduction</td></tr><tr><td>Emission amounts</td><td>2001</td><td>5% reduction</td></tr></table>*: Applies to body, painting and assembly processes<br><table><tr><th>Item</th><th>Base Year</th><th>Target (2012)</th></tr><tr><td>Emission amounts</td><td>1990</td><td>15% reduction</td></tr></table></td></tr>
<tr><td>Cooperation with Society</td><td>・Active cooperation with climate change policies</td><td>☐Promotion of Federation of Economic Organizations (Keidanren)/Japan Auto-Body Industries Association and other industry low carbon society construction measures</td></tr>
<tr><td rowspan="2">Construction of a recycling oriented, nature symbiotic society</td><td>Development/Design</td><td>・Further promotion of recycle design with consideration for effective use of resources</td><td>☐Development promotion and deployment of vehicles which are easy to disassemble and recycle<br>☐Expanded use of Toyota Eco-Plastic and other recyclable resources and recycled materials<br>☐Promotion of effective use of resources and reduction of emissions through emission source countermeasures – Reduction of valuable resource use and generation of waste, etc., promotion of resource loss reduction activities, promotion of All-Toyota resource utilization<br><table><tr><th colspan="2">Applicable to</th><th>2012 Target</th></tr><tr><td rowspan="2">Emissions</td><td>Valuables</td><td>Promotion of reduction of metallic waste, etc. amounts, effective use utilization of All-Toyota resources</td></tr><tr><td>Waste</td><td>15% reduction of emissions per vehicle compared to 2001</td></tr></table>☐Physical Distribution: Promotion of simplifying and slimming down of packaging and packing Specifications, reuse of returnable containers<br><table><tr><th>Item</th><th>Base Year</th><th>Target (2012)</th></tr><tr><td>Usage amounts</td><td>1995</td><td>35% reduction</td></tr></table>☐Water: Continual water usage amount reductions</td></tr>
<tr><td>Cooperation with Society</td><td>・Contribution to construction of a recycling oriented society</td><td>☐Promotion of technology development aimed at construction of an environmental improvement/resource recycling oriented society</td></tr>
<tr><td rowspan="3">Construction of an environmental preservation, nature symbiotic society</td><td>Development/Design</td><td>・Thoroughness of management of included chemical substances</td><td>☐Global promotion of management of chemical substances included in products<br>-In addition to total abolition previously restricted heavy metal waste, shift to management of a wide variety of chemical substances included in products<br>-Promotion of development and substitution of technologies which use substances with lower environmental burden</td></tr>
<tr><td>Production</td><td>・Reduction of substances of concern in production activities</td><td>☐Development and introduction of technologies to reduce VOCs such as paintings, thinners, etc. in painting processes<br><table><tr><th>Applicable to</th><th>Target (2012)</th></tr><tr><td>Body painting</td><td>32g/m2 (Average for all lines)</td></tr><tr><td>Other painting</td><td>Promotion of VOC reduction activities</td></tr></table></td></tr>
<tr><td>Cooperation with Society</td><td>★ Promotion of social contribution activities which encourage the construction of a nature-symbiotic society<br>(Activities which recognize the importance of biodiversity)</td><td>☐Creation of forests on premises and use of said forests to ensure thoroughness of environmental education<br>☐Active participation in regional planting and nature preservation activities<br>(Promotion of sustainable plant activities)</td></tr>
<tr><td rowspan="5">Environmental Management</td><td rowspan="5">Management</td><td>・Consolidated environmental management reinforcement and promotion</td><td>☐Implementation of activities aimed at securing the top level environmental performance within the country through thorough environmental management activities<br>☐Strict adherence to environmental laws and reinforcement of environmental risk prevention activities</td></tr>
<tr><td>・Promotion of cooperative environmental activities with business partners</td><td>☐Suppliers: Require strict observance of laws and regulations at supplier, thorough management of substances of concern including in parts, raw materials and materials and independent environmental performance improvement activities</td></tr>
<tr><td>・Promotion of sustainable plant activities</td><td>☐Utilize nature, develop knowhow for creating plants in harmony with nature<br>☐Development of low CO2 production technologies, promotion of daily improvement, sustainable energy and plant forest creation</td></tr>
<tr><td>・Promotion and thoroughness of environmental education activities</td><td>☐Environmental education system and practical experience which contribute to improvements in employee environmental knowledge and work improvements<br>☐Promotion of environmental education in cooperation with affiliate organizations<br>☐Development of monthly environmental activities</td></tr>
<tr><td>・Active disclosure of environmental information and thorough communication activities</td><td>・Active disclosure of environmental information and thorough communication activities</td></tr>
</table>

## Achievement Status

In fiscal 2011, the first fiscal year of the “Fifth Environmental Action Plan”, activities were carried out aimed at achieving fiscal 2012 midterm targets.

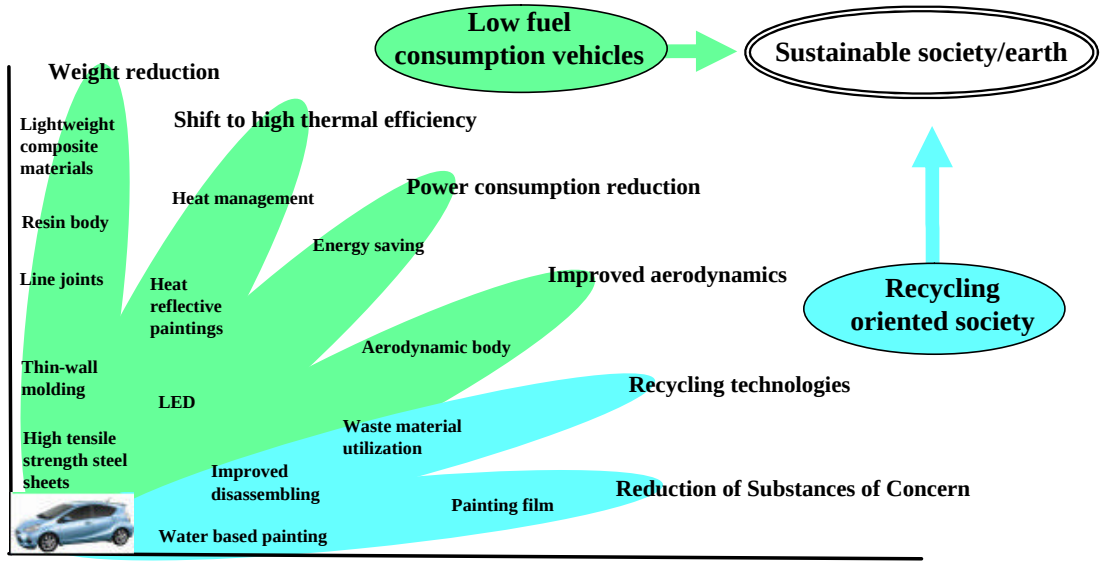
| Target (Fiscal 2012) | | Activity Results | | Relevant Pages |
|---|---|---|---|---|
| Setting of mass targets for each developed vehicle type | | Achieved mass targets | ● Promoted activities to achieve mass targets for developed vehicle types | — |
| Production | CO2 emission amounts<br>157 kg-CO2/vehicle or less<br>103 thousand t-CO2 or less | 150 kg-Co2/vehicle<br>90 thousand t-CO2 | ● Power usage restrictions were applied and power peak cut activities promoted<br>● Promoted “home grown” improvements and minute daily management improvements, minimized factors causing increases in production fluctuations (fuel changes/generator usage) etc. as a result of the Great East Japan Earthquake | P13 |
| Physical Distribution | CO2 emission amounts<br>6.1 thousand t-CO2 or less | 5.1 thousand t-CO2 | ● Promoted increase in physical distribution efficiency | |
| Setting of recycle ratios and recycle disassembly time targets for each developed vehicle type | | Achieved recycling targets | ● Promoted recycle oriented design for each developed vehicle type (Utilized easy to disassemble structures and easy to recycle materials) | P12 |
| Production | Waste<br>9.2kg/vehicle or less | 6.2kg/vehicle | ● More thorough separation of waste plastic, reduction of unapplied waste paintings | P17 |
| Physical Distribution | Packaging material usage amounts<br>845t or less | 584t | ● Promoted reduction activities including change of packing materials and review of sizes and shapes | |
| Production | Water usage amounts<br>2.3m³/vehicle or less | 2.2m³/vehicle | ● Continually promoted reduction of water usage amounts through water saving activities | |
| Setting of substances of concern reduction targets for each developed vehicle type | | Achieved substances of concern targets | ● Steady measures conforming to European REACH Regulations | P11 |
| Production | VOC 32g/m² or less | 29g/m² | ● Introduction of water based paintings<br>● Reduction of painting cleaning thinner usage amounts, improved recovery ratios | P18 |
| ・Environmental management reinforcement and promotion | | ● Cross developed other companies’ examples and implemented environmental facility inspections as activities for reducing environmental violations and complaints to 0<br>● Implemented CO2, etc. environmental performance management in all consolidated organizations | | — |
| ・Promotion of cooperative environmental activities with business partners | | ● Revised “Green Procurement Guidelines” (March 2012) which require independent environmental performance improvement activities, etc. from suppliers and promoted activities in accordance with these revisions | | P36 |
| ・Thoroughness of environmental education | | ●Implemented planned education for all employees, new employees and newly appointed environmental management promoters | | — |
| ・Promotion of sustainable plant activities | | ● Promoted forest building and natural energy utilization activities, etc. based on keyphrases “Protect Mt. Fuji’s nature and water” and “Coexistence with Iwate’s bountiful nature” | | P20-23 |
| ・Promotion and thoroughness of environmental education activities | | ● Implemented e-learning for all employees on energy saving reforms and environmental risk themes as special measures for earthquakes | | — |
| ・Active disclosure of environmental information and thorough communication activities | | ● Held environmental reporting sessions with each prefecture in July for the Iwate plant and in November for the Higashi Fuji plant | | P20-23 |

# Development/Design

## Environmentally Considerate Product and Technology Development

Our company continuously carries out product and technology development aimed at realizing harmony with the environment and a recycling oriented society for future generations. At present, we take into consideration all of the effects on the environment of our products at every stage from development and production to use and disposal from a LCA (Life Cycle Assessment) viewpoint in order to ensure that produced products do not become an environmental burden in the future and allow us to provide products with minimal environmental burden.

## Product and Technology Development Measures



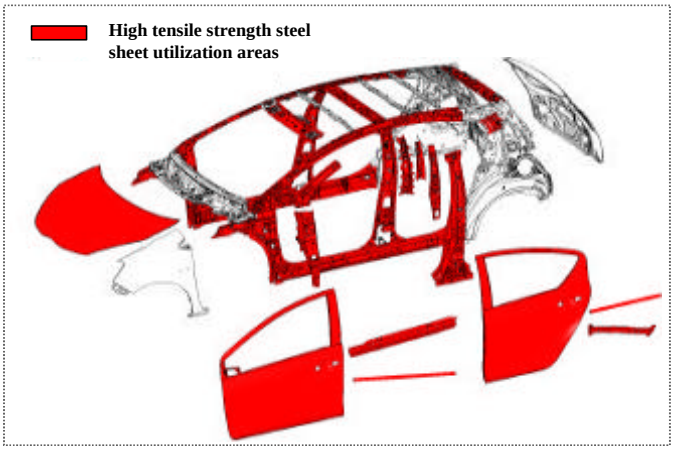

## Weight Reduction

Reducing the weight of the vehicle body improves fuel consumption and reduces exhaust gases.

