



Environmental & Social Report 2004



Toyota Motor Corporation (TMC) has been issuing environmental reports since FY1998 and in FY2003 changed the title of the report to "Environmental & Social Report."

In order to further improve information disclosure Toyota would like to hear what you have to say about this report and the actions outlined therein. Please make use of the questionnaire included at the end of the report to voice your frank opinions and thoughts.

Scope of Report

Environmental Aspects

Toyota's initiatives on an unconsolidated basis mainly within Japan, and the progress of consolidated environmental management both in Japan and overseas

Social Aspects

Toyota's initiatives on an unconsolidated basis within Japan and overseas examples

Period covered

The period covered in the data is from April 2003 to March 2004, and major developments are described as of July 2004.

Next Issuance

Japanese: Summer 2005
English: Autumn 2005

Website



<http://www.toyota.co.jp/en/envrep04>



Gifu Swallowtail Butterfly

The Gifu Swallowtail (on the front cover of this report) belongs to the Papilionidae family of butterflies and has lived on the Japanese archipelago since ancient times. The species, unique to Japan, can be found in numerous places from Akita Prefecture, northern Japan, right down to Yamaguchi Prefecture in the southwest of the country. However, with its natural habitat disappearing throughout the country, the Gifu Swallowtail has been designated an endangered species. This majestic butterfly, however, is one of the 1,295 species of flora and fauna that can be seen within the grounds of the Toyota Shirakawa-Go Eco-Institute, which Toyota is establishing in Shirakawa Village, Gifu Prefecture.

The Toyota Shirakawa-Go Eco-Institute is focusing much effort on encouraging the protection of animals, including the Gifu Swallowtail butterfly, through such initiatives as hands-on environmental education.



This mark refers to the page where more information can be found

Please visit the websites below:



Toyota Environmental Chronology
<http://www.toyota.co.jp/en/envrep04/chrono/>



Environmental data of each plant and housing works
<http://www.toyota.co.jp/en/envrep04/plantdata/>

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From Toyota's standpoint as a member of the Japanese automotive industry, I have often emphasized our "desire to work hard so that we will be able to point to the various contributions that Japan's automotive technology has made toward alleviating the impact automobiles have on the environment."

The second generation Prius, which was launched in September of 2003, was developed on the basis of this idea. Since its launch, the Prius has received high acclaim and support in markets around the world, and sales are increasing steadily. The success of the new Prius has provided us with a great deal of confidence in our stance of making environmental issues a central management issue.

Toyota hopes to bring the benefits of mobility offered by automobiles to as many people as possible, and is striving to contribute to society by further expanding the appeal of automobiles throughout the world. To accomplish this, one of the most important tasks for Toyota to address involves environmental issues.

Toyota adopted the Global Vision 2010 as a medium- to long-term management plan that puts forward the corporate image Toyota should strive to attain. As one objective, "Toyota will strive to become a leader and driving force in global regeneration by implementing the most advanced environmental technologies." I have already mentioned the new Prius above, but Prius sales still account for only a very small percentage of Toyota's total sales. We will seek to achieve class-leading environmental performance for our other vehicle series as well. Considering that the automobile industry generates a certain level of environmental impact in all areas of its operations, Toyota reaffirms the importance of carrying out top-level environmental action in all countries and regions at the development and design, production, sales, and disposal stages of a vehicle's life cycle.

As another aspect of the corporate image Toyota is pursuing, the Global Vision 2010 states that, "Toyota seeks to become a truly global enterprise that is respected by all peoples around the world." We would be extremely happy if Toyota's environmental initiatives are of use in the various regions and countries where they are carried out. At the same time, being able to contribute to society through such activities instills pride and courage among the numerous Toyota employees who are steadily working in various areas of Toyota's operations around the world.

Finally, Toyota places great importance on the idea of "good faith." Good faith means acting with sincerity and without betraying the confidence and expectations of others, keeping one's promises, and fulfilling one's duties, and this is embodied in the following way in the Guiding Principles at Toyota Motor Corporation: "Undertake open and fair corporate activities to be a good corporate citizen around the world." True to the idea of good faith, Toyota will consider the interests of all stakeholders, and contribute to the sustainable development of society and Earth at large through its business activities.

July 2004

Fujio Cho
President, Toyota Motor Corporation
Chairman, Toyota Environment Committee

The Environmental & Social Report 2004



The Environmental & Social Report 2004 primarily covers activities during FY2003.

In FY2003, Toyota's main environmental achievements were the confirmation of the prospect of achieving the Third Toyota Environmental Action Plan goals through an interim review, the launch of the new Prius, start of FCHV bus operations, the introduction of the comprehensive environmental impact assessment system Eco-VAS, the creation, announcement, and expansion of the Toyota Recycle Vision, progress in responses to the Automobile Recycling Law, and incorporation of recyclable designs in the Prius, Raum, and other new vehicles.

The section on social aspects, which was begun in FY2003, discusses Toyota Motor Corporation's fundamental thinking concerning its relationship with customers, society, business partners, and employees, and lists the progress of initiatives over the course of the previous fiscal year. The focus is on Toyota's activities in Japan, but also included are reports on best practices that overseas affiliates have taken in other countries and regions in response to local conditions.

In the future, Toyota intends to further enhance the content of the section on social aspects.

July 2004

A handwritten signature in black ink, reading "Kosuke Shiramizu".

Kosuke Shiramizu
Executive Vice President, Member of the Board, Toyota Motor Corporation
Vice Chairman, Toyota Environment Committee

Corporate Philosophy

Creating a Prosperous Society Together by Making Things and Making Automobiles

Toyota hopes that the 21st century will be truly prosperous for society, and aims to grow as a company together with its stakeholders, including customers, shareholders, business partners, and employees, through making things and making automobiles, while seeking harmony with people, society, the global environment and the world economy.

In order to put this management philosophy into practice, the "Guiding Principles at Toyota Motor Corporation" were established as the fundamental management policy. (Please see p. 5) These principles were adopted in 1992 to codify the business spirit handed down since the company's foundation, and revisions including the stipulation of legal compliance were made in 1997. Each of the seven items is a cornerstone of Toyota's business activities.

Guiding Principles at Toyota Motor Corporation

(Adopted in 1992, revised in 1997)

Corporate Policy

Long-term policies and annual corporate policies
Defines projects and priorities, quantitative goals, etc. to achieve the medium- to long-term corporate plan (reviewed every year)

Medium-term Plan

A 3-year medium-term corporate plan (revised every year)

Global Vision 2010

Proposes the corporate image which Toyota should strive to achieve in 2010 and beyond (announced in 2002)

Contribute to the Realization of a Prosperous Society in the New Century through Global Vision 2010

To Be Proposed in Detail at the World Congress on ITS and EXPO 2005, Aichi, Japan

In April 2002 Toyota adopted the Global Vision 2010 which proposes the corporate image which Toyota should strive to achieve in 2010 and beyond. (Please see p.5) Centered on the basic theme of "Innovation into the Future — A Passion to Create a Better Society," and with a view toward what society is expected to be like in the medium to long term, the Vision sets the course for the multi-faceted roles to be played by Toyota vis-à-vis society, people and the Earth.

Specifically, Toyota has made internal and external commitments to: lead a recycling-based society; to develop the age

of ITS and the ubiquitous network society; promoting motorization on a global scale; and becoming a presence that is respected in a mature society.

Toyota plans on making specific proposals in tangible form concerning the realization of a prosperous society in the new century by participating in and displaying exhibits at the World Congress on ITS in October 2004 and at the 2005 World Exposition, Aichi, Japan (EXPO 2005) opening in March that year.

Toyota believes that to realize the corporate image that it is striving to achieve in the future, without complacency, it is important to undertake a paradigm change from the following three perspectives: Technology development/Product development; Management; and Profit structures.

As inter-company competition intensifies

on a global scale, Toyota is working to strengthen its business foundations further.

*Ubiquitous Networks:

An environment under which the advance of information and telecommunications allows anyone to access all kinds of information anytime from any location



Toyota Group Pavilion at the EXPO 2005

Please see p. 80 for details on Toyota's exhibits at the EXPO 2005

The Spirit of the Toyoda Precepts Passed on since Toyota's Foundation

The Toyoda Precepts, passed on from the time of Toyota's foundation up to the present day, have acted as the core of Toyota management. The precepts capture the thinking of the founder of the Toyota Group, Sakichi Toyoda, and have become the basis of the Guiding Principles at Toyota Motor Corporation.

Initially this did not have a definite shape. However, with the growth of the scope of the company, the need arose for the principles to be codified so that they could be propagated among employees. Risaburo Toyoda and Kiichiro Toyoda, in the pioneer days of the company, gathered together the teachings of Sakichi Toyoda and published them in the form of the Toyoda Precepts on October 30, 1935, the fifth anniversary of his death. From that time, the precepts have played the role of a spiritual support for employees as the principles of the company. This spirit of the Toyoda Precepts can still be felt today.

The Toyoda Precepts

1. Be contributive to the development and welfare of the country by working together, regardless of position, in faithfully fulfilling your duties.
2. Be at the vanguard of the times through endless creativity, inquisitiveness and pursuit of improvement.
3. Be practical and avoid frivolity.
4. Be kind and generous; strive to create a warm, homelike atmosphere.
5. Be reverent, and show gratitude for things great and small in thought and deed.

