

Environmental Aspects

Environmental Management

Approach to Environmental Issues

Kanto Auto Works responded to the revisions to Toyota Motor Corporation's Toyota Earth Charter that were made in order to achieve even higher goals by revising its Comprehensive Approach to Environmental Issues in March 2001 and undertaking action based on the revised policy. In addition, consideration of the environment as a priority management issue has been incorporated into the Guiding Principles at Kanto Auto Works to further clarify the stance of environmental conservation activities.

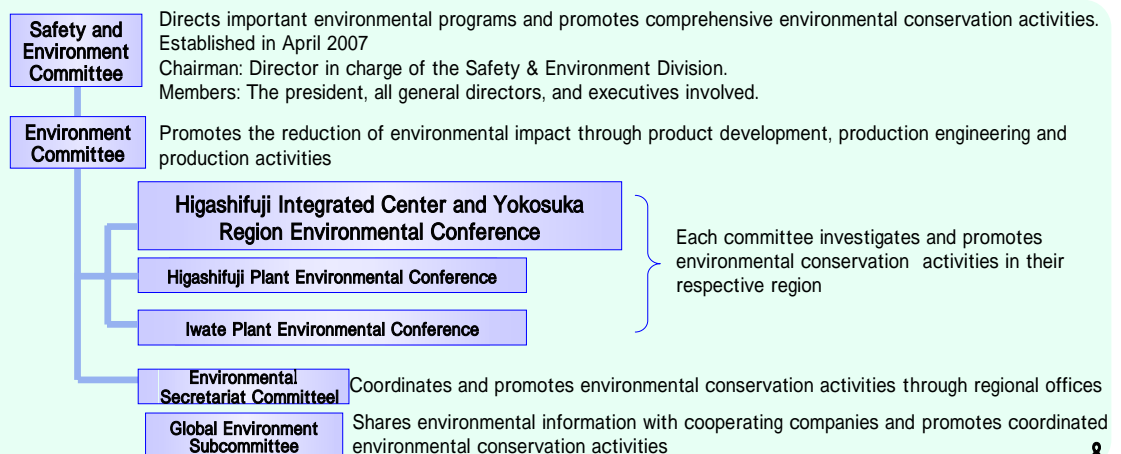
Comprehensive Approach to Environmental Issues

- 1. Contribution to a prosperous 21st century society**
Aim for growth that is in harmony with the environment and undertake the challenge of achieving zero emissions throughout all areas of business activities.
- 2. Development of environmentally considerate products and technologies**
Consolidate the technologies developed thus far, enhance them, and promote the development of products and technologies that enable the environment and economy to coexist harmoniously.
- 3. Voluntary actions**
Assess the impact on the environment in all stages (from development and production to use and disposal) and promote voluntary environmental initiatives that go beyond compliance with legal standards.
- 4. Working in cooperation with society**
Build close and cooperative relationships with a wide spectrum of individuals and organizations involved in environmental conservation, including related companies.

Environmental Policy

- Comply with national and local environmental laws and regulations as well other requirements, forecast and assess the environmental impact of automobile production, and strive to conserve and improve the environment.
 - Promote the manufacturing of products that both reduce environmental impact and satisfy customer needs by actively working on lowering vehicle weight, improving recyclability, and reducing substances of environmental concern—beginning at the product development stage.
 - Improve employees' awareness of environmental conservation, under the company slogan of "moving forward," and encourage employees to take responsibility for helping to build a recycling-based society.
 - Enhance communication with local communities and contribute to local environmental conservation initiatives.
 - In order to exist in harmony with abundant nature, continuously improve our environmental management system to reduce environmental impact.
 - In order to implement this environmental policy, set goals and targets, assess the achievement progress on a regular basis, and
- Kanto Auto Works ensures that all of its employees fully understand its environmental policy, in addition to disclosing that policy publicly.

Implementation Structure for Environmental Initiatives



Fourth Environmental Action Plan and Results of Activities in FY2008

Fourth Environmental Action Plan

To contribute to a prosperous 21st century society and aim for growth that is in harmony with the environment, Kanto Auto Works has adopted the Fourth Environmental Action Plan as a five-year plan from FY2006 to FY2010 that undertakes the challenge of achieving zero emissions in all of its business activities.

Action item		Specific actions and goals
Energy/Global Warming	Development/ Design	Development of light-weight technology to contribute to better fuel efficiency
	Production/ Logistics	Active promotion of CO2reduction measures
Recycling of Resources	Development/ Design	Further advancement and implementation of designs for recycling (DfR)
	Production/ Logistics	Promotion of the effective use of resources to contribute to the creation of a recycling-based society
		Reduction of water consumption
Substances of Concern	Production/ Logistics	Promotion of management and further reduction in the use of substances of concern (SOC) -Eliminate the use of four SOC (lead, mercury, cadmium and hexavalent chromium) globally
	Production	Reduction of volatile organic compound (VOC) emissions
		Reduction of substances subject to the PRTR Law* *Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in their Management
Environmental Management	Management	Strengthening of consolidated environmental management
		Enhancement of cooperative activities with suppliers
		Enhancement of environmental education
	Cooperation with Society	Reduction of environmental impact over the entire lifecycle of the product through active implementation of Toyota Eco-VAS* (Eco-Vehicle Assessment System)
		Contribution to the development of a recycling-based society
	Improvement of environmental information disclosure and two-way communication	

Goals for FY2008 and Activity Results

FY2008 marked the third year of implementation of the Fourth Environmental Action Plan; and goals were achieved in all areas.

FY2008 Goals (unconsolidated basis)		Activity results		Evaluation	Related pages in this report
Set a goal for the vehicle weight of each vehicle series to be developed		Vehicle weight goals achieved	Promoted activities to achieve vehicle weight of each vehicle series to be developed	○	P 11
Production	CO ₂ emissions: 112,000 tons-CO ₂ or less	88,000 tons-CO ₂	Activities to reduce CO ₂ were advanced through efforts that included introduction of handmade improvement and diligent everyday improvements.	○	P 14
Logistics	CO ₂ emissions: 6,312 tons-CO ₂ or less	5,567 tons-CO ₂	Enhanced mixed loading and utilized two-way runs Utilized marine and rail transport	○	
Set goals for the recycling rate and dismantling time of each vehicle series to be developed		Recycling goals achieved	Promoted designs for recycling (DfR), developed an easy-to-dismantle structure for each vehicle series developed, and used easy-to-recycle materials	○	P 13
Production	Volume of materials discarded 122kg/vehicle or less	102kg/vehicle	Reduced the volume of materials discarded by implementing action at the source, such as improving the yield of stamping machines	○	P 17
Logistics	Packaging material usage: 1,179 tons or less	840 tons	Promoted actions to reduce packaging material usage, such as changing material composition and reassessing size and shape	○	
Production	Water consumption: 2.6m ³ per vehicle or less	2.3m ³ per vehicle	Promoted the continued implementation of measures to reduce water consumption	○	
Set reduction goals for substances of concern by vehicle series developed		Achieved goals for SOC reductions	The switch-over to parts that do not contain substances banned by the EU ELV directive was advanced as planned	○	P 13
Production	Reduce VOC emissions to 44g/m ² or less	37 g / m ²	Reduced the usage of cleaning solvents and improved their recovery rate	○	P 18
	Reduce the discharge of substances subject to the PRTR law to 1,244 tons or less	753t	Linked reduction activities to VOC emissions reduction measures Switched to the use of purge solvents that contain only a small percentage of PRTR substances	○	
Manage and enhance the environmental performance (CO ₂ emissions, etc.) at consolidated affiliates		Implemented measures to manage and enhance environmental performance (CO ₂ emissions, etc.) at all consolidated affiliates		○	P 22
Enhance SOC management		Requested suppliers to implement voluntary activities to enhance their environmental performance Issued the Green Purchasing Guidelines in December 2006, and promoted action		○	P 37
Full-scale implementation of Eco-VAS		Implementation as planned of new-employee training, appointment of new persons in charge of promoting environmental issues, and new hiring of employees over the course of the year.		○	—
Request suppliers to improve environmental performance		Assessed the environmental impact of vehicles throughout their entire life cycle		○	—
Carry out beautification activities Cooperate with environmental protection organizations		Carried out cleaning activities in the areas around each business site Conducted environmental protection activities in cooperation with various organizations		○	P 30
Further enhance communication with local communities		In collaboration with prefectural authorities, meetings were held to discuss Kanto Auto Works environmental activities with local communities on December 3 at the Iwate Plant and on February 18 at the Higashifuji Plant		○	P 20 , 21