**[Case Example 1]**

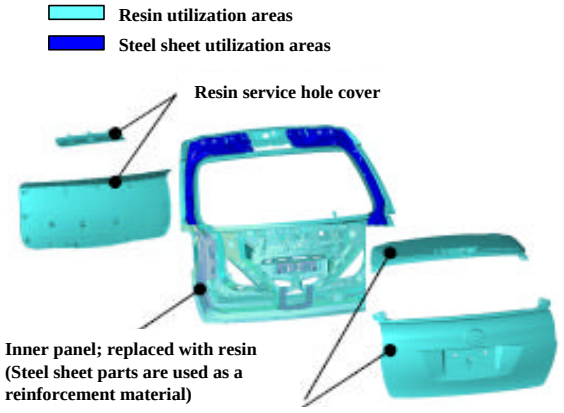
**-Aqua Measures Case Example-**

We succeeded in making the body more lightweight by using high tensile steel sheets in various areas of the body.



### [Case Example 2]
### -Corolla Fielder Measures Case Example-

By replacing the steel sheets previously used for back door panels with resin, the characteristics of the resin are able to be utilized to improve design and also combine parts into a single unit and reduce the number of pieces to be disposed of, also contributing to a lighter weight.




KANJI VOICE

**We are actively pursuing measures to create more lightweight bodies to further improve fuel consumption.**

Body Engineering Ⅰ Division
Body Design Department No.2
Demizu Hiroaki

I am in charge of body shell and exterior part design in vehicle development.
We plan to continue vehicle development with reducing weight in mind in order to be able to continually provide customers with products that have a light environmental load and are environmentally friendly.

## Reduction of Substances of Concern

We actively promote environmentally considerate measures from the design and development stage in order to reduce substances of concern when disposing of end of life vehicles (ELV).

### Targets for Reduction of Substances of Concern

(Domestic Industry Self Imposed Targets Announced November 2011)

| | |
|---|---|
| Lead | Reduced to 1/10 or less the ratio of 1996 (Excluding lead batteries) since January 2006 |
| Mercury | Prohibited for use since January 2005 |
| Cadmium | Prohibited for use since January 2007 |
| Hexavalent chromium | Prohibited for use since January 2008 |

### [Case Example 1]
### -Aqua Measures Case Example-

Meter lights were switched from bulbs to LEDs and mercury ceased being used.

Meter lights use LEDs

## Recyclability Improvement

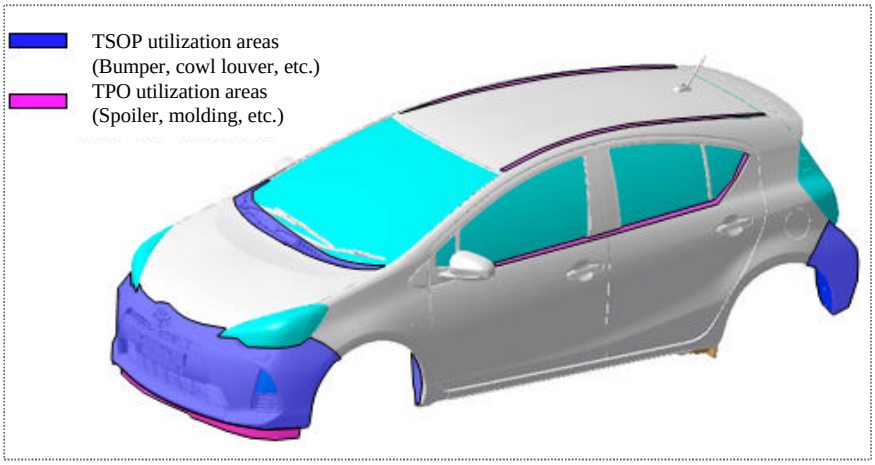
We promote the improvement of recyclability through a large number of diverse measures including carrying out development which takes into consideration effectively using limited resources, controlling generation of waste, and other items, as well as using easy to recycle materials, promoting use of recycled materials and adopting easy to disassemble structures.

### -Aqua Measures Case Example-

#### [Case Example 1]

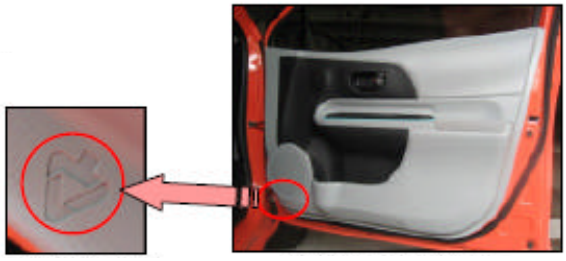
TSOP*1 and TPO*2, which are both highly recyclable materials, were proactively used.

*1 Toyota Super Olefin Polymer
*2 Thermo Plastic Olefin




#### [Case Example 2]

In order to clarify disassembly points an improved disassembly mark was used on the trim and instrument panels.

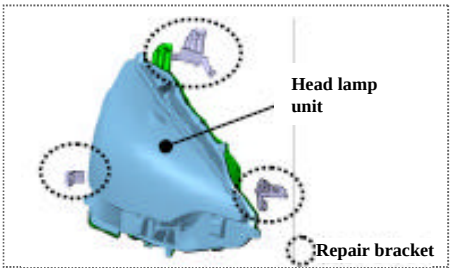


Improved disassembly mark

Improved disassembly door trim

#### [Case Example 3]

In order to allow for reuse of the head lamp unit when only the head lamp attachment section is damaged in a light collision or similar, we set repair brackets on the attachment sections.



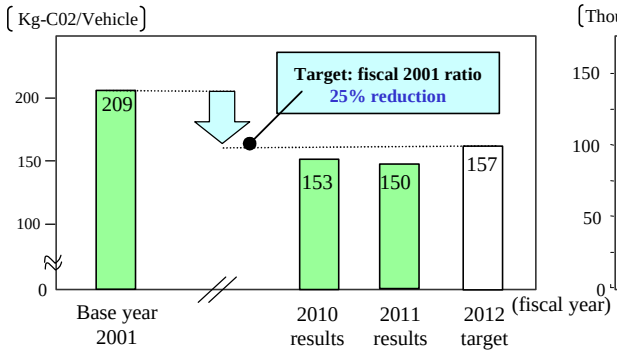
# Production/Physical Distribution
# Energy/Global Warming

## Reduction of Production CO2 Emissions

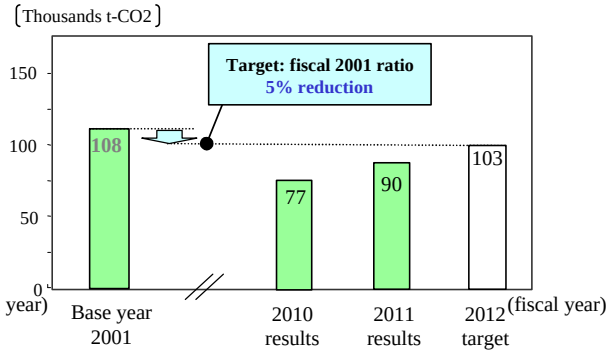
We proactively carry out **CO2 emission** reduction activities in order to prevent global warming and successfully achieve the goals of the Fifth Environmental Action Plan.

For **CO2 emissions** in particular, we promote activities aimed at the achievement of target values using **intensity per vehicle** as indicator axes.

**[Intensity]**




**[Total Quantities]**

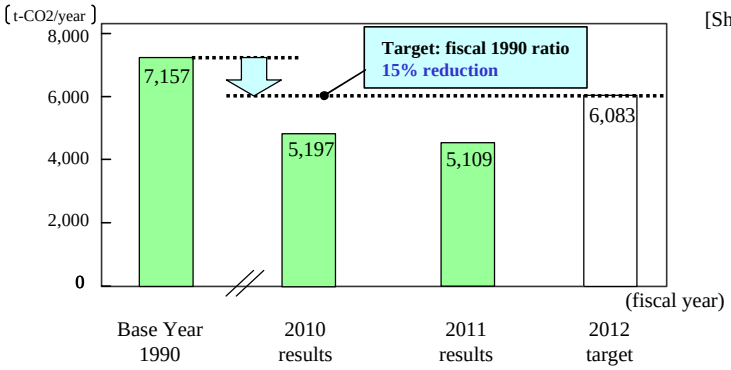



## Reduction of Physical Distribution CO2 Emissions

The CO2 emission targets for physical distribution "for fiscal 2012 are a reduction of 15% from the fiscal 1990 ratio". In order to reduce environmental burden reduction through a modal shift*1 of CO2 emissions generated at time of transport, we shifted from vessel shipping to JR cargo shipping and also improved load rations and implemented efficient shipping through shared routes and other means in an effort to reduce CO2 emissions.

*1 Modal shift
Changing the means of transportation/shipping. In particular changing cargo shipping from truck based to using vessels or railways.

**Physical Distribution CO2 Emissions**




[Shipping Efficiency Improvement Revision Case Examples]

- Shipping between plants: Cooperate with a shipping contracting company, to expand use of existing mixed loading routes and shuttles
- On-premises shipping: Review of existing routes and priority mixed loading on existing routes when new transport methods are available.
- Other company's shipping: Examine expanded use of existing routes and load ratio improvements (trucks, vessels, JR)

# Energy Saving Measure Activity Examples

## CO2 Reduction through Painting Booth Spray Outlet Covering

At the Higashi Fuji plant the Painting Section had the highest CO2 emissions, so circle members carried out an energy saving inspection to try and reduce CO2 by even a small amount if possible. As a result, it was found that there was a very small amount of waste created as part of the painting booth operation methods. A meeting was then held between the circle and the Facilities Subsection where the engineers were asked fro advice and each individuals knowledge and ideas where used to review the painting booth operating conditions allowing for a contribution to CO2 reduction and encouraging all of the circle members. We plan to continue even further process reform in the future.

Higashi Fuji Plant
Painting &Plastics Molding Division
Painting Section
Negami Kazuma

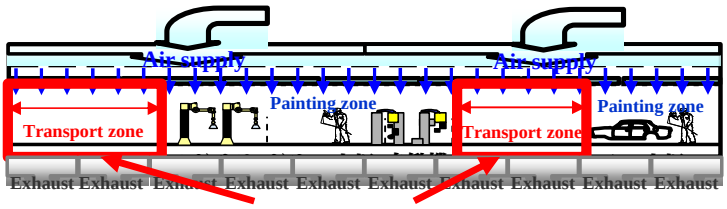
**Current Conditions**

**Focus**

The number of vehicles produced was reduced, however in the transportation process where painting work is not carried out in the top painting booth, air conditioning was still carried out for the entire facility as during times of mass production, this was to be reformed to save energy.

**Current Issue**

Even during the transportation process, air conditioning is still carried out for the entire facility as during times of mass production, leading to a waste of the power supplied for air supply and exhaust.




Waste of air supply/exhaust in transport zones

**<Issue>**

•Power is wasted because ventilation is carried out at the same levels in the transport processes, where no painting work is performed as in the actual painting processes

Painting Booth

A painting chamber equipped with ventilation equipment where the painting mist and organic solvent steam generated during the painting process is washed away and recovered in a recovery pool.