Guiding Principles at Toyota Motor Corporation

(Adopted January 1992, revised April 1997)

1. Honor the language and spirit of the law of every nation and undertake open and fair corporate activities to be a good corporate citizen of the world
2. Respect the culture and customs of every nation and contribute to economic and social development through corporate activities in local communities
3. Dedicate ourselves to providing clean and safe products and to enhancing the quality of life everywhere through our all activities
4. Create and develop advanced technologies and provide outstanding products and services that fulfill the needs of customers worldwide
5. Foster a corporate culture that enhances individual creativity and teamwork value, while honoring mutual trust and respect between labor and management
6. Pursue growth in harmony with the global community through innovative management
7. Work with business partners in research and creation to achieve stable, long-term growth and mutual benefits, while keeping ourselves open to new partnerships

Global Vision 2010

Innovation into the Future

A Passion to Create a Better Society

To contribute to society through the manufacturing of automobiles.
We must now move forward with renewed passion and even higher aspirations,
to create a more prosperous society in this new century.

A New Corporate Image for Toyota to Pursue

Kind to the Earth

Become a leader and driving force in global regeneration by implementing the most advanced environmental technologies

Comfort of Life

Become a leader in creating automobiles and an automobile-based society in which people can live in ease, safety and comfort

What Society is Expected to be Like from 2020 to Around 2030

Arrival of a Revitalized, Recycling-based Society

- Global movement toward a "Revitalized Society."
- Shifting from an age of mass production and mass consumption to a "Recycling-based Society." Reduction, Reuse and Recycling of Resources

Age of ITS and the Ubiquitous Network Society

- Advanced communication technology and automobile IT technologies
→ Dramatic improvement in information services accessible while driving
→ Improved driving safety, coordinated with the traffic structure

Expansion of Motorization on a Global Scale

- People all over the world will benefit from the car's mobility

Advent of a Mature Society

- Society will move toward greater respect for people from other nations and cultures
- In international companies, people from different nations and ethnic groups will work together

Excitement for the World

Promote the appeal of cars throughout the world and strengthen the Toyota brand image

Respect for all People

Be a truly global company that earns the respect and support of people all over the world

The Paradigm Change to Attain Our Vision

1. Technology Development / Product Development

- (1) Technology Development
- (2) Product Development

Paradigm Change

We must adopt a new corporate structure paradigm and improved business practices

2. Management

- (1) Transnational management
- (2) Group strategic management
- (3) Changing the way we work

3. Profit Structures

- (1) Create a balanced global structure
- (2) Focus on stakeholders and efficient use of capital

Environmental Aspects



Development and Design

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Increased the Number of Vehicles Series that Meet or Surpass the Ultra Low-Emission Vehicle Level to 76.5%

Percentage of Total Production that Met the Approval System for Low-Emission Vehicles in FY2003

2000 Exhaust Emissions Standards

Category	Reduction level	Percentage of total production (No. of models)
Transitional Low-Emission Vehicles	25% lower than standard levels for 2000	21.7% (85)
Low-Emission Vehicles	50% lower than standard levels for 2000	1.0% (6)
Ultra Low-Emission Vehicles	75% lower than standard levels for 2000	59.8% (90)

Percentage of Total Production that Met the New Approval System for Low-Emission Vehicles in FY2003

2005 Exhaust Emissions Standards

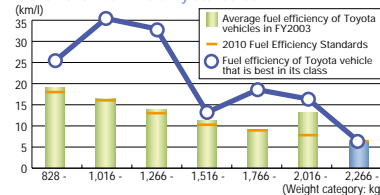
Category	Reduction level	Percentage of total production (No. of models)
New U-LEV (Ultra-Low Emission Vehicle)	50% lower than standard levels for 2005	15.7% (84)
SU-LEV (Super Ultra-Low Emission Vehicle)	75% lower than standard levels for 2005	1.0% (1)

Toyota quickly took action to comply with the 2005 Exhaust Emissions Standards, and together with the models that meet the 2000 Exhaust Emissions Standards, the percentage of vehicles that meet or surpass the Ultra Low-Emission Vehicle level reached 76.5% of total production in FY2003, for an increase of 29 percentage points compared to the previous year.

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Achieved the 2010 Fuel Efficiency Standards in Six out of Seven Categories

Actual Fuel Efficiency of Toyota Vehicles in FY2003 and 2010 Fuel Efficiency Standards



Vehicles in the 2,016 - 2,265kg category (which did not achieve the standards the previous year) also achieved the 2010 Fuel Efficiency Standards in FY2003, for a total of six out of seven vehicle weight categories. The number of gasoline-powered passenger vehicles meeting the 2010 Fuel Efficiency Standards increased by 8 percentage points from the previous year to reach 83% of total production.

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Newly Developed Catalytic Converter Systems DPR and DPNR Installed in Diesel Vehicles

All vehicles equipped with the DPR and DPNR catalytic converter systems achieve the 2003 Exhaust Emissions Standards, and a PM emission level that is 85% lower than the 2000 Exhaust Emissions Standards.

p. 19

FCHV-BUS2 Begins Operation on Tokyo Metropolitan Bus Routes



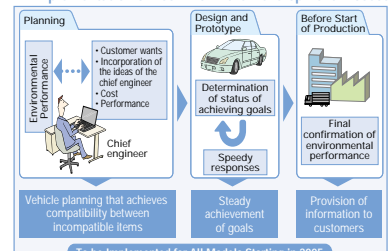
FCHV-BUS2 that began operation on Tokyo metropolitan bus routes

The FCHV-BUS2 began operation on two routes: between the JR Tokyo Station, Tokyo Big Sight, and Tokyo Teleport Station, and between Monzen-nakacho and Tokyo Teleport Station.

p. 22

Introduced Eco-VAS, a System that Effectively Reduces Environmental Impact

Implementation of Eco-VAS in the Development Process



To be Implemented for All Models Starting in 2005

Toyota initiated trial operation of the comprehensive environmental impact assessment system Eco-VAS. The person responsible for development sets targets to effectively improve environmental performance.

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Recycling and Sales/After Sales

Toyota Recycle Vision Established and Announced

Toyota Recycle Vision — Topics and Goals

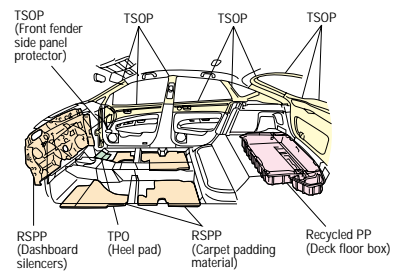
Topic	Goal
Steady improvement of vehicle recovery rate in Japan and Europe	Japan : Early achievement of regulation target Europe: Steady achievement of regulation target
Increased use of renewable resources and recycled materials	Development of technology allowing 20% use of resin parts by 2015 (combining Toyota Eco-Plastic and recycled materials)
Increased utilization of used parts	10-fold increase in sales of used parts by 2010 (compared to 2002)
Reduction in substances of concern	Establish Toyota global standards in 2003 Introduction from 2006 in Japan and Europe of vehicles with zero amounts of the 4 banned substances (some parts exempted)

The Toyota Recycle Vision specifies goals that must be achieved to realize the image that Toyota wishes to achieve in 2015 as an automaker. Toyota is engaged in recycling initiatives from a medium-to-long term perspective.

p. 36

Environmental Measures Incorporated into the New Prius at the Development and Design Stages

Environmentally Considerate Materials Used in the New Prius



TSOP : Toyota Super Olefin Polymer
TPO : Thermo Plastic Olefin
RSPP : Recycled Sound-Proofing Products
PP : Polypropylene

The new Prius incorporates numerous environmental measures such as design for recycling, reduction of substances of concern and use of recycled materials.

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Procurement/Production/Logistics

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Procurement

Requested Suppliers to Implement Responses to the EU ELV Directive and JAMA Regulations

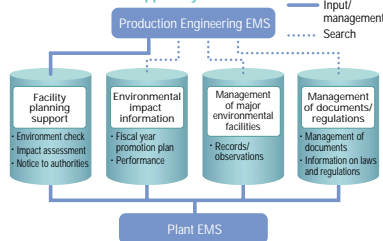
In addition to the EU ELV Directive, to which Toyota has requested responses from its suppliers since FY2000, the JAMA regulations that cover new vehicles sold in Japan were announced in FY2003 and in response, Toyota has requested its suppliers to reinforce environmental management and strengthen their efforts to reduce substances of concern.

p. 26

Production

Company-wide Expansion of Environmental Support System

Environmental Support System



Toyota worked on company-wide expansion of an environmental support system that uses information technology to enable efficient operation of the environmental management system and to make possible sharing of environmental information.

p. 27

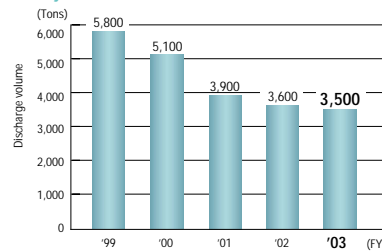
CO₂ Emissions Reduced to 1.57 Million Tons

Toyota reduced CO₂ emissions by 40,000 tons from the previous year through measures including the introduction of innovative energy conserving technology into various facilities, consolidation of production lines, and a shortening of processes in newly established lines.

p. 29

Discharge Volume of Substances Subject to PRTR Reduced to 3,500 Tons

Trend in Discharge Volumes of Substances Subject to PRTR

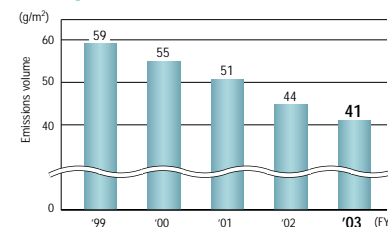


Toyota has been taking various steps to reduce discharge volumes of substances subject to PRTR, including introducing water-borne paints, switching to paints containing less toluene, xylene, ethylbenzene and 1,3,5-trimethylbenzene, and reducing purge solvents usage and increasing its recovery rate.