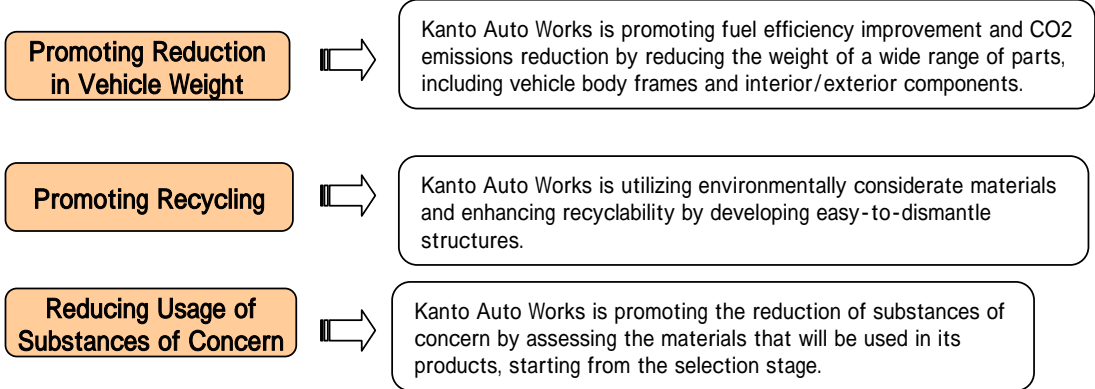
Development and Design

Development of Environmentally Considerate Products and Technologies

Kanto Auto Works is continually striving to develop products and technologies that will help to achieve a recycling-based society in harmony with the environment that future generations can also enjoy. To ensure that the products that are being developed and produced now will not adversely affect the environment in the future, Kanto Auto Works uses Life Cycle Assessment (LCA). This method takes into consideration the impact that products will have on the environment, starting at the development and production stages all the way through the use and disposal stages, thus enabling the provision of products with less environmental impact.

Environmental Policy for Product and Technology Development

Kanto Auto Works is always actively developing environmentally considerate products and technologies.



Promoting Reduction in Vehicle Weight

Kanto Auto Works is advancing improvements in fuel efficiency and reductions in exhaust emissions by reducing the weight of vehicle bodies.

Status of Measures to Promote Vehicle Weight Reduction

Example 1 of measures to reduce vehicle weight

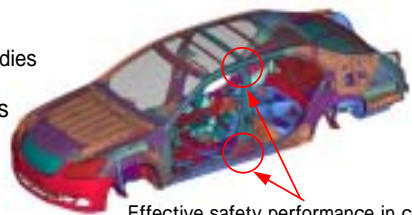
Initiatives to develop lightweight and extremely rigid vehicle bodies

Created vehicles that are lightweight and safe in collisions by adopting high tensile strength steel plates.

Created vehicle bodies that are lightweight and safe in collisions through the use of structural analysis to optimize the balance with other parts and ensure joint rigidity, which is effective in enhancing safety performance in collisions.

Achieved both noise and weight reduction by designing optimum structures for various parts and optimally placing noise-insulating and noise-absorbing materials based on internal noise properties.

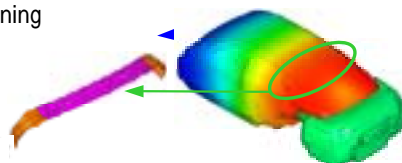
Collision safety



Effective safety performance in collisions

Optimum design based on structural analysis

Sensitivity



Structural optimization based on noise properties

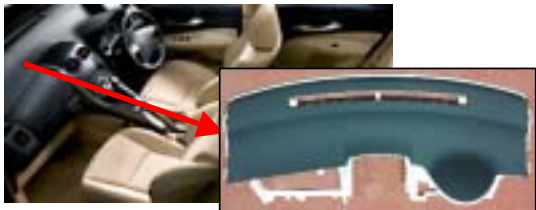
Effective vibration restraintment through optimal placement of the rear header

Status of Measures to Promote Vehicle Weight Reduction

Example 2 of measures to reduce vehicle weight

Development of a soft, environmentally-considerate instrument panel

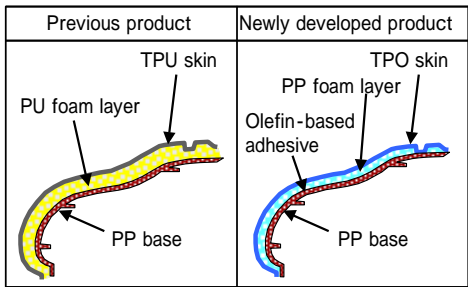
When developing vehicles, it is extremely important to make interior components lightweight and environmentally-considerate. With its newly developed soft instrument panel manufacturing technology and materials, Kanto Auto Works was able to simultaneously achieve both low cost and significant weight reduction, while substantially reducing the CO2 emitted during manufacturing.



New soft instrument panel adopted in the Blade Master

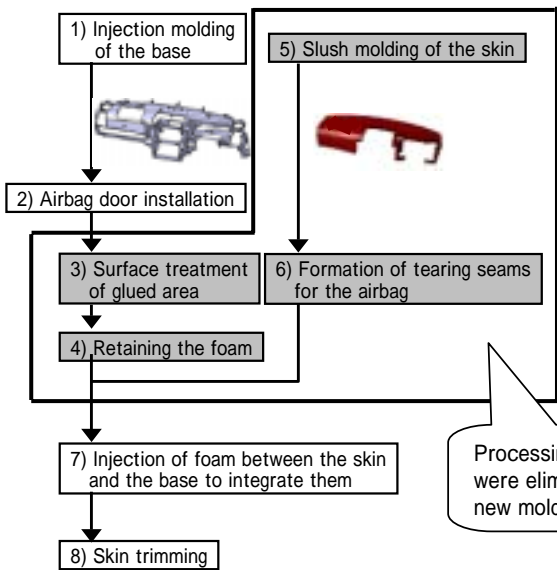
Kanto Auto Works developed a new product consisting of a TPO skin, PP foam layer, and an olefin-based adhesive to replace the formerly used TPU skin and PU foam layer. This has resulted in an improved feel and reduced weight by 20% compared to the previous product.

By eliminating certain processing steps, including the formation of the skin by itself and the application of surface treatment to the base material, Kanto Auto Works manufacturing (by 70% compared to the previous product).