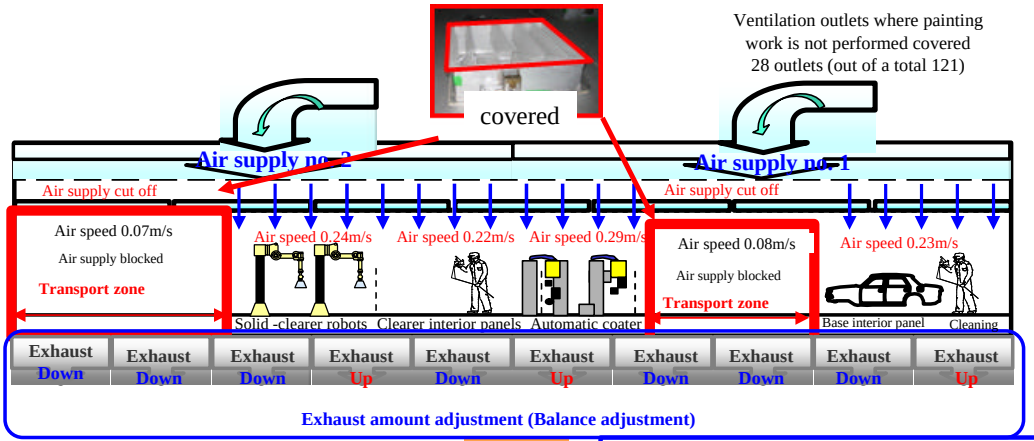
•Booth standard air speed – 0.2m/s or higher

**After Improvement**

Improvement ①: Ventilation outlets in the transport zone were covered and the supply air motor number of rotations were decreased 10.6% *Because the necessary quantity of air was reduced

Improvement ②: Supply air quantity was changed to suit the work details, fan air current was adjusted and exhaust fan no. of rotations were decreased by 17.8%.

No issues with air speed measurement (Booth standard air speed -0.2m/s or higher)




**Result**

**Reduced CO2 amount: 145t-CO2/year**

# Energy Saving Measure Activity Examples



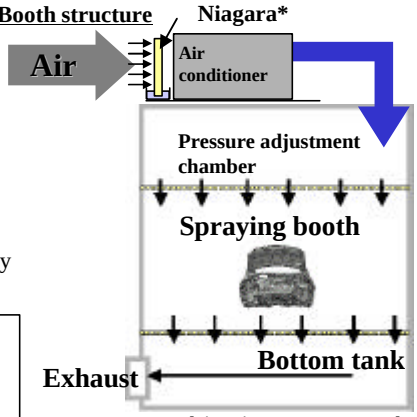
## CO2 Reduction through Reuse of Painting Booth Energy

The painting process which had the highest CO2 emissions at the Iwate plant struggled to find some way to reduce those emissions.
It was found that the vehicle painting booth was using a large amount of energy (and therefore discharging a large quantity of CO2), and that half of the CO2 emissions were created during the winter painting processes.
All team members participated to try and reduce the amount of energy used by the painting booths and we able to contribute to reducing CO2 emissions by reforming the air conditioning , improving the confidence of all the members.
All of the team members plan to continue attempting further process reform in the future.

Iwate Plant
Painting &Plastics Molding Division
Painting Section No.1 Sugawara Takashi

### Current Conditions

A large amount of energy is used to manage and maintain the temperature and humidity inside the painting booth so it is not effected by external temperature differences. In addition, “Niagaras”* are installed at the air conditioning inlets to improve quality.

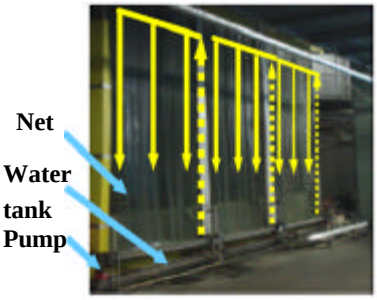



Booth interior temperature and humidity conditions

Temperature 20-23ºC
Humidity 70%

### Niagara Structure and Purpose

<Structure>




<Purpose>

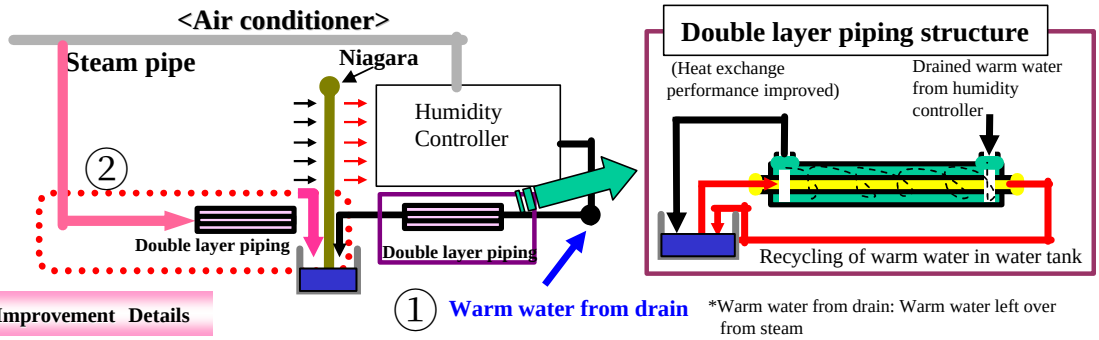
Improved dust removal efficiency (Quality improvement)

Water is sucked up from the water tank by the pump and flows down from above, forming a water film over the entire surface of the net

*Niagara: Named because of the visual similarity to a waterfall, specifically Niagara Falls

### After Improvement

**Focus** The air taken in by the air conditioning equipment is warmed in the winter to reduce energy usage.




*Warm water from drain: Warm water left over from steam

### Improvement Details

① Warm water from drain* is reused in Niagara
⇒Warms air at air conditioner inlet

② Used steam as warm water (prevents frost during winter)
Used steam piping exhaust heat to increase warm water temperature

### Result

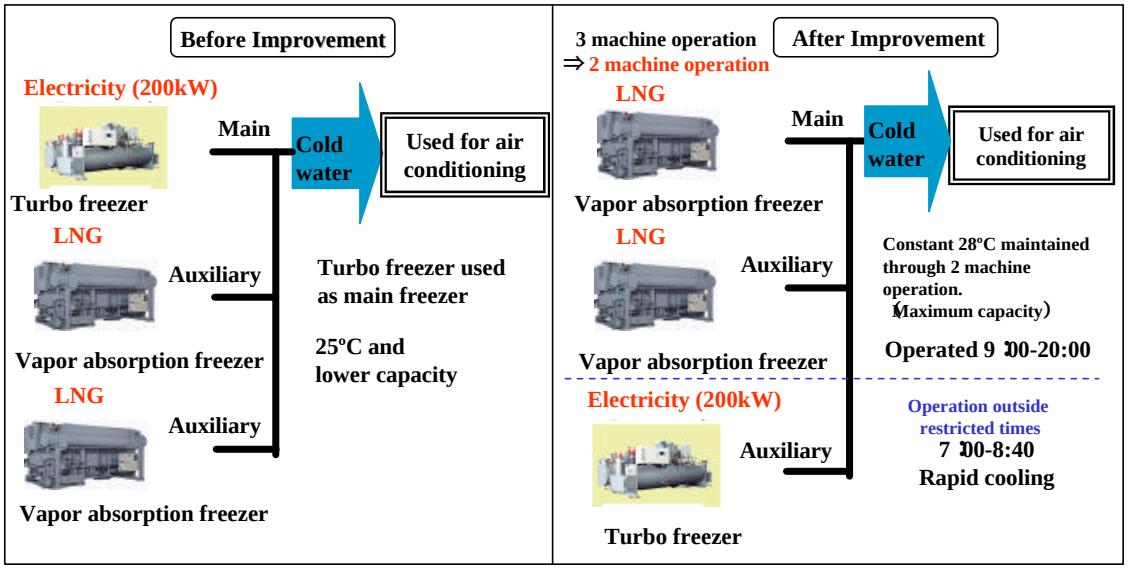
**Reduced CO2 amount: 134t-CO2/year**

# Summer Power Shortage Measures

The Great East Japan Earthquake created a shortage of electricity in areas serviced by Tohoku and Tokyo Electric Power companies, so we applied everyone's knowledge to explore and implement items to reduce power usage and work to maintain power usage within the power usage restrictions.

## Higashi Fuji Area

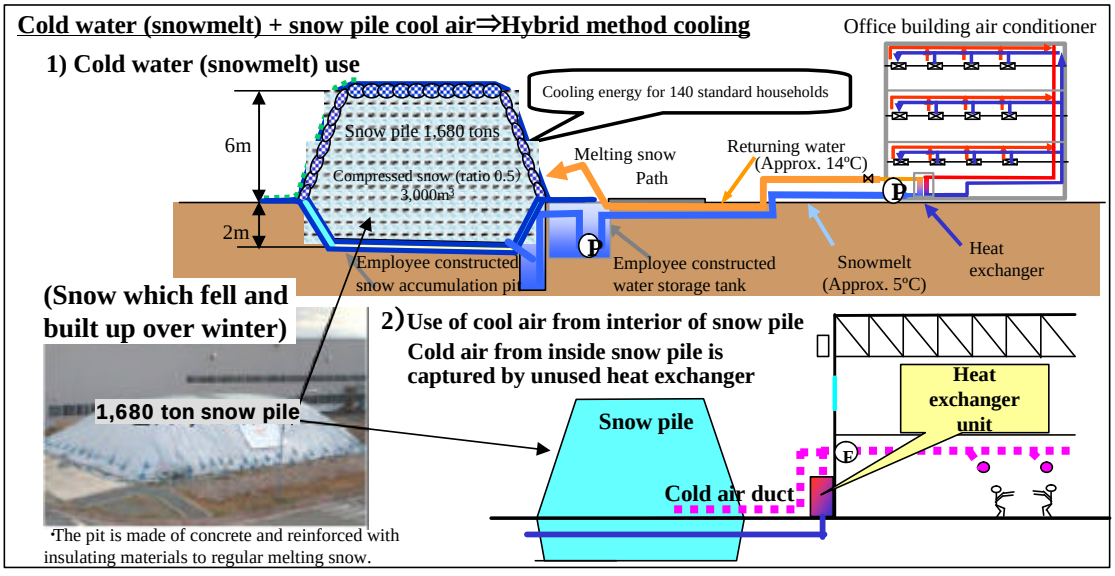
**Peak power usage (200kW) reduction and CO2 (78t-CO2/year) reduction through review of freezer operation methods**




## Iwate Area

Snow accumulated in winter is used for air conditioning in summer.

**CO2 reduction (35.8t-CO2/year) through use of cold from snow piles for office building air conditioning**

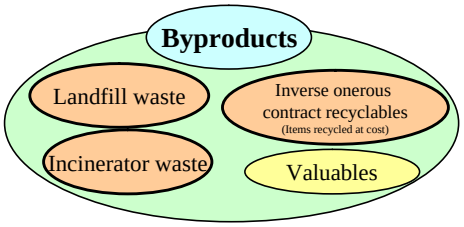


# Resource Recycling

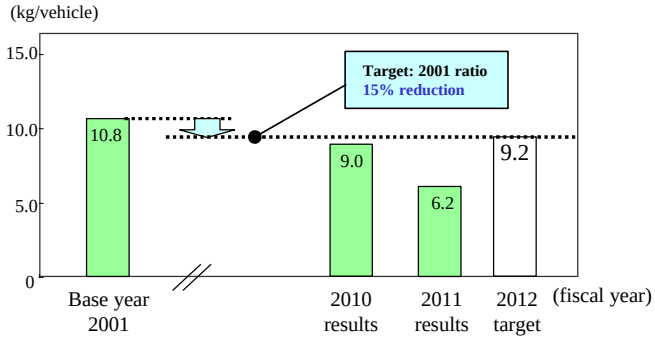
## Waste* Reduction Activities

*Waste: Exhaust byproducts consist of wastes (landfill, incinerator processing) and inverse onerous contract recyclables

The target for waste amounts per vehicle in the Fifth Environmental Action Plan is 15% of the fiscal 2001 ratio. Activity details include reducing landfill waste to 0 and continued reduction of incinerated waste to promote overall reduction of waste generation. Separation during disposal has been carried out very thoroughly in particular to effectively utilize resources and reduce waste.