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VOC Emissions Reduced to an Average of 41g/m² on All Lines

Trend in VOC Emissions Volume (Average of all lines)

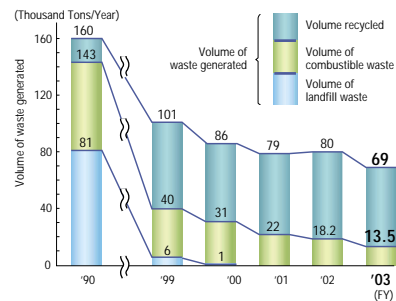


Toyota implemented various measures to reduce VOC emissions including switching to water-borne paints for the top coating (base coat) on Painting Lines 1 and 2 of the Tsutsumi Plant, and improving the recovery rate of purge solvents.

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Total Volume of Waste Generated Reduced by 11,000 Tons

Volume of Waste Generated



Toyota focused on reducing the total volume of waste generated, including the volume that must be recycled. Toyota was able to reduce the volume of grinding scrap generated from the machining processes by removing oil and moisture from the scrap and solidifying it, consolidating casting lines, and thoroughly sorting scrap paper.

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Water Consumption Reduced to 4.1m³ per Vehicle

Toyota promoted activities to reduce water consumption focusing on measures such as eliminating the washing process, preventing leaks and reusing water, thus achieving its goal.

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Logistics

Strengthened Management to Assess CO₂ Emissions Volumes at Toyota's Overseas Affiliates

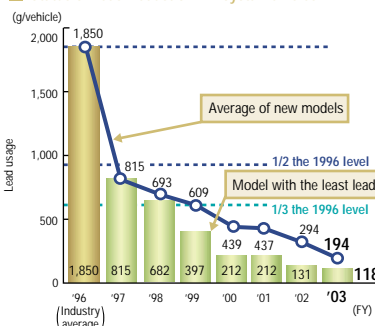
Toyota strengthened its management organization in order to provide support to overseas affiliates' target management activities. Activities were steadily carried out in line with the improvement plan.

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Reduced Lead Usage to 1/10 of 1996 Level in Five Vehicle Series

Status of Lead Reduction in Toyota Vehicles



Toyota reduced lead usage to 1/10 or less of the 1996 level in five out of six vehicle series of models that were new or underwent complete redesign.

p. 37

Various Dismantling Tools Developed at The Automobile Recycle Technical Center



Wire harness removal tool

Toyota developed various tools that increase the efficiency of the dismantling process. The wire harness removal tool has reduced the number of steps in removal operations by approximately 60% and the work time by approximately 40%.

p. 39

Responses to the Automobile Recycling Law Strengthened



Automobile Recycling Law compliance promotion pamphlet distributed by Toyota to all its dealers

To ensure compliance with the Automobile Recycling Law, which will go into effect in January 2005, Toyota has established a nation-wide system for ASR recycling/recovery and is promoting its implementation. Toyota Dealers have also formulated an action policy in response to the Automobile Recycling Law.

p. 40



Housing Business

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F☆☆☆☆ Standard Applied to all Construction Material Used in the New "SINCÉ Cada" Series

Regarding responses to the "sick house syndrome," caused by high indoor concentration of formaldehyde, Toyota applies the F☆☆☆☆ standard, with the lowest permissible formaldehyde emission levels, to structural materials and finishing materials.

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The new "SINCÉ Cada" series launched in April 2004



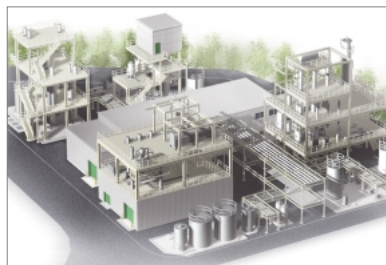
Biotechnology and Afforestation Businesses

44

Bio-plastic Pilot Plant with a Production Capacity of 1,000 tons a Year Established

Toyota is currently constructing a bio-plastic pilot plant within the Hirose Plant to investigate the feasibility of its bio-plastic mass-production technology. In addition to its usage as raw material for automobile parts, Toyota also plans to adapt bio-plastics to the wide range of plastic products that pervades people's daily lives.

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Artista's rendering of the completed bio-plastic pilot plant



Special Story

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New Prius with a Completely Redesigned Powertrain Launched

The new Prius displays improved environmental performance by realizing a fuel efficiency of 35.5km/liter (an increase of 15% from the previous model). It has also received the new four-star rating in Japan because of its low-emissions performance. Toyota has made upward revisions to its worldwide sales projections for the Prius in 2004.

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The New Prius



Environmental Management

10 → 17

The Toyota Environmental Action Plan Interim Review

Toyota conducted an interim review of the progress in all areas. In nearly all areas, Toyota has been making progress toward achieving its FY2005 goals on or ahead of schedule. In the area of production, all FY2005 goals with regard to reduction of CO₂ emissions and waste, and consumption of water resources were achieved by FY2003. Toyota has set higher "challenge" goals and is working to achieve them.

p. 14 - 15

Environmental Costs Increase to 201.6 Billion Yen

Actual Results of Environmental Expenses

Actual Results Based on Toyota's Format (Unit: Billion Yen)

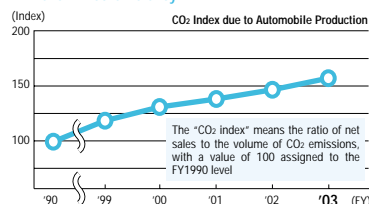
Classification	Item	Details	FY2003
Maintenance costs	Waste processing expenses		2.7
	Wastewater treatment expenses		0.5
	Atmospheric pollution and odor abatement expenses		1.4
	Global environmental preservation expenses		0.5
	Awareness-building expenses	Advertising, public relations, etc.	6.0
	Professional environmental staff expenses	Personnel expenses	1.9
	Environmental restoration expenses	Recall	—
		Soil and groundwater remediation	0.2
		Subtotal for maintenance costs	13.2
Environmental investments	Research and development expenses		166.1
	Recycling-related expenses		1.2
	Other expenses (social contribution, ISO certification expenses, educational & training expenses, etc.)		2.2
	Plant and equipment investment primarily for environmental action	Prevention of global warming	0.8
		Waste processing	0.4
		Pollution prevention, etc.	4.6
		Expenses for environmental action, included in normal plant and equipment investment	5.8
		Subtotal for environmental investments	188.4
		Total	201.6

*Depreciation expenses of investments in plant and equipment are not included in these costs

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Eco-efficiency CO₂ Index Increased by about 50% from FY1990 Level

Trend in Eco-efficiency

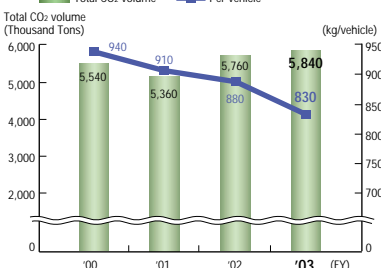


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Consolidated Environmental Management

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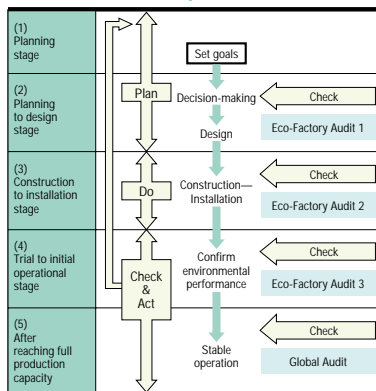
Reducing CO₂ Emissions Per Vehicle on a Global ScaleCO₂ Emissions VolumeTotal CO₂ volume (Thousand Tons) Per vehicle (kg/vehicle)

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Start of Eco-Factory Activities

To firmly integrate environmental response in the construction of new plants and for major renovations and extensions of existing plants, TMC began implementing Eco-Factory Activities.

Flow Chart of Eco-Factory Activities



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Reduction of VOCs at Overseas Production Affiliates

TMC promoted activities, aiming to become "No. 1 in the World" for VOC reduction, and has designated three affiliates, TMMF (France), TMCA (Australia), and TSAM (South Africa), as model affiliates.

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Expansion of ISO 14001 Certification at Overseas Service Shops

In Taiwan, all 8 dealers acquired ISO 14001 certification for the head office and one model service shop. At TMT (Thailand), 65 service shops of 52 dealers plan to acquire certification by the end of FY2004.