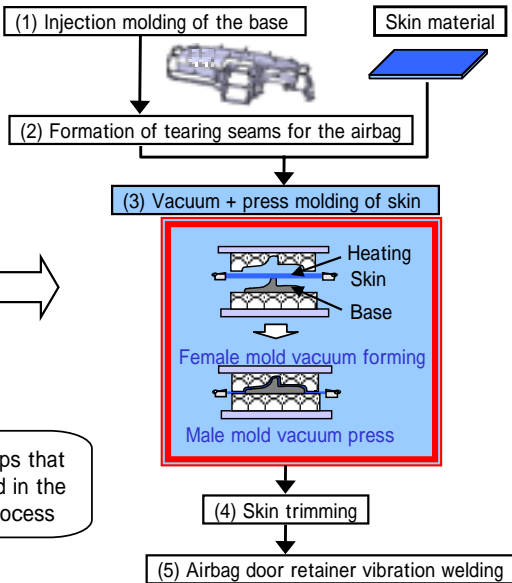
Change in material composition

Molding process for the conventional product (8 steps)



Processing steps that were eliminated in the new molding process

Molding process for the newly developed product (5 steps)





Promoting Recycling

Kanto Auto Works is working to improve recyclable design for a number of aspects, including adopting easy-to-recycle materials, promoting the use of recycled materials, and using easy-to-dismantle structures, with the aim of developing designs that effectively utilize the limited resources available and reducing the volume of waste generated.

Status of Measures to Promote Recycling

Examples of Measures to Promote Recycling

Actively began using Toyota Super Olefin Polymer (TSOP), a thermoplastic resin with excellent recyclability
Began using the “Easy to Dismantle Mark” to indicate certain points that assist in initial dismantling



Front and rear bumper that uses TSOP



“Easy to Dismantle Mark”



Easy-to-dismantle door trim



Reducing Substances of Concern

In order to reduce the substances of concern generated when disposing of ELVs, Kanto Auto Works is actively implementing environmentally considerate actions, starting at the design and development stage.

Reduction Goals for Substances of Concern

(Japanese automobile industry’s new voluntary goals announced in November 2002)

Lead	Reduction to 1/10 or less of the 1996 level in vehicles launched in 2006 and after (except for lead-acid batteries)
Mercury	Usage prohibited once the Automobile Recycling Law comes into effect (except for parts that assist in road safety)
Cadmium	Usage prohibited from 2007
Hexavalent chromium	Usage prohibited from 2008

Reduction Status of Substances of Concern

Examples of measures to reduce substances of concern

Began using chlorine-free TPO (Thermo Plastic Olefin) in moldings

Began using mercury-free bulbs in discharge headlights

Switched the balance weight for meter needles from lead to plastic, thus reducing lead usage.

Also switched meter illumination from bulbs to LEDs, eliminating the use of mercury.



Use of mercury-free bulbs in headlights



- Switched the balance weight for meter needles from lead to plastic.
- Eliminated the use of mercury by switching to LED-based illumination.

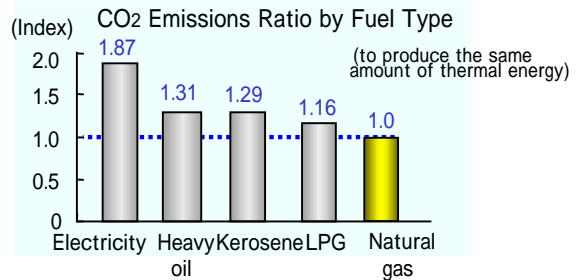
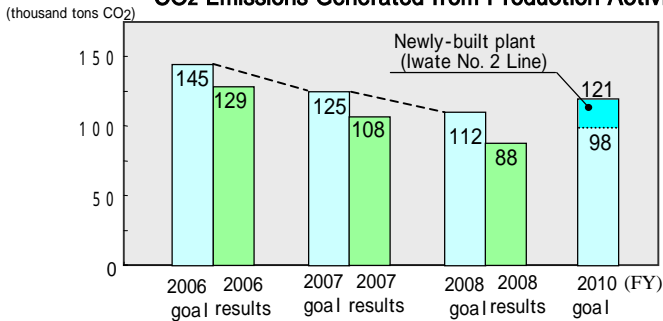
Production/Logistics

Energy/Global Warming

Reduction of CO₂ Emissions Generated from Production Activities

During FY2008, its third year of taking initiatives towards achieving the goals of the Fourth Environmental Action Plan, Kanto Auto Works actively promoted activities to reduce CO₂ emissions in order to help prevent global warming. This effort centered on the introduction of the cogeneration system at the Iwate Plant and the Higashifuji Plant, which significantly reduced CO₂ emissions.

CO₂ Emissions Generated from Production Activities

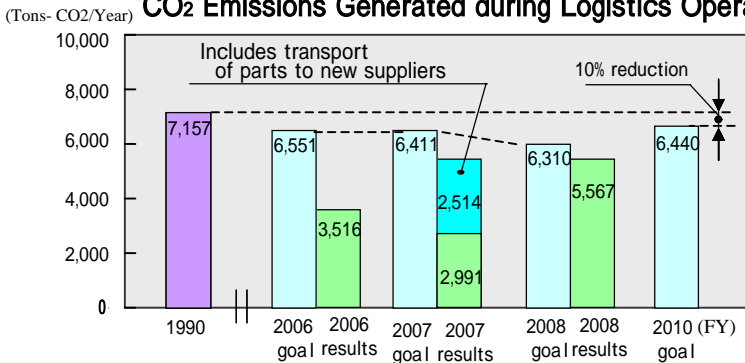


Reduction of CO₂ Emissions Generated During Logistics Operations

The FY2010 goal for reducing CO₂ emissions from logistics operations has been set at 10% below the FY1990 level. In order to reduce in environmental impact a modal shift* was implemented from ship to rail transport. Other measures to reduce the volume of CO₂ emitted from logistics operations include improving loading rates and sharing shipment space.

*Modal shift: Refers to a change in the transport and shipment methods; in particular, transporting goods via ships or railways instead of trucks.

CO₂ Emissions Generated during Logistics Operations



[Best Practices for Improving Efficiency of Freight Transportation]

- Inter-plant transportation: Teaming up with transportation outsourcing companies to consolidate cargo for existing routes and use return trips to also transport cargo.
- Intra-plant transportation: Reviewing existing routes and first considering whether existing routes can be expanded before establishing any new route.
- Inter-company transportation: Expanded use of existing routes and loading cargo for return trips, as well as examining ways to improve loading rate (whether via truck, ship, or train).

Examples of Initiatives to Conserve Energy

Ask the Designer

Saving Energy by Eliminating the PP Sheet Warming Lamp



Atsushi Ogawa
F301 Body
Vehicle Body Dept.,
Higashifuji Plant

Among the many processes for manufacturing automobiles, the body process is one that uses large amounts of electricity, air, and water. For that reason, we have continuously promoted measures to reduce energy use in that process in order to reduce CO₂ emissions.

The body process uses numerous robots, so our supervisor asked us to focus on the heat generated by the robot control panels and find ways to reuse it. We searched for ways to utilize that heat and we came up with the improvement of eliminating the warming lamp for the PP sheet, which was used only in winter.

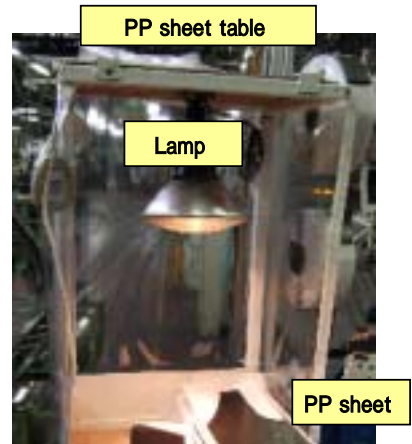
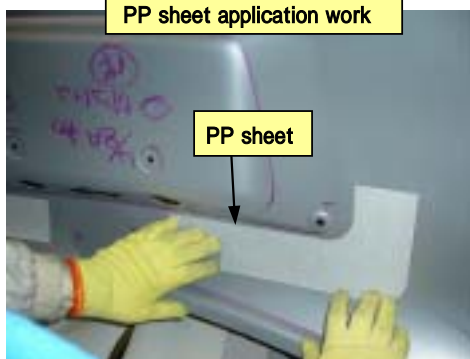
I would like to remember the feeling of achievement we had in solving that problem on our own and continue to come up with such improvements.