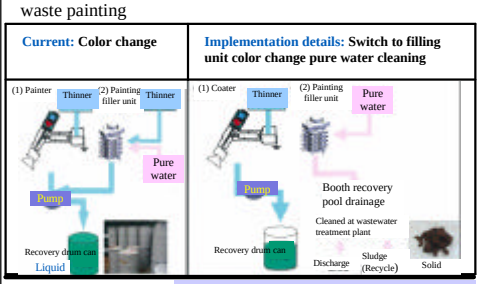

**Vehicle Production Plant Waste Output (Base Units)**




Improvement example
◆Reduction of Waste Water Based Paintings

[Before Improvement]
Cleaning of the painting filler unit uses thinner and pure water which is disposed of as waste painting

[After Improvement]
Cleaning is carried out using only pure water which reduces waste



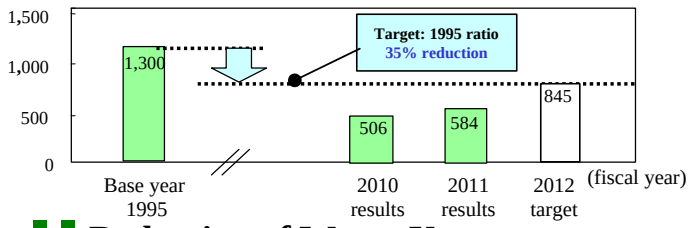

Waste: 1.5Kg/vehicle reduction

## Packaging Material Reduction

The packaging material target for fiscal 2012 is a reduction of 35% from the fiscal 1995 ratio.

We have promoted continual improvements including review of packaging material types.

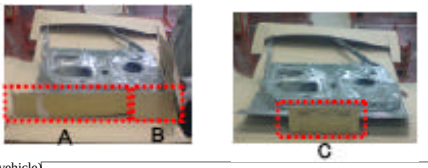
**Packaging material usage amounts**

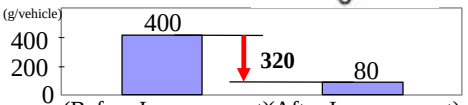



Improvement example
◆FR door interior painting reduction of usage quantities

[Before improvement]
2 types of interior painting used, A and B

[After improvement]
Switched to interior painting C only requiring only 1 use



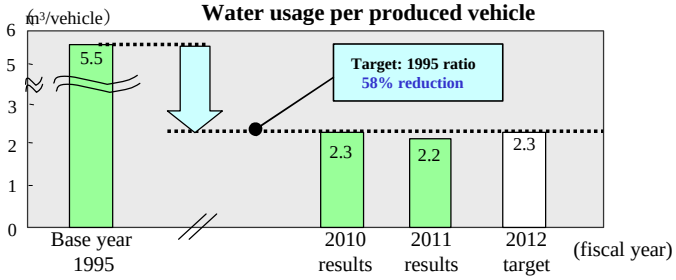




## Reduction of Water Usage

The water usage target for fiscal 2012 is a reduction of 58% from the fiscal 1995 ratio.

Usage conditions for water for industrial usage were reviewed, and improvement activities such as the use of rainwater, etc. were implemented.

**Water usage per produced vehicle**




Improvement example
◆Reduction of chemical booth circulation pump shaft bearing cooling water

[Improvement Details]
Industrial water is used to prevent burning on the shaft bearing of the pump which circulates the chemical booth recovery pool water.
Reduction was carried out by consulting with the pump manufacturer on the optimal amount of industrial water needed for cooling

Before improvement 2.43 ton/h → After improvement 1.22 ton/h

**Pump shaft bearing**

# Reduction of Substances of Concern

We promote the appropriate management and reduction of usage amounts and emissions of chemical substances used in production processes. The management and reduction of VOC substances is an issue dealt with in the Fifth Environmental Action Plan, and there is promotion in particular of activities to reduce VOCs through reduction of painting and thinner usage amounts with a focus on body painting and part painting (bumper painting, etc.) processes.

## VOC Reduction

The body painting VOC emission amount target for fiscal 2012 is 32g/m$^2$ (average of all lines).

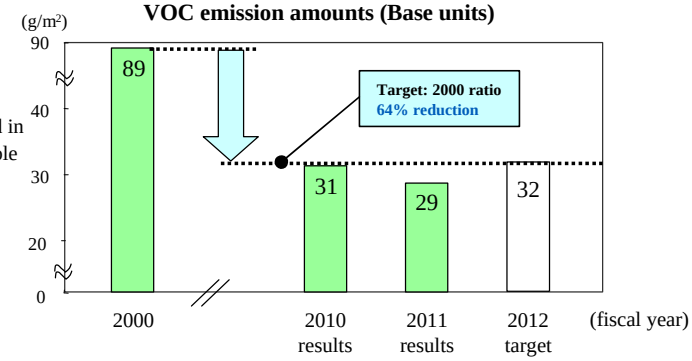
We introduced water based paintings and highly efficient paintings, reduced the amounts of cleaning thinners used and improved recovery rates, and as a result, were able to successfully achieve the targets of the Fifth Environmental Action Plan ahead of schedule.

VOC (Volatile Organic Compounds):
Volatile organic compounds (thinners, etc.)
[Emission amounts per area of body electrodeposition painting surface]

Substances Subject to PRTR are also subject to the appropriate management of chemical substances used in the production process, however because the applicable substances are contained mostly in the paintings and thinner, reduction measures are carried out in concert with measures for reduction of VOC emissions in the painting process.

PRTP= Pollutant Release and Transfer Register

**VOC emission amounts (Base units)**

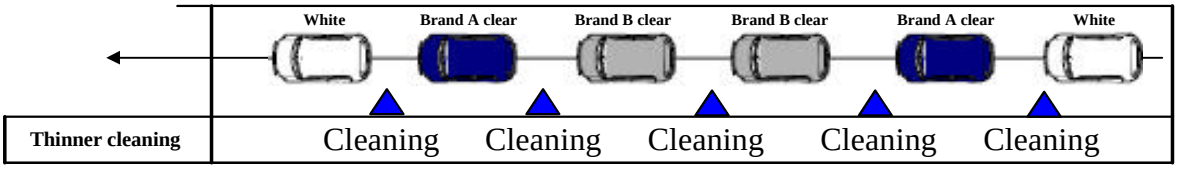



## Reduction of Substances of Concern Case Examples

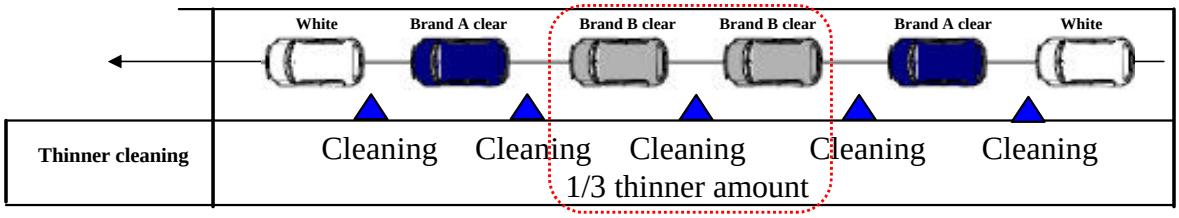
We were able to greatly reduce VOC and PRTR emission amounts by using water based painting for the metallic base of the body and bumper painting, however we also continue to advance reduction through daily management.

As in the following example, it is necessary to clean the coater for each painting color and painting manufacturer for top clear paintings, however if the manufacturer and color are the same, it was verified that there are no issues if the coaters is not cleaned, which allowed us to reduce the amount of cleaning thinner used.

**[Before improvement] Color change cleaning carried out for each clear painting**



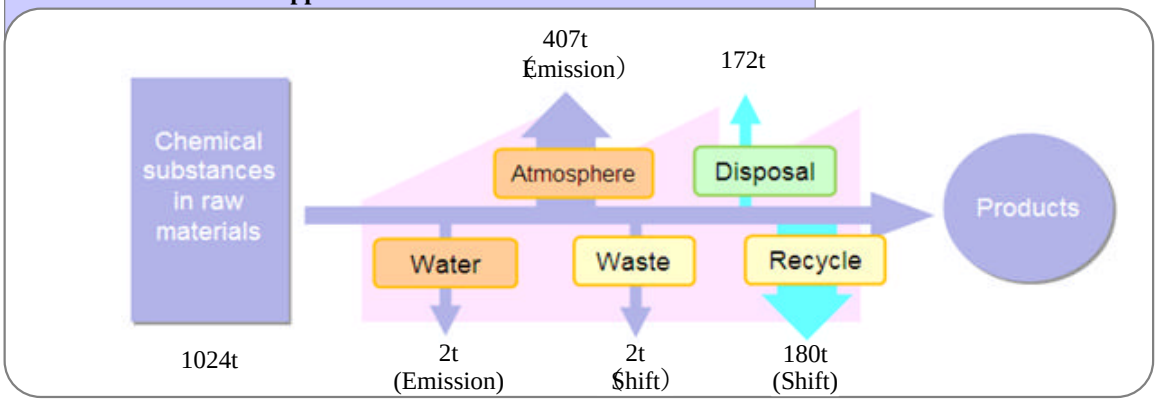

**[After improvement] Cleaning thinner amount reduced when using clear from the same manufacturer**



## Substances Subject to PRTR

The PRTR law applicable substance atmosphere/water emission amounts and waste/recycle shift amounts are as shown in the figure and the results are shown separated by plant and substance in the table below.

### Fiscal 2011 PRTR Law Applicable Substance Emission and Shift Amounts




### Higashi Fuji Plant

| Substance Name | Quantity handled | Emission quantity | | Shift quantity | | Disposal quantity | Consumed quantity |
|---|---|---|---|---|---|---|---|
| | | Atmosphere | Water | Waste | Recycle | | |
| Water soluble zinc compounds | 7 | 0 | 0 | 0 | 0 | 0 | 6 |
| Ethyl benzene | 89 | 54 | 0 | 0 | 28 | 0 | 7 |
| Xylene | 168 | 97 | 0 | 0 | 32 | 0 | 40 |
| Organic tin compounds | 5 | 0 | 0 | 0 | 0 | 0 | 5 |
| 1,3,5 trimethylbenzene | 21 | 13 | 0 | 0 | 8 | 0 | 0 |
| Toluene | 163 | 86 | 0 | 0 | 27 | 0 | 50 |
| Nickel compounds | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Hydrogen fluoride and its water soluble salts | 2 | 0 | 0 | 0 | 2 | 0 | 0 |
| Benzene | 5 | 0 | 0 | 0 | 0 | 0 | 5 |
| Formaldehyde | 2 | 2 | 0 | 0 | 0 | 0 | 0 |
| Manganese compounds | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| Diphenylmethane 4-4 diisocyanate | 7 | 0 | 0 | 0 | 0 | 0 | 7 |
| Ferric chloride | 74 | 0 | 0 | 0 | 0 | 74 | 0 |
| Triethylamine | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1,2,4 trimethylbenzene | 21 | 1 | 0 | 0 | 0 | 0 | 20 |
| Naphthalene | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| N-hexane | 25 | 1 | 0 | 0 | 0 | 0 | 25 |