All Taiwan dealers have acquired ISO 14001 certification



The kickoff ceremony for the Thailand ISO 14001 certification

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Status of Major Environmental Data for FY2003

In FY2003, through the promotion of environmental preservation activities based on the Third Toyota Environmental Action Plan for the period FY2001 to FY2005, improvements were made in each area as can be seen in the major environmental data listed below.

In terms of products, Toyota achieved ahead of schedule the 2005 Exhaust Emissions Standards. The percentage of vehicles that meet or surpass the Ultra Low-Emission Vehicle level, including those that meet the 2000 Exhaust Emissions

Standards, reached 76.5% of total production. Toyota achieved the 2010 Fuel Efficiency Standards for average fuel efficiency by vehicle weight in six of seven categories. As a result, the number of gasoline-powered passenger vehicles meeting the 2010 Fuel Efficiency Standards reached 83% of total production.

In the production area FY2005 goals for reduction of CO₂ emissions and waste, and conservation of water resources, were achieved by FY2003. New goals were set for the fiscal year and as a result of activities

undertaken, all goals were achieved. In addition, the goals for emissions of VOCs and discharge of substances subject to PRTR, which are substances of concern, were achieved by introducing water borne paints reducing the amount of purge solvents used, and improving their recovery rate.

In order to increase the vehicle recovery rate, an ASR Recycling and Recovery Pilot plant went into full operation and performance, environmental impact, and costs were verified.

Major Environmental Data

(In order to look at the medium and long-term trends, the figures for FY1990 and FY1995 are listed in addition to those for the past three years)

Area	Item	Key indicator (unit)	FY1990	FY1995	FY2001	FY2002	FY2003	FY2005 goals set in the 3rd Action Plan	Related pages in this report
Product	1. Exhaust gases	Vehicles that achieved levels 25% lower than 2000 gasoline standards [Percentage of total production (No. of models)]	—	—	78.5% (111)	49.4% (115)	21.7% (85)	Achieve further low-emissions levels (increased introduction of vehicles with emission levels 75% lower than the standard)	18
		Vehicles that achieved levels 50% lower than 2000 gasoline standards [Percentage of total production (No. of models)]	—	—	0.2% (1)	1.4% (6)	1.0% (6)		
		Vehicles that achieved levels 75% lower than 2000 gasoline standards [Percentage of total production (No. of models)]	—	—	8.2% (12)	47.4% (60)	59.8% (90)		
		Vehicles that achieved levels 50% lower than 2005 gasoline standards [Percentage of total production (No. of models)]	—	—	—	—	15.7% (84)		
		Vehicles that achieved levels 75% lower than 2005 gasoline standards [Percentage of total production (No. of models)]	—	—	—	—	1.0% (1)		
	2. Clean-energy vehicles	Number of units sold (units)	—	—	23,616	15,575	42,250	Improve performance of hybrid systems and increase number of vehicles equipped with hybrid systems aimed at popularization	22
		Electric vehicles (units)	—	—	56	23	7		
		Hybrid vehicles (units)	—	—	23,373	15,390	42,021		
		CNG vehicles (units)	—	—	187	162	222		
	3. Fuel efficiency (CO ₂) ¹	Average fuel efficiency by weight category [km/l] (Gasoline-powered passenger vehicle) ¹	703 - 827kg	17.6	17.6	22.4	22.4	Achieve the new fuel efficiency standards in Japan ahead of schedule	20
			828 - 1,015kg	12.3 (average)	12.3 (average)	18.3	18.5		
			1,016 - 1,265kg			15.7	16.1		
			1,266 - 1,515kg	8.5 (average)	8.0 (average)	12.4	13.1		
			1,516 - 1,765kg			10.6	11.0		
			1,766 - 2,015kg			9.1	9.1		
			2,016 - 2,265kg			7.5	7.8		
			2,266kg -			6.1	6.3		
Production	1. CO ₂	Total emissions volume (calculated in CO ₂ equivalent in 10 thousand tons/year)	195 ²	190	163	161	157	Reduce total emissions to 1.55 million tons by the end of FY2005 ³	29
		Discharge volume per sales unit (calculated in CO ₂ equivalent in tons/100 million yen/year)	27.5 ²	29.2	20.6	19.4	18.4		
	2. Substances of concern	VOC ⁴ emissions volume per body area (g/m ²)	—	—	51	44	41	Reduce average emissions volume to 35g/m ² or less in all lines by the end of FY2005	30
		Discharge volume of PRTR substances (thousand tons/year)	—	—	3.9	3.6	3.5	Reduce to 2,000 tons or less by the end of FY2005 ⁵	
	3. Waste ⁵	Volume of combustible waste generated (thousand tons/year)	62	41	22	18.2	13.5	Reduce to 11,500 tons or less by the end of FY2005 ⁶	31
Recycling	1. Recovery rate	Proved at Toyota Metal (%)	81	83	—	—	95 or above	Verify and propose recycling technologies for 95% recovery rate	38

1. The fuel efficiency figures for FY1990 have been obtained by converting the figures obtained in the 10 Japanese test cycle to the 10-15 Japanese test cycle

2. Total figure for the period from January to December 1990

3. As initial goals were achieved, new "challenge" goals were set

4. VOC (Volatile Organic Compounds): A typical example is paint solvents

5. Zero landfill waste was achieved in FY2000 and is being maintained

6. New "challenge" goals were set as initial goals were almost achieved

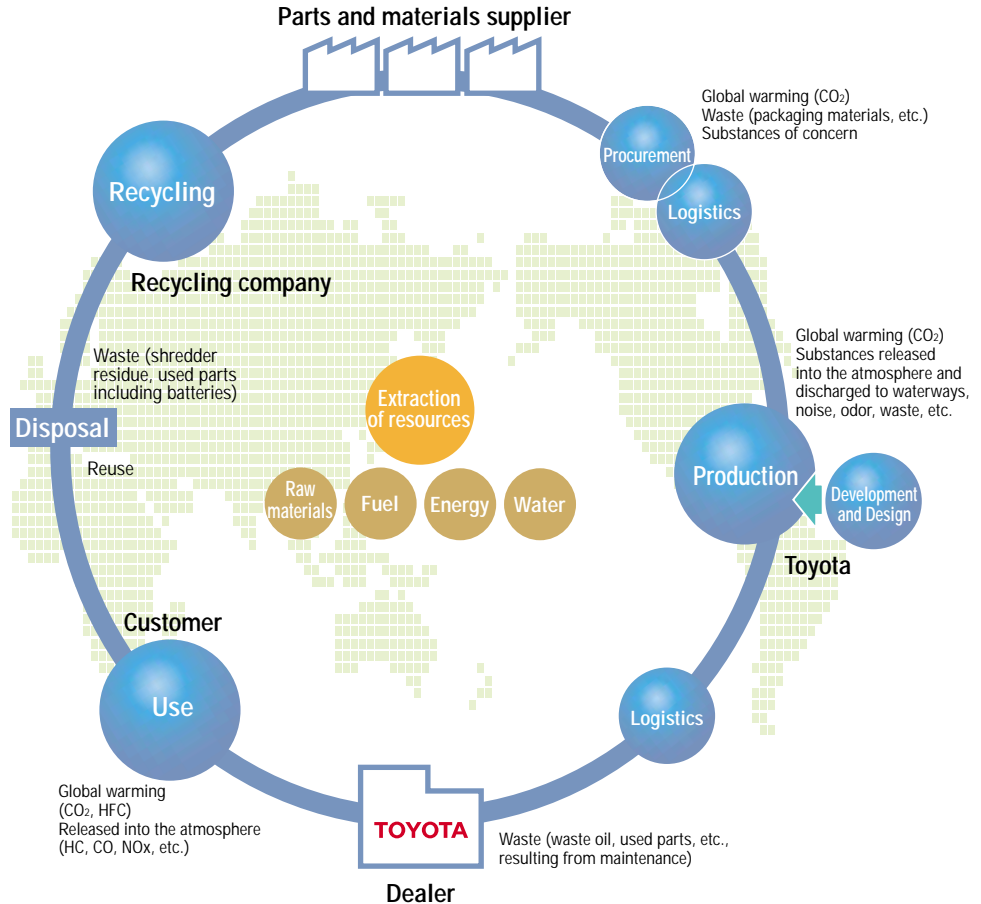


Environmental Management

In the twentieth century, although the automobile played an important role in the development of society, it has also imposed a certain impact on the environment. If the automobile is to remain a beneficial tool in the twenty-first century, environmental responses are essential. Without environmental responses, the automobile industry has no future, and Toyota is convinced that only automakers that succeed in this area will be acceptable to society.

To ensure that its products are accepted and well received around the world, Toyota has positioned the environment as a priority management issue and seeks to become a leader of global regeneration through its outstanding environmental technologies. In order to achieve this, Toyota is implementing environmental responses at the highest levels in all regions around the world and in all areas. Toyota also believes that it is important to conduct continual and constant follow-ups.

Toyota conducts meticulous environmental management in all areas and in each stage of the vehicle life cycle, including production, logistics, use, disposal, and recycling. Toyota also implements integrated environmental responses from the production to disposal stage.



Toyota Earth Charter

I. Basic Policy

1. Contribution toward a prosperous 21st century society

Contribute toward a prosperous 21st century society. Aim for growth that is in harmony with the environment, and set as a challenge the achievement of zero emissions throughout all areas of business activities.