Previous situation

A vibration-prevention material called a “PP sheet” is applied to car doors and trunk lids. However, when the sheets are applied in colder temperatures in winter they tend to peel off. To prevent this, a lamp is placed under the PP sheet table to keep the sheets warm.

Point of focus

How to utilize heat generated by the robot control panel

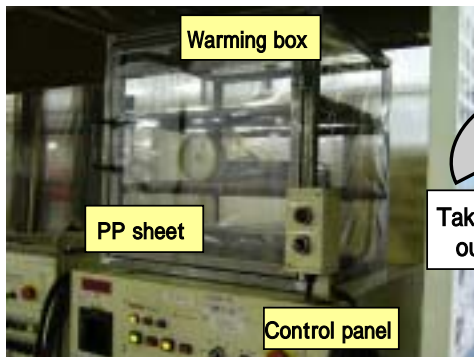


After improvement

Innovative feature

- * Utilizing the heat generated by the robot control panel
- * Proposing a warming box with excellent thermal in-flow

Making a hand-made warming box ⇒ Eliminating the lamp used for keeping the PP sheets warm



Mesh floor of the warming box allows the heat to flow in



Covering the PP sheets with plastic ⇒ Preventing the sheets from getting cold after their removal from the warming box

Reduction of 446.2 Kg-CO₂ per year

Examples of Initiatives to Conserve Energy

Ask the Designer

Saving Energy by Creating a Low-thrust Extractor and Non-powered Lifter

The Manufacturing Engineering Dept. introduces automation into production processes using new technologies, with a particular focus on promoting improvements that support the principle of fundamental safety*1 and rely on non-powered devices. Recently, we created a collaborative device that employs both a transporter that uses an ultra-low-thrust motor and a non-powered lifter that uses a spring. More specifically, the lifter is equipped with a mechanism that maintains a constant descending speed even when the parts to be lifted vary in weight.

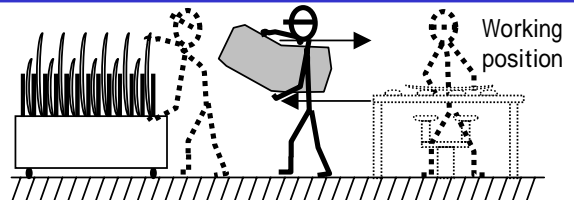
We hope to continue creating innovative devices, relying on our own wisdom, creativity, and attention to detail.



Hiroyuki Chiba
Manufacturing Engineering Dept.
Administrative Dept.
Iwate Plant

Previous situation

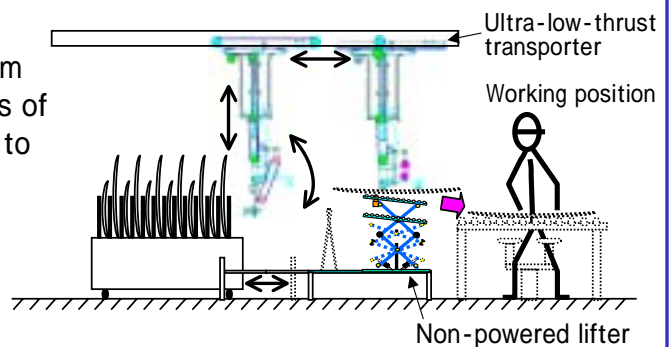
The task of removal from a trolley and carrying window glass pieces that are heavy and vary in weight must be performed with great care.



After improvement

Designing an energy-saving system that can handle the entire process of lifting window glass and moving it to the manufacturing area.

1. Ultra-low-thrust extracting system

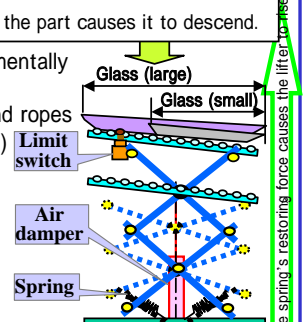


Innovative feature

Non-powered transporting system that is fundamentally safe and works in tandem with the human operator

- (1) Extractor that uses an ultra-low-thrust motor and ropes (fundamental safety¹)
- (2) Non-powered lifter that relies on springs

The limit switch on the air damper adjusts the expelled air volume according to the weight (size) of each piece of glass, thereby maintaining a constant descending speed.



Effects

- Fundamental safety¹ and energy saving achieved through the use of an ultra-low-thrust motor (DC 24V, 20W motor)
- Ability to move pieces of glass of varying weights without using any power and without applying any shock
- System simplification leading to a reduction in the number of processes and footsteps required by the worker to remove glass (reduction of 18 seconds per unit)
- Elimination of an operation requiring the worker to turn around, as well as one that required the worker to carry a heavy object

Reduction of 554 Kg-CO₂ per year*2

*1. The concept of "fundamental safety" refers to the reduction or elimination of the actual causes that lead a machine to harm people or the environment

*2. Compared to the case where a conventional large-capacity motor is used

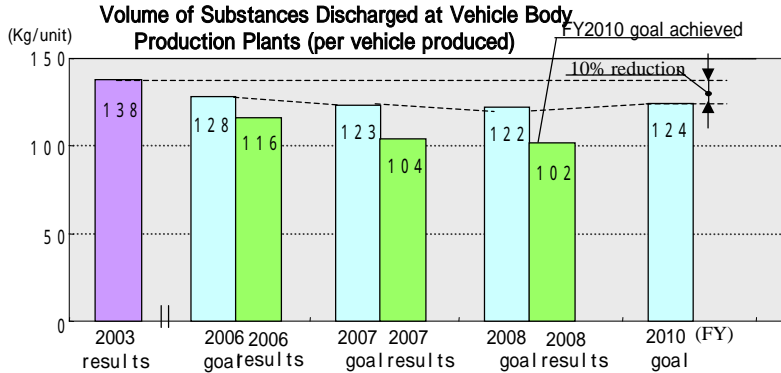
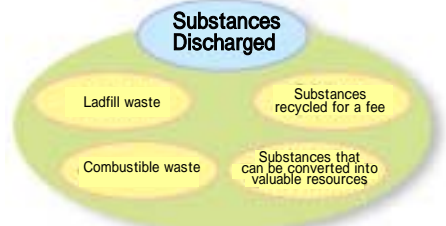
Recycling of Resources

Activities to Reduce the Volume of Substances Discharged

Kanto Auto Works expanded actions to reduce the volume of all substances discharged, while continuing its actions to achieve zero landfill waste and reduce combustible waste that were begun in FY2005. The FY2010 goal is a 10% reduction in the volume of substances discharged per vehicle produced compared to the FY2003 level. Kanto Auto Works met this goal in FY2008.

Continued to promote the improvement of yields for scrapped materials in the stamping process, which account for over 90% of substances discharged.

Note: The term "substances discharged" includes landfill and combustible waste, substances recycled for a fee, and substances that can be converted into valuable resources



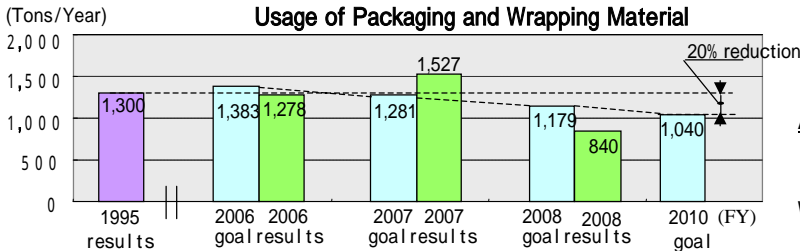
- Items Implemented in FY2008 (including ongoing activities)
- Reducing un-adhered paint
 - Reducing wastewater sludge
 - Recycling
 - Recycling discarded plastics
 - Recycling wastewater sludge as raw material for cement
 - Recycling waste oil and waste paint thinner
 - Conversion into valuable resources
 - Conversion into valuable resources
 - Waste oil, · Metals, · Used paper

Activities to Reduce Usage of Packaging and Wrapping Materials

Kanto Auto Works has set a goal of reducing the usage of packaging and wrapping materials by 20% by FY2010, compared to the FY1995 level.