### Iwate Plant

| Substance Name | Quantity handled | Emission quantity | | Shift quantity | | Disposal quantity | Consumed quantity |
|---|---|---|---|---|---|---|---|
| | | Atmosphere | Water | Waste | Recycle | | |
| Water soluble zinc compounds | 17 | 0 | 0 | 1 | 1 | 0 | 16 |
| Ethyl benzene | 44 | 16 | 0 | 0 | 21 | 5 | 2 |
| Xylene | 99 | 54 | 0 | 0 | 16 | 16 | 13 |
| Organic tin compounds | 12 | 0 | 0 | 0 | 1 | 0 | 11 |
| 1,3,5 trimethylbenzene | 38 | 13 | 0 | 0 | 21 | 4 | 0 |
| Toluene | 96 | 62 | 0 | 0 | 17 | 1 | 16 |
| Nickel compounds | 2 | 0 | 0 | 0 | 1 | 0 | 1 |
| Hydrogen fluoride and its water soluble salts | 5 | 0 | 1 | 0 | 4 | 0 | 0 |
| Benzene | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Formaldehyde | 2 | 1 | 0 | 0 | 0 | 1 | 0 |
| Manganese compounds | 6 | 0 | 0 | 0 | 1 | 0 | 4 |
| Diphenylmethane 4-4 diisocyanate | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| Ferric chloride | 71 | 0 | 0 | 0 | 0 | 71 | 0 |
| Triethylamine | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 1,2,4 trimethylbenzene | 10 | 4 | 0 | 0 | 0 | 0 | 6 |
| Naphthalene | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| N-hexane | 8 | 0 | 0 | 0 | 0 | 0 | 8 |

### General Center

| Substance Name | Quantity handled | Emission quantity | | Shift quantity | | Disposal quantity | Consumed quantity |
|---|---|---|---|---|---|---|---|
| | | Atmosphere | Water | Waste | Recycle | | |
| Ethyl benzene | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Xylene | 5 | 0 | 0 | 0 | 0 | 0 | 5 |
| Toluene | 10 | 1 | 0 | 0 | 0 | 0 | 10 |

・Units: t/year
・Disposal quantity refers to the quantity which is transformed into a different chemical substance through on-site neutralization, decomposition, reaction treatment or other means.
・Consumed quantity refers to the quantity which is included in products or otherwise incidentally removed from the plant.
・Calculated according to the 2008 revision regulations of the PRTR Law (Law on the confirmation, etc. of release amounts of specific chemical substances in the environment and promotion of improvements to the management thereof).

# Higashi Fuji Plant Environmental Preservation Activities

We work towards coexistence with global and regional environments in the bountiful nature at the foot of Mt. Fuji, and continually promote environmental management activities.

## Sustainable Plant Activities

The plant works together as a group to carry out “water” and “green” conservation activities as a part of the Higashi Fuji plant sustainable plant activities.

### 1. Moss Phlox Planting

We received opinions from some employees that the Higashi Fuji plant had an image of not having much “greenery”, so we conducted a questionnaire survey and as a result began planting the relatively easy to cultivate “moss phlox” in the area in front of the plant’s front gate, and these have now bloomed.

December 10, 2011 (Sat.) Planting

April 2012

### 2. Wasabi Cultivation

We have begun cultivating wasabi, one of Shizuoka Prefecture’s famous local products, which have an affinity for clean water during cultivation.

We are making preparations to reuse the water used in cultivation as water for industrial use in production activities.

October 28, 2011 (Fri.) Planting

April 2012

### 3. Micro Hydro

We made a call for ideas for use of water which was used in production activities and then properly treated, and are presently carrying out a 2 year plan for handmade micro hydro power generation activities.

Prototype unit 1 (undershot type)
Installed and underwent trial operation in August 2011.

**Next step**

Prototype unit 2 (overshot type)
Installed and underwent trial operation in May 2012.

# Higashi Fuji Plant Environmental Preservation Activities

We work towards coexistence with global and regional environments in the bountiful nature at the foot of Mt. Fuji, and continually promote environmental management activities.

## Communication

### 1. Environmental Dialogue Conference

We held an “Environmental Dialogue Conference” with local residents and 15 prefectural businesses for the purpose of sharing information related to the regional environment.
At the conference we introduced our environmental management activities, gave tours of environmental facilities and processes and at the end of the event held an opinion exchange. (Held November 16)

Environmental facility tour
(Co-generation)

Process tour
(Stamping process)

Opinion exchange forum

Opinion exchange forum

### 2. Plant Area Cleaning Activities

In addition to the Clean Campaign activities carried out by employees, our management also carry out a Happy Heart Campaign*, part of which includes the continual periodic cleaning of the roads (to Iwanami Station) and other area (parking lot area) around the plant.
(Activity days Clean Campaign: 1 time per month, Happy Heart: 1 time per week)

*Happy Heart Campaign: Activities aimed at a bright, happy and lively plant.

JR Iwanami Station Cleaning

JR Iwanami Station Cleaning

Municipal roadside cleaning

Cleaning results

# Iwate Plant Environmental Preservation Activities

We carry out production activities while aiming to coexist with the bountiful nature and communities of Iwate based on a motto of “creating vehicles that are environmentally and people friendly”.

## Sustainable Plant Activities

### 1. Forest Creation

We gather acorns and grow saplings together with local elementary school students, kindergartens and regional residents.

The saplings are then planted as part of the plant’s forest creation projects.

Planting inside the plant grounds

Planting with families

### 2. Use of Snow Piles for Cooling

We use water from snowmelt for air conditioning in the summer.

We also carry out cooling using snow piles and containers and promote other activities for the effective use of snow.

Completed snow pile

Use for air conditioning using containers

### 3. Ecosystem Preservation

As a result of survey of the plant grounds, we found that there was marshland and small pools in which a large number of diverse plants and animals live.

We thus created a biotope for the purpose of becoming a plant which can coexist with the natural environment and ecosystems.

Pond formation

Planting in biotope

# Iwate Plant Environmental Preservation Activities

We carry out production activities while aiming to coexist with the bountiful nature and communities of Iwate based on a motto of “creating vehicles that are environmentally and people friendly”.

## Communication

### Environmental Communication Debriefing Sessions

We held debriefing sessions with visitors from Kanegasaki Town and prefectural businesses aimed at sharing information and building a shared awareness with regional residents. At the session we provided explanations of our activities and their status and had opinion exchanges.

Plant tour

Plant tour

Opinion exchange forum

Water treatment experiment

## Contributions to Regional Society

We periodically carry out cleaning and groundskeeping of the roads in areas around the plant. In addition to carrying out cleaning service activities in cooperation with the “Furusato Mamoritai” (Protect the hometown) volunteer organization and employee families, we also participate in the Kanegasaki Town Clean Strategy. We also actively participate in a number of regional events.

“Furusato Mamoritai” cleaning service activities

Groundskeeping of town-owned land

Kanegasaki promotion event


Osaki Industrial Fair 2011

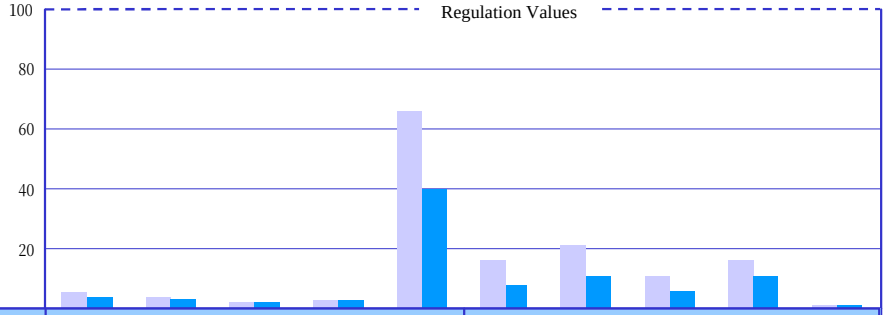
# Environmental Data

[Notes] Max Average
Graphs show an index of actual values when regulation values are 100

## Higashi Fuji Plant

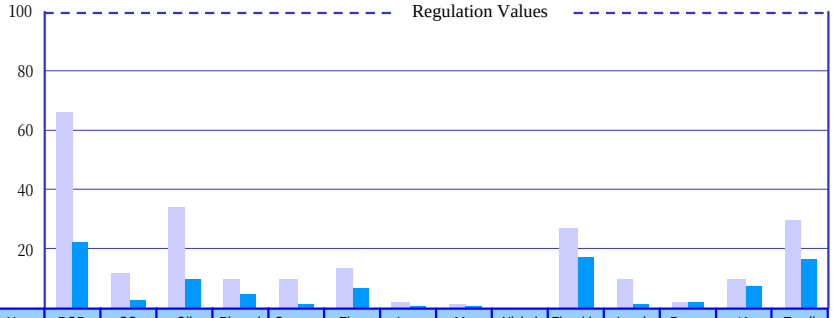
Site area: 265,589m² Address: 1200, Mishuku, Susono-city, Shizuoka

**Smoke** [Air Pollution Control Act, Agreement on Environmental Pollution Prevention (Susono City)]




| Item | | NOx | | | | | Smoke | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Regulation value | | 230 | | | | 70 | 0.1 | | | | |
| Results | Max | 11.8 | 8.3 | 5.3 | 5.7 | 46 | 0.016 | 0.021 | 0.011 | 0.016 | 0.001or less |
| | Average | 8.5 | 7.0 | 5.3 | 5.5 | 28 | 0.008 | 0.011 | 0.006 | 0.011 | 0.001or less |
| Facility | | F301 No. 1 zone heater | F301 No. 2 zone heater | F301 No. 3 zone heater | F201 heater | Gas turbine generator | F301 No. 1 zone heater | F301 No. 2 zone heater | F301 No. 3 zone heater | F201 heater | Gas turbine generator |

**Effluent** [Water Quality Pollution Control Act, Agreement on Environmental Pollution Prevention (Susono City)]




| Item | | pH | BOD | SS | Oil | Phenol | Copper | Zinc | Iron | Mn | Nickel | Fluoride | Lead | Boron | *1 | E coli |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Regulation value | | 5.8-8.6 | 25 | 50 | 5 | 5 | 1 | 1 | 10 | 10 | 2 | 8 | 0.1 | 10 | 100 | 3,000 |
| Results | Max | 7.51 | 16.5 | 5.9 | 1.7 | 0.5 | 0.10 | 0.1 | 0.2 | 0.1 | 0.3 | 2.1 | 0.01 | 0.2 | 9.9 | 880 |
| | Average | 7.28 | 5.6 | 1.2 | 0.5 | 0.2 | 0.02 | 0.1 | 0.1 | 0.1 | 0.2 | 1.4 | 0.00 | 0.2 | 7.2 | 487 |

*: Ammonia, ammonia compounds, nitrates and nitric acid compounds

<Regarding smoke> (Same for the following workplaces)
*Atmospheric units are NOx:ppm, smoke:g/m3N
*Measurement results compared to Nox and smoke regulation values for Nox and smoke results per boiler facility

<Regarding effluent> (Same for the following workplaces)
*Regulation value units are mg/L excluding pH
*pH: Hydrogen ion density BOD: Biochemical oxygen demand
SS: Flotsam mass Oil: N-hexane extract substance content