2. Pursuit of environmental technologies

Pursue all possible environmental technologies, developing and establishing new technologies to enable the environment and economy to coexist harmoniously.

3. Voluntary actions

Develop a voluntary improvement plan, based on thorough preventive measures and compliance to laws, that addresses environmental issues on the global, national, and regional scales, and promotes continuous implementation.

4. Working in cooperation with society

Build close and cooperative relationships with a wide spectrum of individuals and organizations involved in environmental preservation including governments, local municipalities, related companies and industries.

II. Action Guidelines

1. Always be concerned about the environment

Challenge achieving zero emissions at all stages, i.e., production, utilization, and disposal

(1) Develop and provide products with top-level environmental performance

(2) Pursue production activities that do not generate waste

(3) Implement thorough preventive measures

(4) Promote businesses that contribute toward environmental improvement

2. Business partners are partners in creating a better environment

Cooperate with associated companies

3. As a member of society

Actively participate in social actions

(1) Participate in the creation of a recycle-oriented society

(2) Support government environmental policies

(3) Contribute also to non-profit activities

4. Toward better understanding

Actively disclose information and promote environmental awareness

III. Organization in Charge

Promotion by the Toyota Environment Committee which consists of top management (chaired by the President)

The Third Toyota Environmental Action Plan

FY2001 - FY2005

Action Items

(1) Fuel efficiency
(2) Exhaust emissions
(3) Clean-energy vehicles
(4) Recoverability
(5) Substances of concern in products
(6) Automobile noise
(7) Air conditioning systems

(8) Global warming threat
(9) Substances of concern
(10) Waste and resource conservation
(11) Water resources
(12) Logistics

(13) Prior-assessment systems
(14) Environment-oriented business ventures

(15) Suppliers
(16) Dealers' cooperation

(17) Recycling system
(18) Transportation systems
(19) Related basic research
(20) Socially-contributing activities

(21) Among the public
(22) Among employees

(23) Comprehensive environmental management



Basic Concepts with Regard to the Environment

Principles and Policies

Based on the Guiding Principles at Toyota Motor Corporation (adopted in 1992, revised in 1997), which codify the business spirit that Toyota has maintained since its establishment, the Toyota Earth Charter (adopted in 1992, revised in 2000) embodies the "Comprehensive Approach to Global Environmental Issues." Toyota considers it essential that automobiles of the twenty-first century take the environment into consideration, and has made environmental responses a top management priority.

Environmental Action Plan

The Toyota Environmental Action Plan is a medium- to long-term plan that summarizes specific activities and goals in order to promote company-wide environmental preservation activities in accordance with the Toyota Earth Charter.

The Third Toyota Environmental Action Plan describes specific action plans for the five years from FY2001 to FY2005. Based on this plan, Toyota established an Annual Environmental Action Policy in FY2003 also, to develop actions encompassing each area and plant.

Implementation Structure

Toyota Environment Committee

The three committees indicated in the chart below were established under the Toyota Environment Committee, which is chaired by the President and meets twice a year to address issues and response policies in each area. The Environmental Affairs Division, a specialized environmental organization, functions as a company-wide secretariat. All related departments promote environmental action in cooperation with each other.

At a Toyota Environment Committee meeting held in FY2003, there were discussions regarding company-wide environmental policies and responses to the Automobile Recycling Law scheduled to come into effect from FY2004. The results of an interim review of the Third Toyota Environmental Action Plan were also examined and new issues were discussed.

Eco-VAS Subcommittee

In order to promote Eco-VAS (Eco-Vehicle Assessment System), the comprehensive environmental impact assessment system that will be introduced in 2005, the existing LCA Subcommittee was reorganized and the Eco-VAS subcommittee was established under the Environmental Product Design Assessment Committee.

Please see p. 25 for details on Eco-VAS

Interim Review of the Toyota Environmental Action Plan

FY2003 is the middle year of the Third Toyota Environmental Action Plan covering the period from FY2001 to FY2005. To ensure that the goals of the plan are achieved, Toyota conducted an interim review of the progress in all areas (for further details, see pp. 14 - 15). As a result of this review, areas in which responses need to be accelerated were determined and further efforts are being made in those areas.

Reinforcement of Risk Management

Toyota has been reinforcing its risk management, focusing in particular on management of risks arising from production activities as a top priority. From the perspective of consolidated EMS, the status of risk management at 115 plants in Japan and 34 plants overseas subject to consolidated EMS was determined.

Please see p. 50 - 61 for details on consolidated environmental management

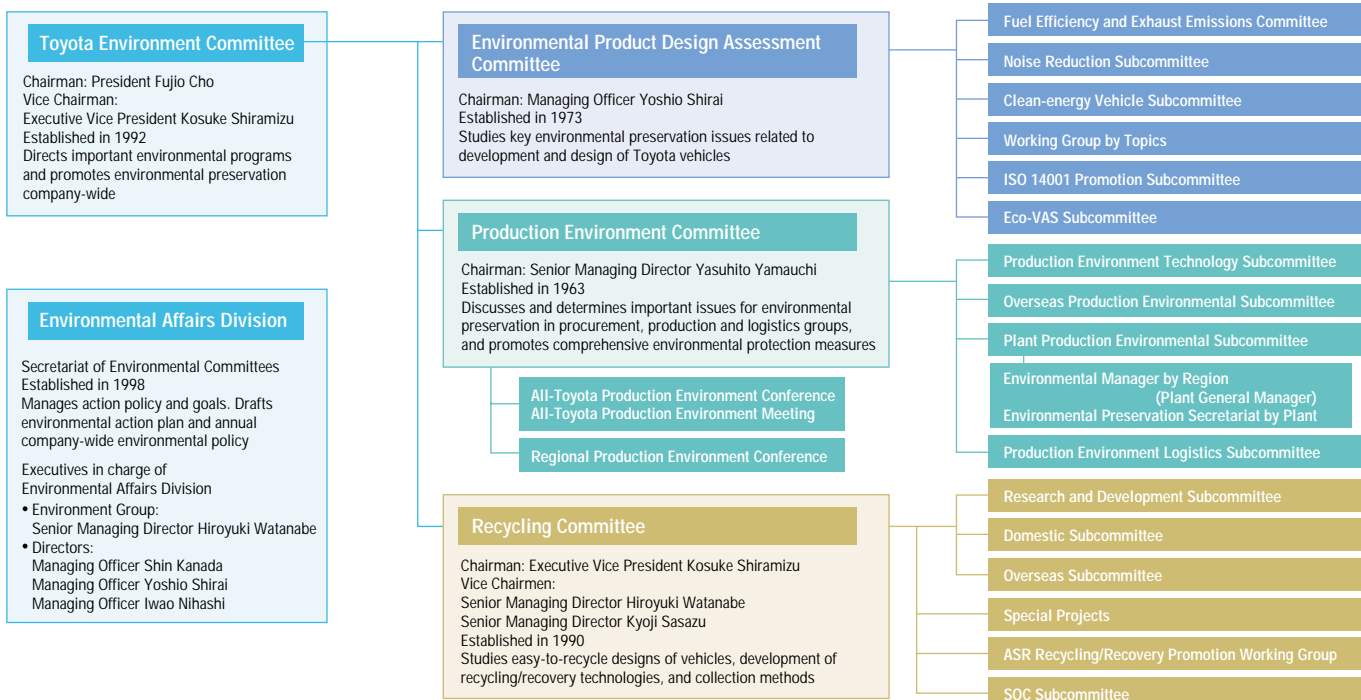
Implementation of Environmental Management System Audits

At Toyota, environmental management systems were constructed in the Research & Development Group, the Production Engineering Group, the Production Group, and the Service Parts Logistics Division. Internal audits as well as third-party reviews are conducted.

Please see p. 18 for details on the Research & Development Group

Please see p. 27 for details on the Production Group

Organization Framework (Positions and areas of responsibility as of March 2004)



FY2003 Goals and Results of Activities

In accordance with the Third Toyota Environmental Action Plan, which looks ahead to FY2005, Toyota set new goals for FY2003 in each area and began actions. As a result, the FY2003 goals were achieved in almost all areas.

In the area of design and development, Toyota announced the introduction of Eco-

VAS, a system that will be used by the person responsible for the development of a particular vehicle to make environmental assessments, and will expand its application to additional vehicle series. Toyota also launched the new Prius, which adopts a more advanced hybrid system. In the area of production, all goals for activities to reduce CO₂ emissions and waste, and consumption of water resources were achieved by FY2003. New annual goals were set for each of these activities and

action has been reinforced. Toyota has also set higher goals for the reduction of substances subject to PRTR and has started activities to achieve them. With respect to logistics, though activities were conducted solidly according to plan, there have been effects from a substantial increase in transportation volume. In the area of recycling, Toyota promoted the development of systems and establishment of bases that comply with automobile recycling laws in Japan and Europe.