In FY2008, Kanto Auto Works has already achieved its FY2010 reduction goal by modifying the packaging and wrapping materials (switching from carbonated board to bubble sheets).

Example of improvement
Change of packaging materials



Before improvement
Packaging bumpers with corrugated board



Weight: 5kg per bumper

After improvement
Use of bubble sheets

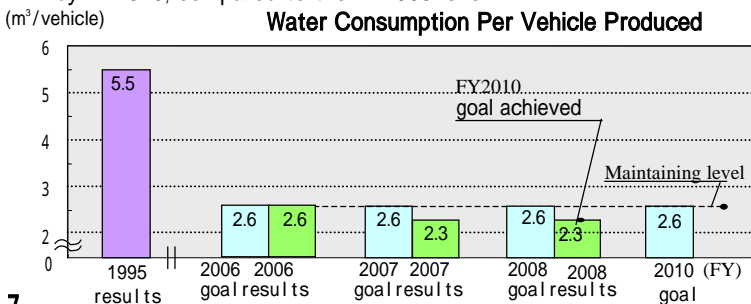


Weight: 0.5kg per bumper

Activities to Reduce Water Consumption

The water consumption goal is to reduce water consumption by 50% by FY2010, compared to the FY1995 level.

Example of improvement
Use of rainwater



Content of improvements

Collecting water in drum cans at each shop:
2 drum cans per month at each shop
After filtering the water is used for such tasks as washing work gloves or cleaning the floor



Reduction of Substances of Concern

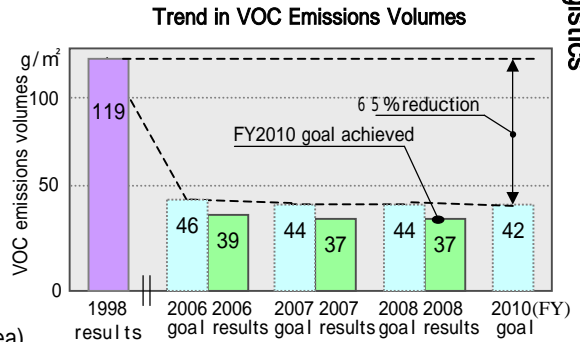
For the Fourth Environmental Action Plan, Kanto Auto Works focused on the management and reduction of VOC emissions and substances subject to PRTR, and is taking action focused on the painting processes of automobiles and parts (bumpers, etc.).

Reducing VOC Emissions

The goal for VOC emissions during vehicle body painting is a 65% reduction compared to the FY1998 level (per unit of painted area) by FY2010.

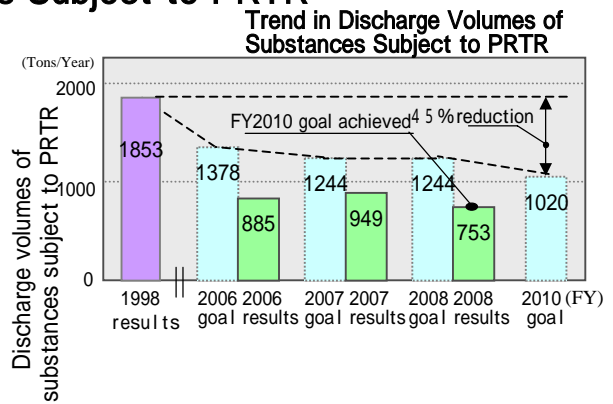
In FY2008, Kanto Auto Works took various steps, such as reducing the usage of and improving the recovery rate for cleaning solvents, as well as introducing a high-efficiency painting machine, thus achieving both the FY2008 and FY2010 goals ahead of schedule.

VOC: Volatile Organic Compounds (emissions per unit of painted area)



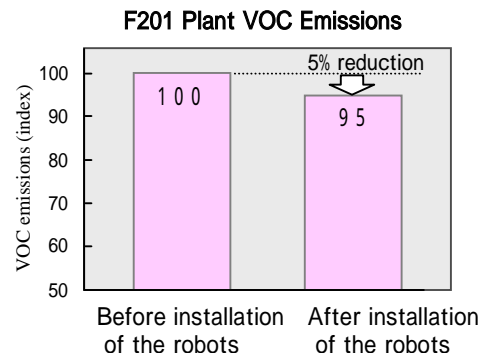
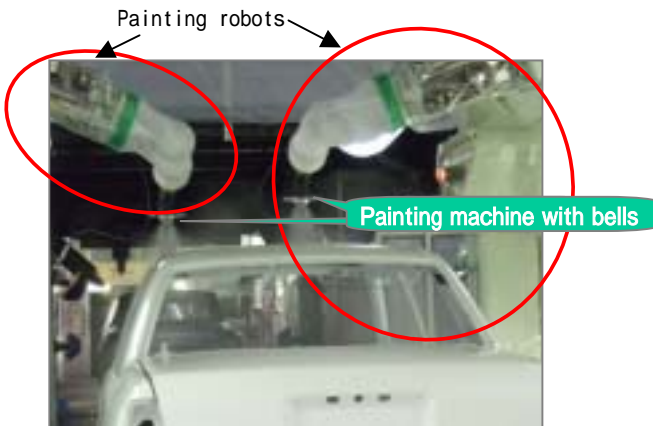
Reducing the Volume of Substances Subject to PRTR

The goal for the discharge volume of substances subject to PRTR (Pollutant Release and Transfer Register) is a 45% reduction by FY2010 compared to the FY1998 level. In addition to taking the above-mentioned measures for reducing VOC emissions during vehicle body painting, Kanto Auto Works has achieved both the FY2008 and FY2010 goals ahead of schedule by replacing cleaning solvents that contain substances subject to PRTR.



Reducing Substances of Concern

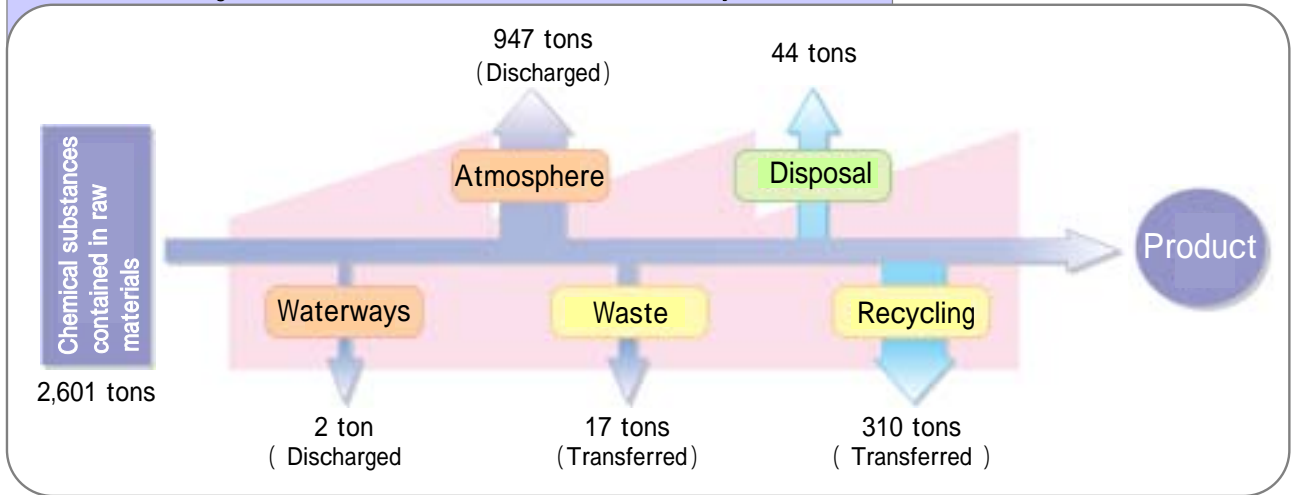
Higashifuji Plant F201 installed highly efficient painting robots to replace obsolete painting systems. Painting robots follow the contours of vehicle bodies better than the conventional reciprocal painting systems and improve the cleaning solvent recovery rates. The plant also installed rotary atomizers (with bells), reducing its VOC emissions by 5%.