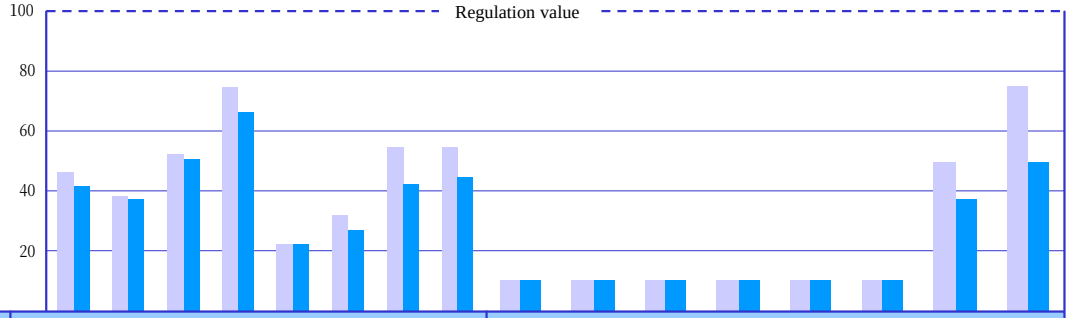
[Notes] Max Average
Graphs show an index of actual values when regulation values are 100

# Iwate Plant

Site area: 963,797m² Address: 1, Nishine Moriyama, Kanegasaki-cho, Isawa-gun, Iwate

## Smoke

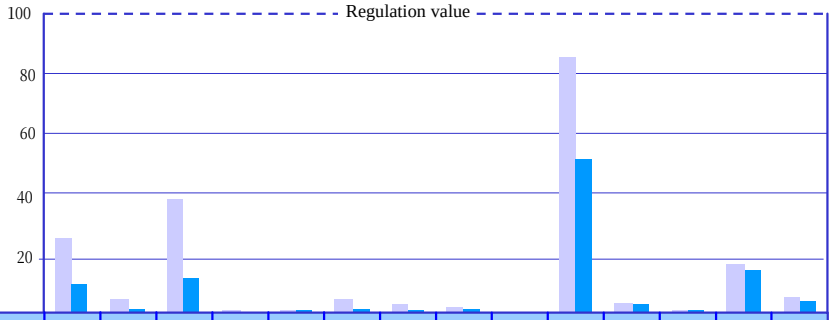
[Air Pollution Control Act, Environmental Preservation Agreement (Kanegasaki Town)]




| Item | | NOx | | | | | | | | Smoke | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Regulation value | | 120 | | | | | | 600 | | 0.1 | | | | | | 0.04 | |
| Results | Max | 56 | 46 | 63 | 90 | 27 | 38 | 330 | 330 | 0.01 or less | 0.01 or less | 0.01 or less | 0.01 or less | 0.01 or less | 0.01 or less | 0.02 | 0.03 |
| | Average | 50 | 45 | 61 | 80 | 27 | 33 | 255 | 270 | 0.01 or less | 0.01 or less | 0.01 or less | 0.01 or less | 0.01 or less | 0.01 or less | 0.02 | 0.02 |
| Facility | | Hot water boiler 1 | Hot water boiler 2 | High temperature water boiler 1 | High temperature water boiler 2 | Vacuum boiler 1 | Vacuum boiler 2 | Gas engine Generator 1 | Gas engine Generator 2 | Hot water boiler 1 | Hot water boiler 2 | High temperature water boiler 1 | High temperature water boiler 2 | Vacuum boiler 1 | Vacuum boiler 2 | Gas engine Generator 1 | Gas engine Generator 2 |

## Effluent

[Water Quality Pollution Control Act, Environmental Preservation Agreement]




| Item | | pH | BOD | SS | Oil | Phenol | Copper | Zinc | Iron | Mn | Nickel | Fluoride | Lead | Boron | *1 | E coli |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Regulation value | | 5.8～8.6 | 60 | 70 | 5 | 5 | 3 | 2 | 10 | 10 | None | 8 | 0.1 | 10 | 100 | 3,000 |
| Results | Max | 8.02 | 14.9 | 3.0 | 1.9 | 0.02 | 0.02 | 0.10 | 0.2 | 0.2 | 0.4 | 6.8 | 0.0 | 0.1 | 16.1 | 150 |
| | Average | 7.50 | 5.8 | 0.8 | 0.6 | 0.01 | 0.02 | 0.02 | 0.1 | 0.1 | 0.1 | 4.1 | 0.0 | 0.1 | 14.0 | 113 |

*: Ammonia, ammonia compounds, nitrates and nitric acid compounds

All other regulation items not noted are below the determination limits (Not detected)

**Other regulation items:** Cadmium, cyanogen, organic phosphorus, hexavalent chromium, arsenic, total mercury, alkyl mercury, PCB, total chromium, trichloroethylene, tetrachloroethylene, dichloromethane, carbon tetrachloride, 1,2-dichloroethane, 1,1-dichloroethylene, cis-1,2-dichloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, 1,3-dichloropropene, thiuram, simazine, thiobencarb, benzene, selenium

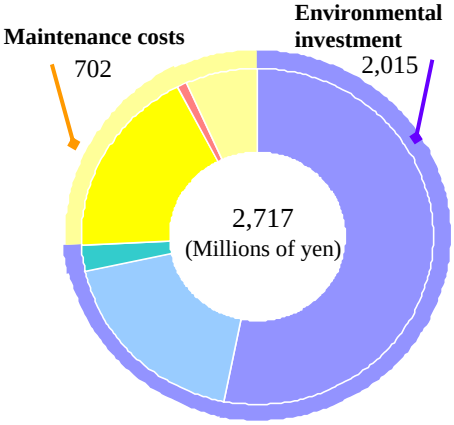
# Environmental Accounting

The total environmental cost for fiscal 2011 was 2,720 million yen, 0.5% of sales. Major details include investment for VOC emission reducing painting facilities, etc.

## Environmental Costs

**<Fiscal 2011 Results in our Company Format>**

| View on Environmental Costs | Our company defines environmental costs as “expenditure aimed at reducing environmental burden caused by business activities” as well as “expenditures related to the previous”, and they are classified as either “environmental investments” or “maintenance costs” then calculated. |
|---|---|




(Millions of yen)

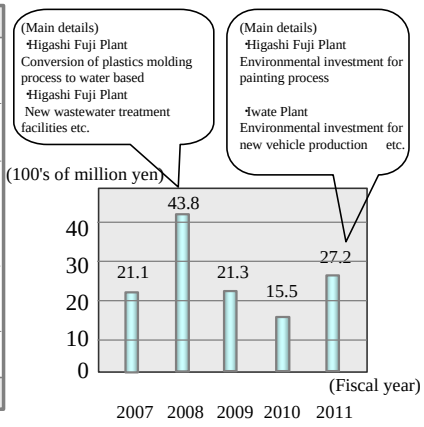
| Type | | Amount | View on types |
|---|---|---|---|
| Environmental investment | Facility investment | 1,445 | Expenditure for the purpose of actively reducing environmental burden, and for which the results are expected to last into the future as well and not just the time of expenditure. |
| | Research and development | 502 | |
| | Other expenses | 68 | |
| Maintenance costs | Environmental measure costs | 500 | Expenditure other than environmental investment, such as daily expenses related to environmental preservation (waste water treatment plant operation, waste processing maintenance management costs, etc.) which have only immediate effects. |
| | Understanding activity costs | 1 | |
| | Environmental restoration costs | 21 | |
| | Environmental staff costs | 180 | |
| Total | | 2,717 | |

**<Fiscal 2011 Results in our Ministry of the Environment Format>**

(Millions of yen)

| Type | | Investment | Expense |
|---|---|---|---|
| ①Business area costs | Pollution prevention costs | 64 | 296 |
| | Environmental preservation/resource recycling costs | 1,241 | 204 |
| ②Up/downstream costs | Environmental preservation costs which occur in activities outside of production | 183 | 0 |
| ③Management costs | Environmental advertising, environmental report issuance , environmental staff appointment costs, etc. | 0 | 187 |
| ④Research and development costs | Research and development costs for reducing environmental burden | 0 | 502 |
| ⑤Social activity costs | Environmental preservation costs for activities ensuring social understanding and providing support | 0 | 20 |
| ⑥Environmental damage costs | Environmental contamination restoration costs | 0 | 21 |
| Totals | | 1,488 | 1,230 |

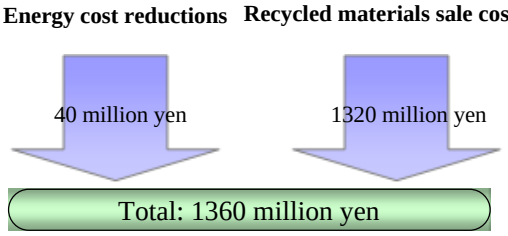
**<Environmental Cost Trends>**




## Fiscal 2011 Economic Effects

The improvement status of environmental burden related to environmental preservation activities is noted on pages 10-25 of this report.

In addition, for economic effects from investment in environmental costs, only the practical effects calculated on a stable basis shown at the right were totaled. “Product added value contribution”, “environmental risk avoidance”, “business image improvement” and other theoretical estimate based economic effects were not calculated.



# Social Reports

## Involvement with Customers



## Quality Assurance

### Basic Concepts

Our company declared the “Customer-oriented stance” in December 2003, and has provided our customers with satisfaction and excitement based on our motto of “forwards”.

We aim to concretely realize this goal, centering on the following two methods as measures.

① We will implement all possible measures to ensure quality assurance for vehicle production through collective efforts with the heads of each division of the company participating to realize systematic and timely establishment of annual commitments regarding quality function and management of progress status and priority items.

② Each division (Development, Production Preparation, Production and Head office) will be responsible for the realization of quality assurance following a process of “Development – Production Preparation – Production”.

Moreover, the Quality Division shall verify via an overall system audit that each division is steadily making progress in quality assurance and make improvements for further advancement.

The following 4 items are promoted as pillar priority items.

① Quality information gathering from our customers in close cooperation with Toyota Motor Corporation (Customer requirements/expectations, quality standards, defect reports, etc.)

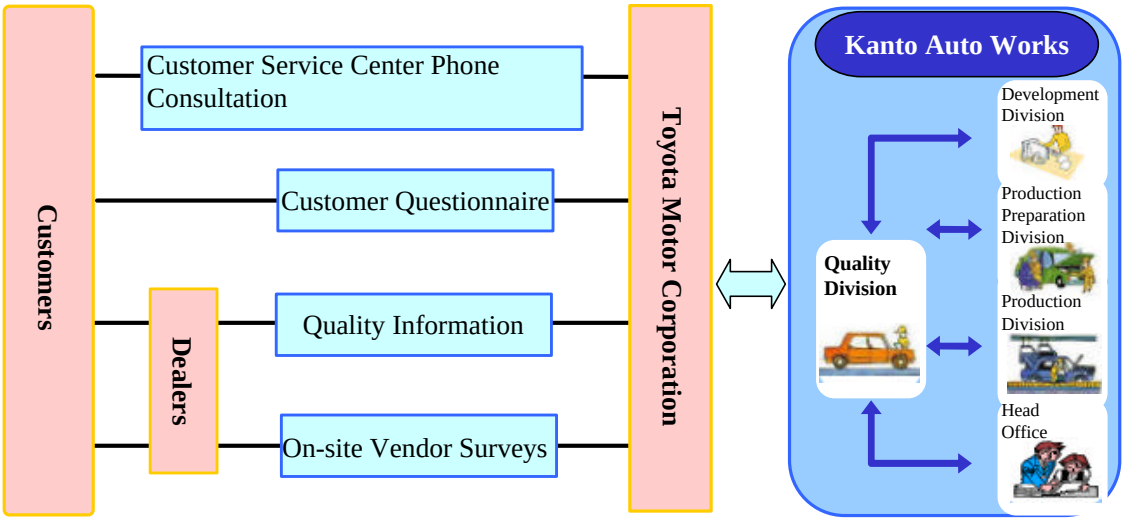
② Prevention to avoid quality problems (Conformity to laws and regulations, new mechanisms, consideration for new parts/usage methods, etc.)