FY2003 Status of Company-wide Environmental Policies Management

FY2003 action policy	Activity results	FY2004 action policy	Related pages
1. Steady promotion of the Third Toyota Environmental Action Plan (FY2001 - FY2005) • Steadily achieve FY2003 goals toward FY2005	• Gained the prospect of achieving the Third Toyota Environmental Action Plan • Improved environmental performance and enhanced risk management at 76 production companies subject to the consolidated environmental management system both in Japan and overseas • Refer to results for the respective areas	• Steady promotion of activities to achieve the Third Toyota Environmental Action Plan goals (FY2001 - FY2005) • Creation of the Fourth Toyota Environmental Action Plan (FY2006 - FY2010), which will address new environmental issues and corresponds to the Global Vision 2010	—
2. Active responses anticipating societal demands regarding the environment in both Japan and overseas	• Examined Toyota's responses to CO ₂ emissions trading • Established working groups in all related divisions and studied sustainability and corporate social responsibility	• Active responses anticipating societal demands regarding the environment in both Japan and overseas	—

Development and Design

FY2003 action policy	Activity results	FY2004 action policy	Related pages
1. Early and steady responses to fuel efficiency goals • Achieve 2010 Fuel Efficiency Standard in all vehicle weight categories ahead of schedule by 2005	• Steady introduction of vehicles that meet the fuel efficiency standards for a total of six out of seven weight categories	1. Early and steady responses to fuel efficiency goals • Achieve 2010 Fuel Efficiency Standard in all vehicle weight categories ahead of schedule by 2005	20
2. Active promotion of measures to reduce emissions • Achieve Ultra Low-Emission levels in most vehicle series by 2005 • Develop clean diesel vehicles	• Increased introduction of Ultra Low-Emission Vehicles (addition of 12 new vehicle series) • Introduced the Dyna equipped with DPNR and DPR (in Japan) and the Avenis equipped with DPNR (in Europe)	2. Active promotion of measures to reduce emissions • Achieve Ultra Low-Emission levels in most vehicle series by 2005 • Develop and introduce clean diesel vehicles	18 19 55
3. Promotion of actions toward commercialization of clean-energy vehicles • Enhance development and popularization of hybrid vehicles • Promote the development of fuel cell hybrid vehicles	• Market introduction of the Prius, Alphard Hybrid, and Dyna/Toyace Hybrid • Concluded a patent licensing agreement on hybrid technologies with Ford • Introduced TOYOTA FCHV • Began commercial operation of the FCHV-BUS2	3. Promotion of actions toward commercialization of clean-energy vehicles • Enhance development and popularization of hybrid vehicles • Promote the development of fuel cell hybrid vehicles	19 22
4. Promotion of environmental management and provision of information • Promote environmentally conscious designs based on LCA	• Made a decision to introduce Eco-VAS, in which the person responsible for a particular vehicle sets goals and evaluates results on issues such as recycling and the reduction of SOCs • Began developing a computerized LCA network for Eco-VAS • Implemented LCA at the vehicle development stage in six vehicle series and included LCA results in product catalogs	4. Promotion of environmental management and provision of information • Establishment of the Eco-VAS system, to be introduced into all vehicle series in 2005 • Creation of a computerized LCA network • Promotion of LCA at the vehicle development stage	23 25

Procurement/Production/Logistics

FY2003 action policy	Activity results	FY2004 action policy	Related pages
1. Reduction of CO ₂ emissions • Steady implementation of plans based on the scenario for 2005 • Promotion of activities to reduce energy loss • Innovative measures Goal: Reduce CO ₂ emissions to 1.61 million tons or less/year	• Promoted merging and discontinuance of processes, and took energy conservation measures Reduced CO ₂ emissions to 1.57 million tons/year	• Steady introduction of innovative technologies • Reduction of energy loss Goal: Maintain CO ₂ emissions at 1.57 million tons or less/year	29
2. Reduction of substances of concern • Steady implementation of plans based on the scenario for 2005 • Steady promotion of measures to reduce VOC emissions and discharge volume of substances subject to PRTR Goal: Reduce VOC emissions • Body painting process: Average of 41g/m ² or less on all lines • Plastic paint coating: 730g/m ² or less Goal: Reduce discharge volume of substances subject to PRTR to 3,400 tons or less/year	• Introduced water-borne paints and reduced usage of purge solvents VOC emissions Body painting process: Average of 41g/m ² for all lines Plastic paint coating: 708g/m ² Discharge volumes of substances subject to PRTR: 3,500 tons	• Steady promotion plans to review reduction goals for substances subject to PRTR (toluene and xylene) • Systematic implementation of VOC reduction measures in bumper-painting processes Goal: VOC emissions • Body painting process: 37g/m ² or less • Plastic paint coating: 715g/m ² or less Goal: Discharge volumes of substances subject to PRTR: 2,500 tons or less/year	30
3. Reduction of waste and conservation of resources Combustible waste • Initiatives to reduce waste with consideration to environmental impact and economic performance Goal: Reduce generation of combustible waste to 17,000 tons or less Resource conservation • Steady implementation of resource conservation activities based on the scenario for 2005 Goal: Reduce usage of primary raw materials by 14,000 tons or more Goal: Limit usage of foundry sand to 29,400 tons or less Goal: Limit usage of oils and fats to 12,700kl or less	• Reduction measures at the source, complete sorting of wastepaper Reduction of combustible waste to 13,500 tons • Reduction of primary material usage: 16,000 tons • Usage of foundry sand: 28,900 tons • Usage of oils and fats: 12,000kl	Combustible waste • Promotion of activities that will reduce waste processing costs Goal: Reduce combustible waste to 12,000 tons or less/year Resource conservation • Steady implementation of resource conservation activities based on the scenario for 2005 • Motorization of equipment that uses oils and development of a plan to implement dry machining Goal: Reduce resource loss by 11,000 tons or more Goal: Limit usage of foundry sand to 21,500 tons or less Goal: Limit usage of oils and fats to 11,100kl or less	30 31





Procurement/Production/Logistics

FY2003 action policy	Activity results	FY2004 action policy	Related pages
4. Conservation of water resources <ul style="list-style-type: none"> Promotion of activities toward achieving a higher goal Meticulous control of water consumption Goal: Reduce water consumption to 4.9m³ or less per vehicle 	<ul style="list-style-type: none"> Eliminated the washing process by improving the painting quality Meticulously controlled and reduced water consumption Water consumption: 4.1m³ per vehicle 	<ul style="list-style-type: none"> Meticulous control of water consumption Goal: Maintain water consumption at 4.1m³ or less per vehicle 	31
5. Further promotion of proactive prevention measures <ul style="list-style-type: none"> Steady implementation of a medium-term plan for measures to prevent soil contamination by oils and fats Goal: Achieve implementation rate of 100% Further enhance measures to prevent legal non-compliance and complaints Goal: Zero legal non-compliance and complaints Promotion of establishment and operation of EMS in the Production Engineering Group both in Japan and overseas Goal: Promotion by the entire Group 	<ul style="list-style-type: none"> Completed the steps according to plan One case of legal non-compliance occurred Completed implementation 	<ul style="list-style-type: none"> Complete implementation of a medium-term plan for measures to prevent soil contamination by oils and fats Goal: Achieve according to plan Further implementation of measures to prevent legal non-compliance and complaints Goal: Zero legal non-compliance and complaints 	28 29
6. Environmental initiatives at overseas production affiliates <ul style="list-style-type: none"> Global expansion of measures to enhance risk reduction (compliance) performance in line with each region's priority action Goal: Achievement of FY2003 goals Support for affiliates in China that are set to start new initiatives Goal: 100% implementation rate Implementation of environmental audits by TMC Goal: Complete audits at leading affiliates 	<ul style="list-style-type: none"> Thorough risk reduction Achieved individual goals Implementation rate of 100% Audited EMS improvement status One complaint was received 	<ul style="list-style-type: none"> Further enhancement of EMS at overseas production affiliates Development of a specific plan to expand innovative technologies to overseas projects and steady implementation Goal: 100% implementation rate Further improvements in various performance levels Goal: Achievement of FY2004 goals 	50 61
7. Reduction of environmental impact in logistics <ul style="list-style-type: none"> Further promotion of measures to reduce CO₂ emissions Goal: Limit total emissions volume to 259,000 tons or less/year Reduce emissions volume per vehicle by 3% from FY2002 Promote reduction in usage of packaging and wrapping materials Goal: Limit usage of packaging and wrapping materials to 47,000 tons or less/year Reduce unit consumption by 3% from FY2002 	<ul style="list-style-type: none"> Switched to transportation modes that emit less CO₂ and reduced transportation distance Reduction of CO₂ emissions volume to 278,000 tons/year Reduced emissions volume per vehicle by 3.1% from FY2002 Promoted the use of returnable containers and simplified packaging and wrapping Reduced the usage of packaging and wrapping materials to 49,000 tons/year Reduced unit consumption by 3% from FY2002 	<ul style="list-style-type: none"> Steady promotion of structural reform measures Develop further structural reform measures, including the use of the Japan Railway system, because transportation volume that far exceeds the reduction activities is expected Assessment of CO₂ emissions per vehicle for each transportation means Goal: Limit total emissions volume to 268,000 tons or less/year Reduce emissions volume per vehicle by 3% from FY2003 Promote reduction in usage of packaging and wrapping materials Goal: Limit total usage of packaging and wrapping materials to 47,000 tons or less/year Reduce unit consumption by 3% from FY2003 	34 35