Substances Subject to PRTR

In FY2008, the volumes of substances subject to PRTR released into the atmosphere and waterways (see previous page) and transferred as waste or for recycling are as indicated in the diagram below. Figures for individual plants and substances are provided in the tables below. Kanto Auto Works will continue making efforts to reduce the usage volumes of substances subject to PRTR.

FY2008 Discharge and Transfer Volumes of Substances Subject to PRTR



Higashifuji Plant

Substance	Amount handled	Released volume			Transferred volume		Volume removed ¹	Consumption volume ²
		Air	Waterways	Waste	Volume recycled	Volume removed ¹		
Zinc compounds (soluble)	9	0	0	0	1	0	8	
Bisphenol A epoxy resin intermediate layer	15	0	0	0	0	3	12	
Ethylbenzene	140	134	0	0	0	0	6	
Ethylene glycol	231	0	0	0	0	0	231	
Xylene	262	127	0	0	99	0	35	
Organic tin compounds	19	0	0	0	1	0	18	
1,3,5-Trimethylbenzene	32	32	0	0	0	0	0	
Toluene	243	150	0	0	49	0	44	
Nickel compounds	1	0	0	0	0	0	1	
Hydrogen fluoride and its water-soluble salts	3	0	1	0	2	0	0	
Benzene	30	0	0	0	0	0	30	
Manganese compounds	4	0	0	0	1	0	3	

Iwate Plant

Substance	Amount handled	Released volume			Transferred volume		Volume removed ¹	Consumption volume ²
		Air	Waterways	Waste	Volume recycled	Volume removed ¹		
Zinc compounds (soluble)	15	0	0	0	1	0	14	
Bisphenol A epoxy resin intermediate layer	34	0	0	0	0	10	24	
Ethylbenzene	79	54	0	0	7	7	11	
Ethylene glycol	386	0	0	0	0	0	386	
Xylene	193	66	0	0	49	16	62	
Organic tin compounds	18	0	0	0	1	0	17	
1,3,5-Trimethylbenzene	57	51	0	0	1	5	0	
Toluene	232	131	0	0	24	1	76	
Nickel compounds	2	0	0	0	1	0	1	
Hydrogen fluoride and its water-soluble salts	5	0	1	0	3	0	0	
Benzene	8	0	0	0	0	0	8	
Manganese compounds	6	0	0	0	1	0	4	

Higashifuji Integration Center

Substance	Amount handled	Released volume			Transferred volume		Volume removed ¹	Consumption volume ²
		Air	Waterways	Waste	Volume recycled	Volume removed ¹		
Ethylbenzene	1	0	-	-	-	-	1	
Xylene	7	1	-	-	-	-	6	
Toluene	16	3	-	-	-	-	13	

*Unit: tons/year

1. Volume removed:

The volume that is neutralized, broken down, or changed to other substances in the particular plant

2. Consumption volume:

The volume that is contained in or accompanies products transported outside the particular plant

3. Figures for discharge volume, transfer volume, volume removed, and consumption volume, are rounded off, so the totals may not necessarily correspond to the quantities handled.



Environmental Preservation Activities at the Higashifuji Plant

Located at the foot of Mt. Fuji, where nature abounds, the Higashifuji Plant is promoting continual environmental management activities, in an effort to coexist with the global and the local environment.

Communication

Environmental Dialog Meeting

With the aim of sharing environmental information with the local community, the Higashifuji Plant organized an “environmental dialog meeting” during which representatives of companies based in Shizuoka Prefecture, where the plant is located, and members of the surrounding communities, were presented with information on environmental management activities, toured the plant, and exchanged opinions.



Improvement Initiatives

Pursuit of “Zero Loss” Production

Kanto Auto Works performs regular inspections of operations and promotes various improvements in order to achieve “zero loss” at its productions plants.



Inspections of energy loss (air leakage)

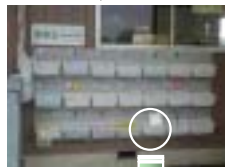
Contest for improving energy conservation

Reutilization of Waste Materials

Waste Materials Reduction through Reutilization

Employees are shown various waste materials that can be reused and called upon to reutilize such materials themselves

Eco-Plaza (reusable items display)



PR on reusable items



Part banding bands



Reutilization of packaging for archived documents



Greening Promotion

Rooftop Vegetation

Rooftop vegetation is promoted as a means of reducing environmental impact

- Insulates buildings, conserves energy, and ameliorates the heat island effect
- Absorbs air pollutants and carbon dioxide



Before rooftop vegetation added (concrete roof)



After rooftop vegetation added

Contribution to Local Communities

Clean-up Activities around the Plant

Everyday “Clean Campaign” and “Happy Heart Movement” activities are being carried out near plants on the roads and other nearby areas to clean up garbage.

*Happy Heart Movement: An initiative with the goal of making the plant a cheerful, joyful, and healthy place



Along a prefectural road

In front of JR Iwanami Station



Ecocap Movement

KAW is participating in the Ecocap Movement, a new initiative being implemented that seeks to make effective use of PET bottle caps that currently end up as waste material



PR poster calling for support through collection of caps

The Ecocap Movement is being promoted outside of Kanto Auto Works as well by other, local businesses; and it has contributed enough funds thus far to purchase polio vaccine for 219 people.

(A total of 176,396 caps have been collected)





Environmental Aspects

Environmental Preservation Activities at the Iwate Plant

Under the banner of “manufacturing vehicles that are both user-friendly and environmentally considerate,” the Iwate Plant engages in production activities while harmoniously coexisting with the lush, green environment of Iwate Prefecture.

Communication

Environmental Communication Reporting Session

Residents of the town of Kanegasaki and representatives of businesses within Iwate Prefecture were invited to a session that provided them with information on activities and offered an opportunity for discussion.



Iwate Environmental Kingdom Exhibition

Kanto Auto Works took part in the Environmental Kingdom Exhibition hosted by Iwate Prefecture and used the opportunity to introduce various company initiatives to local residents.



Utilization of Natural and Renewable Energy

Buses powered by Biodiesel Fuel (BDF)

Cooking oil discarded by employees and from the employee cafeteria is collected and used to make bus fuel.



Fuel production equipment Fuel used to power company-owned buses

Reusing the Cold Energy of Snowcapped Mountains

Water from melted snow is collected and reused for air conditioners in the summer.



Snow that falls in the winter is stored

Lawn Maintenance using Goats

CO₂ emissions are reduced by not using mechanical lawn mowers.



Employees assist animal breeding (See video clips)

Afforestation

Kanto Auto Works, together with primary school students, kindergartners and area residents, collect acorns and cultivate seedlings. These seedlings are then planted to help build up the nearby forest around the plant.



Employees and their families



Acorn collection at Sengan-ishi

Contributing to Local Communities

Donations of empty cans to welfare organizations and cleanup activities along roads in the area around the plant are conducted regularly.