③ Auditing as to whether each division is properly working on quality assurance and improvement (Various verification and report meetings, etc.)

④ Recurrence prevention aiming to achieve early detection and resolution in the case of defects (Speedy information gathering, quick detection of causes and countermeasures, etc. via IT)

We were awarded the 2011 top “Quality Excellence Award” by Toyota

### Provision of Major Quality Information to Customers And Collection of Quality Information from Customers




### Countermeasures and Systems for Recall, etc.

We place top priority on quality and pursue both “good quality” and speed as a manufacturing company. However, in the event any defects are detected in our products and it is considered necessary to implement countermeasures, we will implement any necessary measures in cooperation with Toyota Motor Corporation as a member of the Toyota Group.

# Creation of People-friendly Products

## Development of Vehicles For Disabled People and Equipment

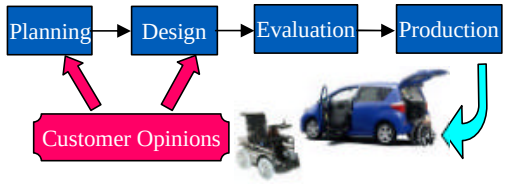
◆ We develop products like vehicles for disabled people and electric wheelchairs with “the freedom of comfortable movement for everybody” and “be as helpful as possible for customers happy lifestyles” as our slogans.

◆ We try to apply the opinions gathered from users at welfare facilities and exhibitions to the development of our products.

### Types of Vehicles For Disabled People

| Purpose of Use | Vehicle Specifications |
|---|---|
| Passenger seat transfer assistance | Rotating seat/elevating rotating seat |
| Back seat transfer assistance | Rotating seat/elevating rotating seat |
| Wheelchair boarding and alighting | Wheelchair accessible mobility vehicle (rear lift/rear slope) |
| Drive without assistance | Vehicle with transfer assistance |

### Applying Customer Opinions to Product Development




Examples of Vehicles For Disabled People and Equipment Developed by Our Company

**Transfer to high elevated drivers seats and simultaneous wheelchair storage (first in Japan)**

“Welride” transfer assistance for drivers in wheelchairs

Usage procedure

① Transfer from the wheelchair, and set up the wheelchair

② Ascend to the height of the drivers seat and transfer

③ Simultaneously store the wheelchair and assistance equipment


Welride External Appearance

To listen to customer opinions

Explanation of Vehicles For Disabled People (At the International Welfare Equipment & Devices Fair, Barrier-Free Osaka)

Visit to Rehabilitation Centers

# Cooperation with Society

## Social Contribution Activities

We aim to be a company which is trusted and respected by the community and society through communication with regional society and regional environmental activities.

### Main Activities Implemented in Fiscal 2011

◆ All year round: ①We received 22.6 thousand visitors consisting mostly of elementary school students on tours of our plants.
②We lend welfare vehicles (Yokosuka City).

Elementary school student tour

◆ All year round: We provided a sales training venue aimed at the disabled for the purpose of promoting self support and held “sales of vocational aid center products (bread, cookies, etc.)” at the Iwate plant, Higashi Fuji plant and General Center.

Sale of local vocational aid center products

◆Weekly: Litter collection between the General Center and JR Iwanami Station was carried out by the General Center and Higashi Fuji Plant every Wednesday before the start of work.

◆July, December, March: The caps from PET bottles disposed of at our company were donated to NPOs to provide vaccinations to 337 children around the world.

Higashi Fuji Festival

◆August: The “Higashi Fuji Festival” was held between the General Center and Higashi Fuji plant, and “Festa Iwate” was held at the Iwate plant with local residents participating in order to provide opportunities for exchange.

Donation of automobile to Iwate Prefecture

◆September: We celebrated a production total of 15 million vehicles and donated produced vehicles to the public administrations of each workplace. (Iwate Prefecture, Iwate Prefecture Kanegasaki Town, Yokosuka City, Susono City)

Donation of automobile to Yokosuka City

◆November: Our company booth was located in the corner of the automobile section at the “Yokosuka Industrial Festival” where we held traffic safety quizzes aimed at children.

Yokosuka Industrial Festival

◆February: We participated in the Nichiban Tape Roll Core ECO Project and submitted “187 tape roll cores”.

◆March: We presented traffic safety novelties (ruler) to new first graders (approximately 6,000 children) in towns, villages and cities throughout Kanagawa, Shizuoka and Iwate in hopes of 0 traffic accidents.

Presentation of traffic safety novelties

In fiscal 2011 we carried out regional volunteer activities 3 times in the Yokosuka area and 8 times in the Higashi Fuji area. We also carried out reconstruction assistance volunteer activities for 3 terms in the Iwate area and 2 times in the Higashi Fuji area.

## Yokosuka Area Volunteer Activities

①

②

③

① October Taura waterway cleaning
② November Company facility neighborhood beautification and cleaning
③ December Provided supplies for the 43rd Kaifu Gakuen/Ichiban Boshi Charity Bazaar

## Higashi Fuji Area Volunteer Activities

①

②

⑤

⑧

① April Broadleaf tree sapling planting
② June Litter pickup in roadways around Mt. Fuji
③ July Flower garden weeding
④ September Flower garden weeding
⑤ September Volunteer crop harvest activities
⑥ October Rapeseed sowing
⑦ February Mt. Fuji (Foot Area) Clean-up Operation
⑧ March Flower Town Project

## Reconstruction Assistance Volunteer

**[Iwate Area]**

① 3/24-4/9: Research surveys on secondary shelters for refugees (70 people)
② 4/5-5/7: Household sludge cleaning and household goods transportation (331 people)
③ 5/26-10/22: Debris removal, sandbag removal transportation work
Sewer sludge removal, mowing and removal work (757 people)

**[Higashi Fuji Area]**

④ July Iwate Prefecture Yamada Town Reconstruction Assistance Volunteering

⑤ July Fukushima Prefecture Soma City Reconstruction Assistance Volunteering

②

②

③

③

④

⑤

# Traffic Safety Activities

As those who deal with vehicle production, it is the mission of our company to positively participate in “traffic safety activities”.
In detail, in addition to mention “making safe, environmentally friendly vehicles”, we positively promote heightening of workers traffic safety awareness and traffic accident prevention activities in collaboration with communities, government, etc.

## Main Activities Implemented in Fiscal 2011

◆ All year round:

① “Traffic Safety News” morning handouts

We distribute the “traffic safety news” morning handouts every month as an awareness promoting activity.

② Traffic Safety Day

The entire company sets traffic safety days (10th, 20th, 30th) and carries out traffic safety education activities at every workplace.

③“Traffic Safety Promotion Calendar”

We aim for “no accidents” in each division and carry out education activities by attaching check stickers every day.
We also award workplaces that successfully manage to have no accidents.

① Morning handouts for traffic safety (General Center)

◆August: Alcohol Checks

We perform alcohol checks at parking lot exits for events such as summer festivals.

Alcohol check (Higashi Fuji Summer Festival)

◆ All year round: Traffic Safety Lectures

We hold traffic safety lectures with the cooperation of the local police stations.
Headquarters：December
Higashi Fuji Integration Center：July, December


In-house traffic safety lectures (General Center)

### KANJI VOICE

**I have been in charge of traffic safety since March 2011, attempting to prevent even a single accident through even the smaller of measures.**

General Administration Division
Serizawa Masami

The General Administration Division acts as the supervisor for traffic safety activities inside and outside of the company as a representative of the company. We steadily promote activities that help reduce the number of those who will be struck by the tragedy of traffic accidents, including the company.

・Internally, we issue traffic safety materials regularly and hold lectures

・Externally, we positively participate in local traffic safety activities etc.

# Involvement with Employees

## Safety and Health

The whole company works to promote safety consciousness based on the idea that “Safety is the basis for everything”.

## Guiding Principles/System

### ◆Safety and Hygiene Management Guiding Principles

We perform activities with mid/long-term policies and principles related to safety and hygiene as the Guiding Principles.

**[Guiding Principles]**

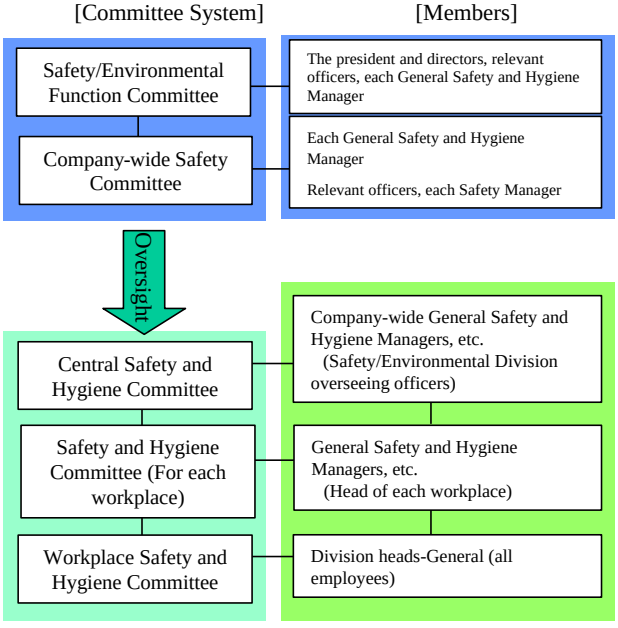
Our company prioritizes the safety and hygiene of every relevant individual including employees.

For this purpose:

1. We promote continuous improvement with safety/quality/production as one at the optimal timing in accordance with the standard work in the Toyota Production System.
2. We act with the awareness of what each individual should do based on “Rely on yourself to protect yourself”.
3. Managers and supervisors understand and guarantee their own safety and hygiene management items.
4. We continuously develop safety and hygiene management based on strict adherence to laws and advance safety measures with the participation of all parties.

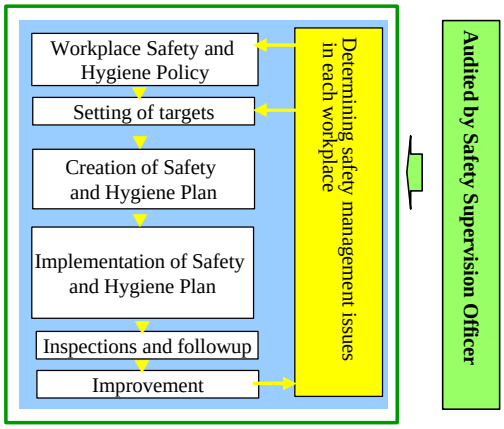
### ◆Safety and Hygiene Management Organization

Stabilizes safety measures as a company through the “Safety/Environmental Function Committee” and “Company-wide Safety Committee”, which are then discussed by labor and management at the “Central Safety and Hygiene Committee” and “Safety and Hygiene Committee (for each workplace)” and deploy the results in the work organization.




### ◆Safety and Hygiene Management System

The company shall construct a Safety and Hygiene Management System aimed at continually improving safety management.