Recycling and Sales/After Sales

FY2003 action policy	Activity results	FY2004 action policy	Related pages
1. Responses to the Automobile Recycling Law in Japan <ul style="list-style-type: none"> Create an organization to handle responses to recycling laws Promote systems to collect and recover ASR Promote establishment of systems to collect and recycle airbags Develop and commercialize efficient dismantling technologies; provide dismantling information Promote establishment of systems for collection and destruction of CFCs/HFCs Establish vehicle information systems Create the Toyota Dealers Association Policy regarding the Automobile Recycling Law 	<ul style="list-style-type: none"> Had the Automobile Recycling Promotion Center approved as a designated corporation Supported the establishment of the Japan Auto Recycling Partnership (JARP) to handle recycling for all automakers Established an organization that manages ASR collection by team Completed the verification of ASR thermal recycling and recovery technologies Completed a plan to build systems to collect and recycle airbags Developed efficient dismantling methods for airbags, etc. Studied a method for smoothly transitioning from the existing Fluorocarbons Recovery and Destruction Law Currently building systems to network the Japan Automobile Manufacturers Association (JAMA), Japan Auto Recycling Partnership, ASR teams, and Toyota and its dealers Disseminated the Toyota Dealers Association Policy to dealers 	<ul style="list-style-type: none"> Build and start up systems to recycle ASR, airbags, and CFCs/HFCs — the three items designated by the Automobile Recycling Law Build an information-processing system and establish an operational structure Ensure compliance by dealers based on the Toyota Dealers Association Policy 	36 41
2. Responses to the EU ELV directive <ul style="list-style-type: none"> Establish ELV collection centers in countries where the law has been enacted Assess costs and processing methods toward 2007 Ensure compliance with the requirements for disclosing recycling information and reporting actual results 	<ul style="list-style-type: none"> Established ELV collection centers in 15 countries where the law has been enacted Dismantling trials for collecting data are underway Issued a European version of the recycling pamphlet and published it through distributors' websites 	<ul style="list-style-type: none"> Establish an ELV recycling system that complies with each country's regulations Assess recycling costs and work on reducing them Ensure compliance with each country's requirements for reporting actual recycling results 	56
3. Actively promote recycling technologies and reduction of substances of concern <ul style="list-style-type: none"> Develop and promote recycling technologies and design for recycling (DfR) Promote global expansion of activities to reduce substances of concern Decide responses to the EU ELV directive scheduled to go into force in January 2005 and to the Automobile Recycling Law in Japan concerning substances of concern, and establish the necessary promotion structures 	<ul style="list-style-type: none"> Launched the new Raum, which incorporates newly developed DfR Global expansion plan approved by the Environmental Committee Developed a plan to completely eliminate hexavalent chromium and began implementation 	<ul style="list-style-type: none"> Promote the development of DfR and incorporate them into vehicle designs Establish organizations and systems to inspect and audit substances of concern Comply with the EU ELV directive scheduled to go into force in January 2005, without delay Begin using alternatives to hexavalent chromium 	

Environment-related Accidents and Lawsuits

Two production-related environmental accidents concerning spillage of oil occurred as indicated in the table. Spilled oil was immediately cleaned and original conditions were restored. These accidents were the result of failures to check for oil leaks as required by the equipment transportation rules. In response, training on transport methods including removal of oil from equipment was conducted again and measures

to ensure thorough compliance with procedures by drivers were taken. Rules on confirmation and approval at the time of leaving the site were also adopted.

With regard to products, there were no product recalls resulting primarily from environmental issues.

In litigation concerning the health effects of automobile exhaust emissions in Tokyo, the trial court handed down a verdict in favor of auto manufacturers in October 2002. (The plaintiffs have appealed and the matter is pending.) A

lawsuit was also filed in Tokyo in March 2004 to prevent the construction of an apartment building because of damage to underground springs and scenery. The case is currently pending. An application for a temporary injunction was denied at the end of March 2004, but the applicants immediately appealed, and the issue is still pending.

Environment-related Accidents

May 2003	Spillage of oil on public roads during transport of equipment
April 2004	

Third Toyota Environmental Action Plan Interim Review Results

Since FY2003 was the middle year in the Third Toyota Environmental Action Plan, a medium-term plan for the FY2001 to FY2005 period, Toyota reviewed the progress of its actions in all areas based on

FY2002 data and some FY2003 data. The table below shows the main details.


In nearly all areas, Toyota has been making progress toward achieving its FY2005 goals on or ahead of schedule. In terms of the management and reduction of substances of concern, and research and proposals on transport systems, Toyota plans to accelerate future responses

toward achieving the FY2005 goals.

Other issues identified as requiring consideration by Toyota and which were the subject of discussion include further responses to prevent global warming, the building of a global system for managing substances of concern, and corporate social responsibility.

Third Toyota Environmental Action Plan (FY2001 - FY2005) Interim Review Results

Item in Third Toyota Environmental Action Plan	Action policy	Specific goal	Results
(1) Fuel efficiency	<ul style="list-style-type: none"> Achievement of the top level within the class in all countries and all regions 	<ul style="list-style-type: none"> Early achievement of the levels specified in the new Japanese Fuel Efficiency Standards (FY2010 for gasoline vehicles, and FY2005 for diesel vehicles) Steady progress toward achieving the voluntary European fuel efficiency goals (JAMA average 140g/km in 2009) 	<ul style="list-style-type: none"> Gasoline passenger vehicles Set goals to achieve 2010 Fuel Efficiency Standards in all vehicle weight categories, ahead of schedule by 2005 (achieved in 6 out of 7 categories in FY2003) Proceeding with the development of CO₂-reduction technologies toward achieving the JAMA goals
(2) Exhaust emissions	<ul style="list-style-type: none"> Taking appropriate measures based on assessment of the urban environmental conditions in each country and each region 	<ul style="list-style-type: none"> Further emissions reductions in gasoline vehicles Development and introduction of clean diesel vehicles 	<ul style="list-style-type: none"> Set a voluntary goal of achieving Ultra Low-Emission levels in most vehicle series by 2005 Introduction rate of vehicles meeting or surpassing the Ultra Low-Emission level: 76.5% (FY2003) Introduced a small number of Dynas equipped with DPNR (Japan in 2003). Limited introduction of the Avensis equipped with DPNR (Europe in 2003)
(3) Clean-energy vehicles	<ul style="list-style-type: none"> Multi-faceted development and effective introduction based on the assessment of market characteristics of each country 	<ul style="list-style-type: none"> Further enhancements to hybrid systems to ensure wider market acceptance, and an increase in the number of vehicle series equipped with hybrid systems Development of fuel cell vehicles and early introduction 	<ul style="list-style-type: none"> Developed the new-generation hybrid system THS II Increased the number of vehicle series equipped with hybrid systems to six The cumulative number of hybrid vehicles Toyota sold exceeded 210,000 units (as of March 2004) Supplied hybrid systems to Nissan and concluded a patent-licensing agreement with Ford Began limited marketing of Toyota FCHVs. 16 vehicles have been leased in Japan and the U.S.A. FCHV-BUS2 acquired a license plate from the Ministry of Land, Infrastructure and Transport and began operations on regular Tokyo metropolitan bus routes (August 2003)
(4) Recoverability	<ul style="list-style-type: none"> Design for recycling (DfR) to achieve an effective vehicle recovery rate of 95% in 2015 	<ul style="list-style-type: none"> Incorporation of DfR into vehicles Promotion of expanded use of recycled materials 	<ul style="list-style-type: none"> Established the Automobile Recycle Technical Center (April 2001) Incorporated 21 DfR features into the new Raum (May 2003) (Use of a new easy-to-dismantle vehicle structure, Toyota Eco-Plastic, etc.) Developed and announced the Toyota Recycle Vision in June 2003
(5) (9) Substances of concern (In products) (In production processes)	<ul style="list-style-type: none"> Global management and reduction in usage Compliance with the EU ELV Directive and meeting the Japanese automobile industry's new voluntary goals Achievement of the lowest VOC emissions level in the world Reduction of substances subject to PRTR 	<ul style="list-style-type: none"> Development of a global expansion plan Promotion of complete elimination of four substances (lead, mercury, cadmium, and hexavalent chromium) Average of 35g/m² or less on all lines Reduction by 50% from the 1998 level (6,200 tons → 3,100 tons) 	<ul style="list-style-type: none"> Finished developing a basic policy for global implementation Reduced lead usage to 1/10 in five vehicle series (FY2003) Currently proceeding with complete elimination of hexavalent chromium from 80,000 items Steadily reduced VOC emissions by reducing the volume of purge solvents and systematically switching the top coating paint to water-borne paints (FY2003 results: 41g/m²) Reduced usage of substances subject to PRTR by switching to less hazardous substances (FY2003 results: 3,500 tons)
(6) Automobile noise	<ul style="list-style-type: none"> Further reduction of all automobile-related noise 	<ul style="list-style-type: none"> Development of noise-reduction technologies that do not conflict with fuel efficiency improvement and exhaust emissions reduction 	<ul style="list-style-type: none"> Set and achieved the goal of 100% compliance with the new standards by 2001 for passenger cars and by 2002 for commercial vehicles
(7) Air conditioning systems	<ul style="list-style-type: none"> Development of an air conditioner that uses a new refrigerant instead of HFC134a in order to prevent global warming 	<ul style="list-style-type: none"> Development of CO₂ refrigerant air conditioners, etc. 	<ul style="list-style-type: none"> Confirmed the fast-acting characteristics of a CO₂ refrigerant air conditioner and its auxiliary heating capability as a heat pump
(8) Global warming threat	<ul style="list-style-type: none"> Active promotion of innovative energy-conserving production technologies, etc. 	<ul style="list-style-type: none"> Reduction by 5% from the TMC 1990 level (1.95 million tons → 1.85 million tons) 	<ul style="list-style-type: none"> Already achieved the 2005 goals thanks to aggressive measures taken at plants and systematic introduction of innovative energy-conserving technologies (FY2003 results: 1.57 million tons 19.5% reduction from the 1990 level)
(10) Waste and resource conservation	<ul style="list-style-type: none"> Promotion of waste reduction and resource conservation actions to achieve zero emissions 	<ul style="list-style-type: none"> Achievement of zero landfill waste at all plants by FY2003 Reduction of combustible waste to 1/3 or less of the 1990 level (60,000 tons → 20,000 tons) 	<ul style="list-style-type: none"> Achieved zero landfill waste 3 years ahead of schedule Reduced combustible waste by 77.5% (FY2003 results: 13,500 tons) → 2005 goal achieved ahead of schedule
(11) Water resources	<ul style="list-style-type: none"> New measures for conserving water resources with a focus on vehicle production plants 	<ul style="list-style-type: none"> Water consumption per vehicle Reduction by 20% from the FY1995 level (6.6m³/vehicle → 5.3m³/vehicle) 	<ul style="list-style-type: none"> Achieved the 2005 goal ahead of schedule through accelerated implementation of plant-focused measures (FY2003 results: 4.1m³/vehicle)