Clean-up activities at nearby parks

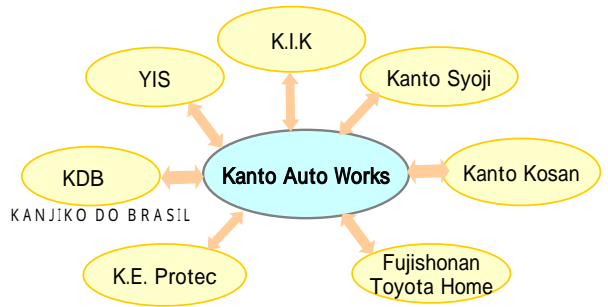


Clean-up activities around the plant

Consolidated Environmental Management

Environmental Initiatives at Consolidated Companies

Under the Fourth Environmental Action Plan, Kanto Auto Works and its consolidated subsidiaries have joined together to implement initiatives designed to reduce environmental impact.



Initiatives to Achieve Zero Emissions (Recycling)

Kanto Auto Works' seven consolidated companies

Environmental Initiatives at Fujishonan Toyota Home

Toyota Home is implementing environmental measures throughout all of its operations related to house building. Toyota Home builds houses in line with its motto: "A longer-lasting house benefits the environment."

We also participated in the environmental fair sponsored by Fuji City; and contribute to local communities by, for example, having consultants on the environment and energy conservation available to advise residents on household energy-saving measures.



Fuji City environmental fair

Initiatives to Reduce Environmental Impact

At Toyota Home, the manufacturing and sales departments work together to make Toyota Home a more environmentally conscious company. By building products that last longer and using energy-conserving "green" materials, Toyota Home is reducing CO₂ emissions and trying to achieve zero emissions at its construction sites. We will reduce CO₂ emissions by increasing the number of houses constructed by Toyota Home.

Initiatives to Achieve Zero Emissions (Recycling)

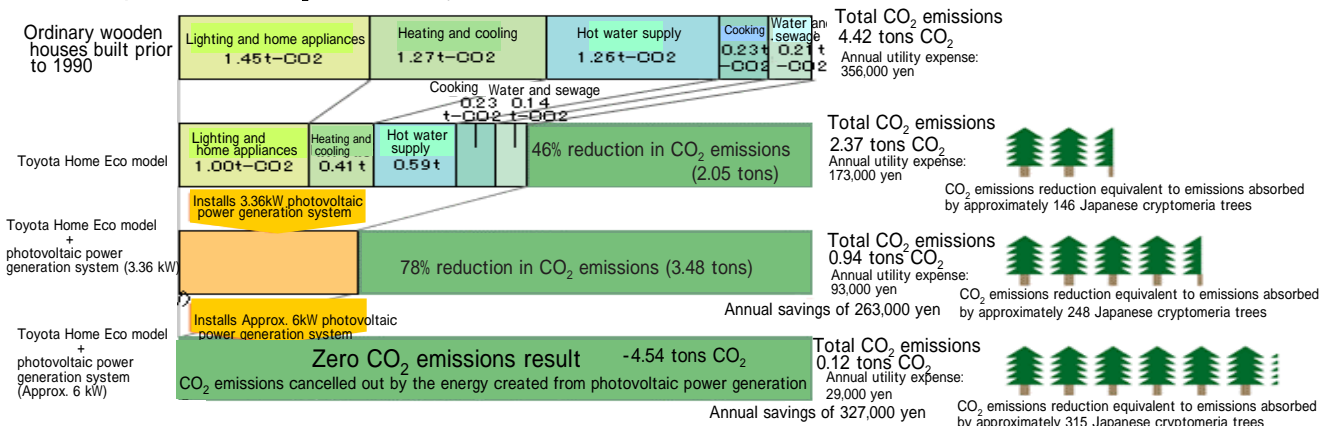
Trends in the Volume of Waste Generated at Construction Sites according to the Unit Construction Method

The data shows the actual volume of waste generated from building an average single detached house of 130 to 140 m² sold by our model dealers.

We are aiming to achieve zero emissions by establishing comprehensive recycling routes and improving sorting methods.

In FY2008, Toyota Home reduced the volume of waste generated at its construction sites by 52% per house (compared to the FY2000 level).

Comparison of Annual CO₂ Emissions of Toyota Home Houses and Conventional Houses



Environmental Data

Legend

Maximum (Orange), Average (Blue), Control value (Yellow)

The graphs show actual measurements against a control value of 100

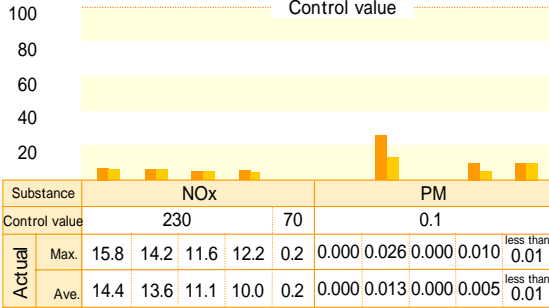
Higashifuji Plant

Site area: 265,589m²

Location: 1200, Mishuku, Susono-shi, Shizuoka Prefecture

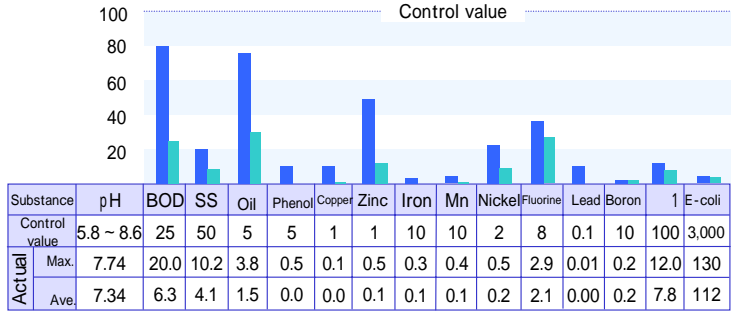
Air Pollution Data

Conforming to the Air Pollution Control Law and Pollution Control Agreement



Water Pollution Data

Conforming to the Water Pollution Control Law and Pollution Control Agreement



*1. Ammonia, ammonia compounds, nitrous acid compounds and nitric acid compounds

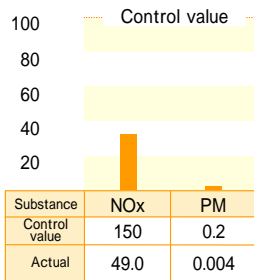
Head Office/Taura Works

Site area: 54,642m²

Location: Tauraminato-cho, Yokosuka-shi, Kanagawa Prefecture

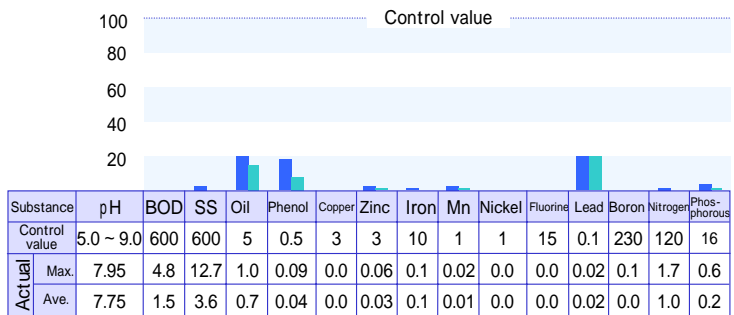
Air Pollution Data

Conforming to the Air Pollution Control Law and Prefectural Ordinances



Water Pollution Data

Conforming to the Sewerage Law



Air Pollution Data

The units for air pollution are: NOx - ppm; PM - g/m³N
 The actual measurement of NOx and PM refers to values for the control values of each particular target facility with boilers.
 Oil: N-hexane extracts content