Safety promotion personnel presenting examples at the National Industrial Safety and Health Convention

# Safety Measures

### 1. Improvement of Safety Awareness

①Safety awareness heightening and routinization
②Managers and supervisors endurance/perseverance/communication
③Promotion of safety activities in office/technical work

### 2. Work Safety Guarantee

①Enhancement of activities to review previous accidents on the anniversary of their occurrence

②Re-examination of the dangers in main six accident types and challenge of drastic measures
※Sandwiching, winding/falling/touching/electrification/poisoning/burns, explosions

③Provision of instruction and support to related companies and overseas affiliates

④Maintenance of safety in contracted construction

### 3. Facility Safety Maintenance

①Absorption/improvement of difficulties due to facility factors

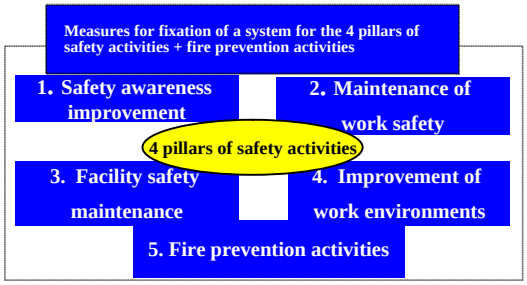
②Safety checks of newly installed/renovated facilities (including layout and placement)

### 4. Work Environment Improvement

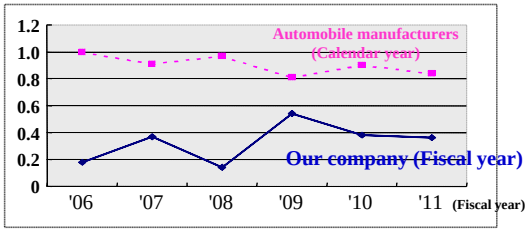
①Workplace improvements to make it more work-friendly

### 5. Fire Prevention Activities

①Safety checks by monthly themes
②Verification of management status by top administration




Overall accident occurrence rate trends (Fiscal 2006-2011)

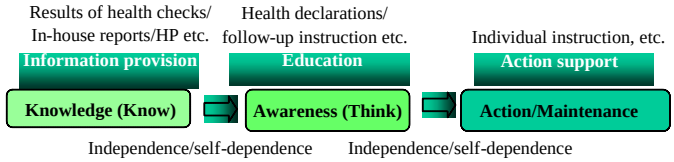



Note) Accident occurrence rate = (Number of casualties ÷ total man hours) × million hours
Casualties calculated in a more strict manner than previous method since fiscal 2009

# Fiscal 2011 Mental and Physical Health Building Measures

### 1. Framework of health management activities

Establishment of a stance where employees aim stay healthy themselves based on a core of health declaration and follow-up instruction




### 2. Main Measures

| Mental health | Physical health |
|---|---|
| 1 Activity enhancement related to prevention/early detection for all employees<br>■ Implementation of individual instruction/workplace consultations based on determination of employee stress conditions<br>■ Implementation of e-learning aimed at self-care<br>■ Strengthening of workplace communication<br>2 Enhancement of mental health classes for managers and supervisors<br>Continuous practical education focused on listening and awareness of subordinates<br>3 Enhancement of system where employees find it easy to consult voluntarily<br>Expansion of mental counseling offices by external counselors, implementation of PR and enhancement of counseling through application of website and morning handouts etc. | 1 Reinforcement of follow-up instruction using regular health check results<br>・Instruction to all applicable subjects<br>・Collaboration with specific health instruction of health insurance to metabolic syndrome patients<br>2 Enhancement of non-smoking activities<br>・Expansion of no-smoking days (semimonthly→twice a week)<br>・Implementation of positive no-smoking instruction<br>3 Enhancement of measures for acute infectious illnesses<br>・Continuous in-house infection prevention measures to counter the increased risk of domestic influenza (Provision of hand antiseptic solution, education activities etc.) |

**[In-house health lecture]**

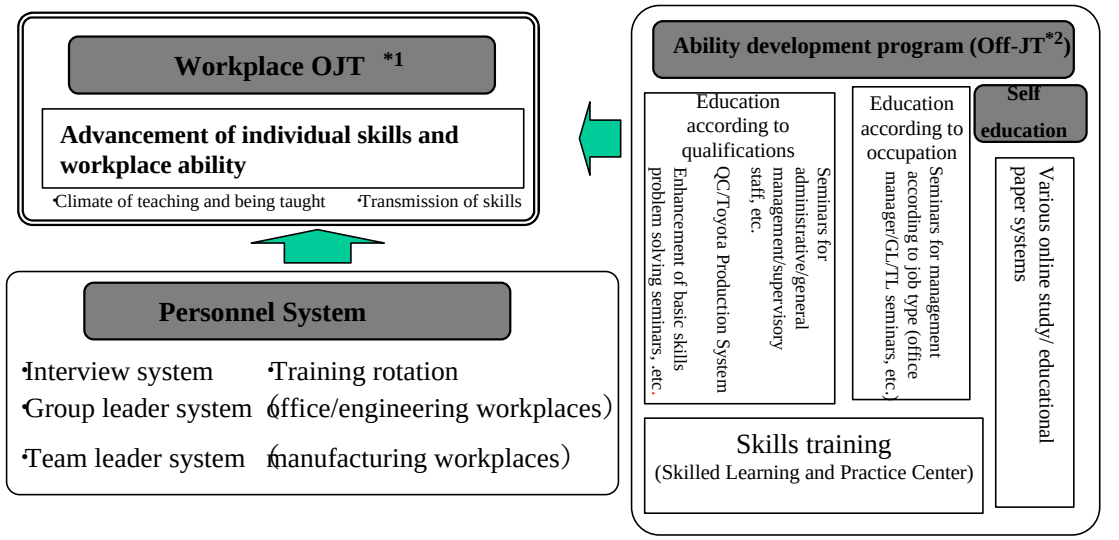
**Held on October 12th , 2011**
**Title "Stop! Escape from lifestyle diseases**
**〜metabolic syndrome (complex lifestyle diseases)"**

# Human Resource* Cultivation

*We use the expression (Human Resources) to express the idea that each individual is a precious resource for the company.

We promote development of versatile human resources that can act competently corresponding to globalization in order to aim for the "No. 1 spot in the manufacturing industry" based on our customer oriented policy.

## [Human Resource Cultivation System]




*1 OJT :On the Job Training (training through work) *2 Off-JT :Off the Job Training (education based on company-wide education system)

Human resource cultivation is based in OJT training in the workplace. In the workplace, senior and junior employees are able to experience improvements in their skills first hand in an "climate where people can both teach and be taught", and the accumulation of these experiences and free environment lead to the improvement of overall workplace ability = workplace and field abilities.

To supplement workplace OJT there are "Personnel systems" like the interview system and rotation, and "Ability development programs (Off-JT)" implemented according to professional qualifications and job type. Steady development of human resources is accomplished through these supplementary activities.

Also, to further enhance skills training, we established "Skilled Learning and Practice Centers" in both Higashi Fuji and Iwate in February 2008 for the purpose of the advancement of the basic knowledge and skills of skilled workers.

## [Example Introduction] Practical Job Problem Solving Training

Participants learn through repetition of lectures and exercises in order to learn "Toyota Problem Solving" methods.
At the end of the seminar a group exercise is performed and the group representative makes a presentation.
In addition, within two months an actual method for use in the workplace is developed and deployment to actual work, problem solving skills and knowledge are retained by reporting on the methods.

Seminar

# Working Method Diversity and Equality

Our company implements “child (nursing) support”, “expanded employment of the aged” and “employment of the disabled” activities corresponding to the changes in the environment surrounding the work market with situations such as the development of a society with declining birthrate and aging population and heightened social demand for promoting women’s social advancement, all aimed at creating an environment where diverse personnel can work in a positive atmosphere.

## Child (Nursing) Support

In order to respond to the requests of employees and the social demands for child rearing and nursing, we continuously carry out measures for the advancement of various systems to support child rearing/nursing aimed at making it easier for employees to work.

## Employment of the Aged (Retirement Age Re-recruiting System)

For people who retire at the age limit of sixty years old, we promote a retirement age re-recruiting system for the purpose of best utilizing the high skills and techniques that they cultivated at the company.

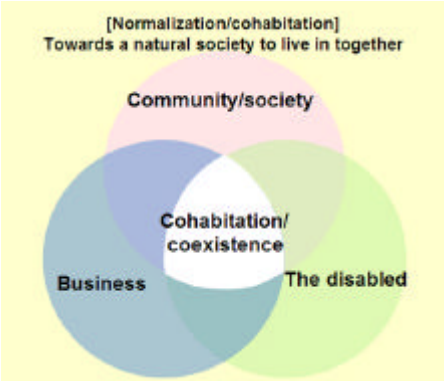
In fiscal 2011 we also introduced a “half day work system” to make it easier for those who are re-recruited at retirement to work.

## Promotion of Employment of the Disabled

Our company cherishes our connections to the community/society and carries out positive activities to promote employment aimed at “normalization and cohabitation”.

Our company aims to create a “workplace where the disabled and the able bodied can coexist” and carries out measures to create work environments where all employees can work in a lively manner by installing warning lights for the hearing impaired, placing full-time support staff, holding in-house sign language seminars and through similar projects.

We plan to continue to further enhance the promotion of employment by creating a disabled-friendly workplace.




# Labor Management Relations

Labor and management relationships in our company are built on a basic concept of mutual trust between labor and management. We believe that only when the company and employees understand, trust and cooperate with each other, is it possible for the company to develop and employees to achieve self-realization.

## Opportunities for Labor and Management Discussions

For employees to work with satisfaction and to accomplish self-realization through this satisfaction, the company must steadily grow and survive. To that end, all employees need to correctly understand the company’s circumstances, the challenges it faces and future company policy.

We hold labor and management meetings every month, exchanging opinions actively. We work towards building a better understanding and trust of each other through these meetings.

# Involvement with Suppliers

Our company aims to create cars that are friendly to the environment and human beings and always promotes environment sustaining activities with the collaboration of suppliers.

## Basic Procurement Policy

We aim to carry out procurement activities through cooperation with suppliers in order to procure the best items at the best prices and best times.

- Provision of fair/just market access based on open-door policy
- Coexistence/co-prosperity based on mutual trust
- Promotion of “green procurement” that gives consideration to the environment
- Promotion of local procurement aimed at being a good corporate citizen
- Thorough law abidance and confidentiality protection

## “Briefing Sessions on Changes to Chemical Substance Management System”

Toyota Motor Corporation chemical substance management system has changed due to increased and expanded global regulation of chemical substances.

Our company has provided suppliers with explanations and requested new handling methods.

[Explanation Details]

1. Chemical substance regulation environment
2. New handling methods for suppliers

①Increased management of material data in part development stages (Increase in the number of parts/materials that should be input into the chemical substance information collection system)

②Expansion of substances of concern in the parts/raw materials mass production stages (Number of banned substances：4 substances ⇒10 substances)

3. Revision of green procurement guidelines (Revised to include item 2. above)

As with our previous activities, we strive to improve environmental management together with suppliers while verifying supplier methods.

## Reciprocal Study and Exchange through NEXT (Supplier Cooperative)

NEXT* consists of 139 supplier companies and aims for reciprocal training and advancement of each company through committees (parts, materials, facilities) and special interest groups (construction safety, global environment, safety of product sources).

In fiscal 2011, we carried out practical training activities, holding business visits and lectures focused on the environment and disaster prevention, topics of the times.

* “NEXT”=New Excellent Technical Team

# KANJI Eco-Drive CUP 2011

The “KANJI Eco-Drive CUP 2011” was held at the Fuji Speedway (Shizuoka Prefecture Oyama Town) on September 23 to “increase environmental awareness”, “increase interest in automobiles” and for other purposes.

President Hattori and other officers and drivers and navigators from each headquarters and both plants participated in races on the day, with 7 teams of “Prius” cars competing for the best fuel consumption.

As the teams worked out race strategies and techniques for improving fuel consumption, each team increased their knowledge and interest in cars and the event succeeded in providing a chance for exchange which overcame the usual workplace boundaries.

For “Eco-Drive CUP 2012” we are planning an “Aqua” race.

Environmental Logo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