Water Pollution Data

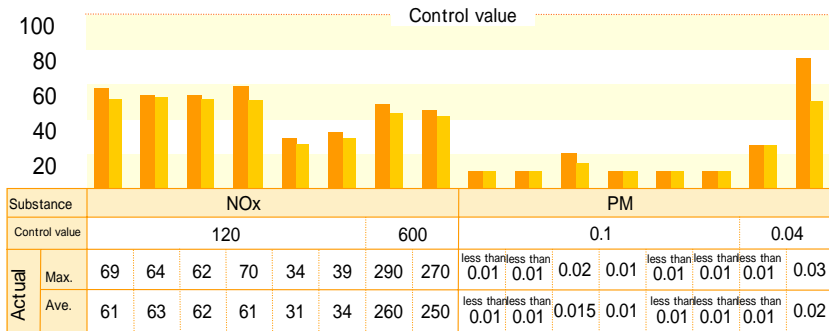
The control values for all substances are shown in mg/l, except for the pH item
 N.D.: (Not detected) Below detectable levels
 pH: Hydrogen ion concentration
 BOD: Biochemical oxygen demand
 SS: Concentration of suspended solids in water
 *Head Office / Taura Works are not subject to control values for ammonia, ammonia compounds, nitrous acid compounds and nitric acid compounds.
 *The Higashifuji Plant and Iwate Plant are not subject to control values for nitrogen and phosphorous.

Iwate Plant

Site area: 963,797m2 Location: 1, Nishinemoriyama, Kanegasaki-cho, Isawa-gun, Iwate Prefecture

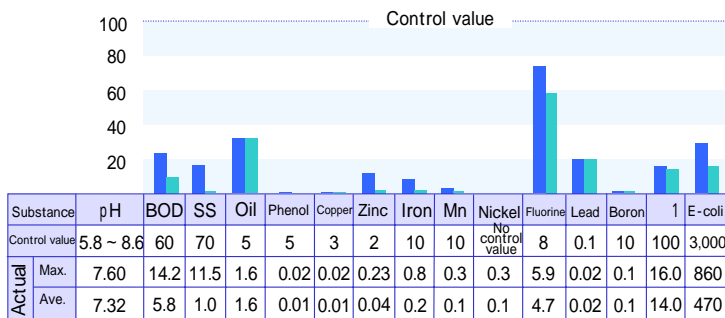
Air Pollution Data

Conforming to the Air Pollution Control Law and Environmental Preservation Agreement



Water Pollution Data

Conforming to the Water Pollution Control Law and Environmental Preservation Agreement



*1. Ammonia, ammonia compounds, nitrous acid compounds and nitric acid compounds

There are some other control parameters whose actual measurements are below the N.D. level, including those listed below:

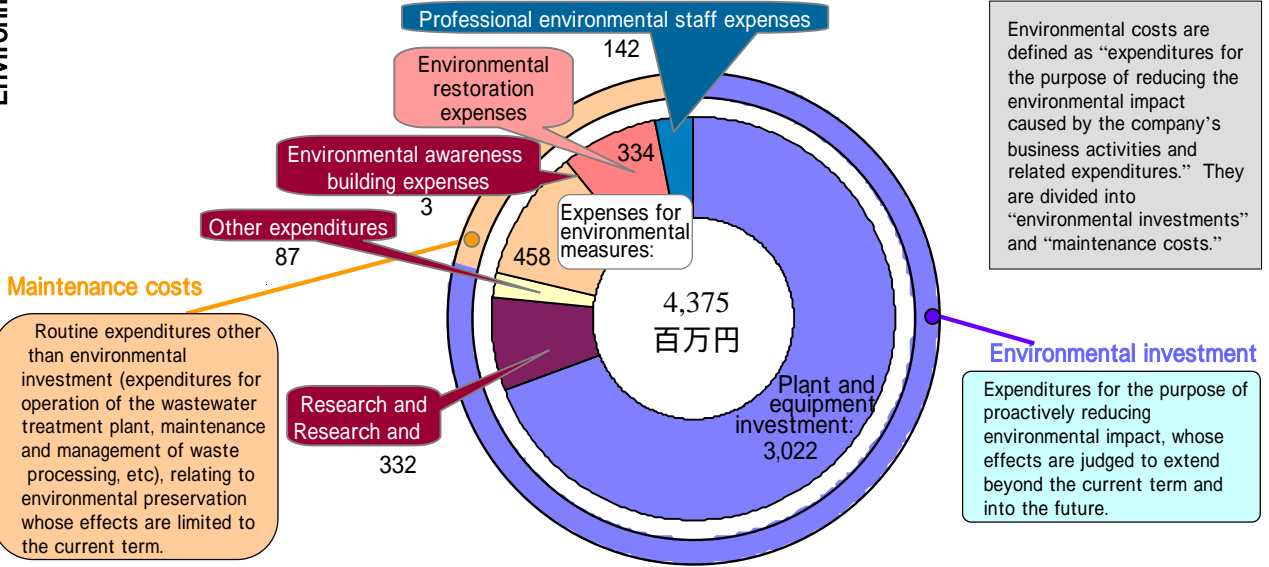
Cadmium, cyanide, organophosphorus compounds, chromium (VI) compound, arsenic, total mercury, alkylmercury, polychlorinated biphenyl, total chromium, trichloroethylene, tetrachloroethylene, dichloromethane, carbon tetrachloride, 1,2-dichloroethane, 1,1-dichloroethylene, cis-1,2-dichloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, 1,3-dichloropropene, thiuram, simazine, thiobencarb, benzene and selenium.

Environmental Accounting

In FY2008, total environmental costs were 4.4 billion yen, accounting for 0.7% of net sales. Some of the major investments Kanto Auto Works made included the introduction of a coating robot that helps to lower the emissions of VOCs and the upgrading of wastewater treatment facilities.

Classification of Environmental Costs

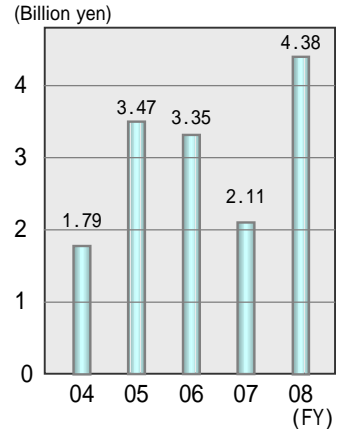
FY2008 Action Results Based on Kanto Auto Works' Classifications Approach to Environmental Costs



FY2008 Results Based on the Ministry of the Environment's Classifications

Classification		Investments	Expenses
Business area costs	Pollution prevention costs	814	240
	Global environmental preservation costs / Resource circulation costs	2,208	218
Upstream / downstream costs	Environmental preservation costs from non-production activities	0	9
Management costs	Environmental advertisements, environmental report publication costs, expenses for professional environmental staff, etc.	0	146
Research and development costs	R&D expenses for reducing substances of environmental concern	0	332
Social activity costs	Environmental preservation costs for enhancing social understanding of Kanto Auto Works' activities, and support activities	0	74
Environmental damage remediation costs	Environmental remediation costs	0	334
Total		3,022	1,353

Trends in Environmental Costs



Effects Associated with Environmental Costs

The effects associated with environmental costs have been described on pages 11 to 24 of this report as improvements in reduction of environmental impact as a result of environmental preservation activities. Economic effects resulting from environmental investments were determined by totaling the actual effects for those items that could be backed by solid data, as indicated in the diagram on the right. Economic effects based on hypothetical calculations have not been carried out for the areas of "contributions to product value," "environmental risk avoidance," and "improved corporate image."