Wherever possible, the results have been updated to show the latest figures 



Item in Third Toyota Environmental Action Plan	Action policy	Specific goal	Results
(12) Logistics	<ul style="list-style-type: none"> Active promotion of logistics streamlining to reduce both CO₂ emissions and packaging and wrapping material usage 	<ul style="list-style-type: none"> Stabilization of CO₂ emissions to the FY1990 level or lower (317,000 tons) Reduction of packaging and wrapping material usage by 20% from the FY1995 level (88,000 tons → 70,000 tons) 	<ul style="list-style-type: none"> Reduced CO₂ emissions by shifting to transport modes with lower CO₂ emissions per unit and reducing the total shipment distance. (FY2003 results: 278,000 tons) Reduced packaging and wrapping material usage by converting to returnable containers and streamlining. (FY2003 results: 49,000 tons) Began implementing global measures <ul style="list-style-type: none"> Completed assessment of the situation in Japan Began assessment of the total usage in North America
(13) Prior-assessment systems	<ul style="list-style-type: none"> Establishment of a comprehensive prior-assessment system for the entire product life cycle (production, use, and disposal) 	<ul style="list-style-type: none"> Promotion of comprehensive environmentally conscious designs starting at the development stage 	<ul style="list-style-type: none"> Implemented LCA in 17 vehicle series Currently building a computerized database network for LCA Made a decision to introduce Eco-VAS, in which the person responsible for a particular vehicle sets goals and evaluates results on issues such as recycling and the reduction of SOCs (announced at the Environment Forum in June 2003)
(14) Environment-oriented business ventures	<ul style="list-style-type: none"> Active promotion of businesses that help improve the environment, such as ITS (Intelligent Transport Systems) and afforestation businesses 	<ul style="list-style-type: none"> Development and promotion of various types of ITS that can help improve the transportation environment Steady promotion of afforestation business (afforestation of 2,800ha of land in Australia by the end of 2005; evaluation of expansion possibility to other regions) Nurturing of other environment-related businesses 	<ul style="list-style-type: none"> Promoted an ITS model project (ETC: On-board units sold: 530,000 in FY2003; IMTS: Awaji Farm Park England Hill Area in Awaji Island and EXPO 2005 (planned); Crayon: Inside Toyota facilities and Toyota city) Biotechnology and afforestation businesses <ul style="list-style-type: none"> Tree planting: 1,550ha (in Australia as of the end of 2003) Livestock feed processing: Began full-scale operation of P.T. Toyota Bio Indonesia Roof garden: Established Toyota Roof Garden Corporation, and a peat mining company in China
(15) Suppliers	<ul style="list-style-type: none"> Promotion of and support for establishing environmental management systems, and management of substances of concern based on Toyota's standards (materials used in products and in production processes) 	<ul style="list-style-type: none"> Acquisition of ISO 14001 certification by all suppliers by FY2003 	<ul style="list-style-type: none"> Nearly all suppliers acquired ISO 14001 certification Management of substances of concern used in production (464 substances) is ongoing
(16) Dealers' cooperation	<ul style="list-style-type: none"> Promotion of actions to establish and achieve full compliance with the Toyota Japanese Dealer Environmental Guidelines created in November 1999 	<ul style="list-style-type: none"> Promotion and support of the achievement of FY2002 goals defined in the Toyota Dealer Environmental Standards 	<ul style="list-style-type: none"> All dealers achieved the goals defined in the standards, thanks to their efforts over the 3-year period (from FY2000 to FY2002) Prefectural Environmental Issue Information Exchange Meetings have been held to enable dealers to mutually check their environmental action status (since FY2002)
(17) Recycling system (Japan) (Europe)	<ul style="list-style-type: none"> Development of recycling technologies Participation in the creation of recycling systems through cooperation with the government and the industry Achievement of goals stipulated by laws in individual countries based on the EU ELV Directive 	<ul style="list-style-type: none"> Verification of and proposal on recycling technologies to achieve the 95% goal Building of a recycling system suitable to the Japanese society Building of infrastructures to recycle three focus items (airbags, CFCs/HFCs, and ASR) 	<ul style="list-style-type: none"> Finished verification of ASR recycling/recovery technologies Participated in the establishment of the Automobile Recycling Law and related legal system suitable to Japan Established management systems (Automotive Recycling Promotion Center, Japan Auto Recycling Partnership, and Toyota Recycle Corporation) Currently building a nationwide system for collecting and recycling the three items Fully complied with the July 2002 standards Evaluating the steps necessary to start collecting all end-of-life vehicles beginning in January 2007
(18) Transportation systems	<ul style="list-style-type: none"> Promotion of and proposal on research related to "the ideal transportation environment" 	<ul style="list-style-type: none"> Research and proposal on transportation policies that can help improve the environment, such as policies for easing traffic congestion 	<ul style="list-style-type: none"> Created the WBCSD's Sustainable Mobility Project (SMP) report Mobility 2030: Meeting the challenges to sustainability
(19) Related basic research	<ul style="list-style-type: none"> Promotion of and proposal on basic research that can help improve the environment 	<ul style="list-style-type: none"> Investigation of the effects of automobile exhaust emissions on the environment along roadways, and promotion of investigation/research on the effects on organisms 	<ul style="list-style-type: none"> Led the following activities at JAMA in cooperation with Toyota Central R&D Labs.: <ul style="list-style-type: none"> Research on the atmospheric environment Research on the effects on organisms
(20) Socially-contributing activities	<ul style="list-style-type: none"> Promotion of global support of environmental education, tree-planting activities, and basic academic research, etc. 	<ul style="list-style-type: none"> New research on the utilization of <i>satoyama</i> regions (forests and wetlands near populated areas), related trials, reforestation in cooperation with local community activities, and continuation of environmental education Enhanced support of environmental organizations' activities and basic academic research (e.g., ventures commemorating the receipt of the Global 500 Award) 	<ul style="list-style-type: none"> Opened the Satoyama Learning Institute Eco-no-Mori House (May 2003) Groundbreaking ceremony for the TOYOTA Shirakawa-Go Eco-Institute (August 2003) Established the Toyota Environmental Activities Grant Program (from 2000) Reforestation project in China and support of environmental NPOs (34 organizations)
(21) Among the public	<ul style="list-style-type: none"> Enhancements to and continued publication of environmental reports Publication of environmental reports by region Enhanced cooperation with society (communication) 	<ul style="list-style-type: none"> Utilization of the Internet to more effectively provide environmental information Enhancements to and continued publication of environmental reports (including overseas affiliates) Holding of various symposiums, exhibits, etc. under environmental themes 	<ul style="list-style-type: none"> Published environmental reports six years in a row since 1998 (receiving various awards) Published local environmental reports in nine countries/regions Added a section on social aspects beginning with the 2003 version, making the report into an "Environmental & Social Report" Held the Fifth Environmental Forum in 2003 (making it a regular event) Held Stakeholders Dialogs (since 2001)
(22) Among employees	<ul style="list-style-type: none"> Enhancements to the environmental education system Global expansion 	<ul style="list-style-type: none"> Systematic implementation of and enhancement of company-wide education (beginning in FY2001) 	<ul style="list-style-type: none"> Provided education at each level <ul style="list-style-type: none"> Education of new employees (since 1998) Education of environmental leaders (since 2000) Education of employees in key positions (since 2001) Training for overseas staff (since 2002) Created the Environmental Textbook in 2000 and environmental education videos in 2001 (both in Japanese and English)
(23) Comprehensive environmental management (global consolidated environmental management)	<ul style="list-style-type: none"> Implementation of consolidated environmental management that includes automobile-related production companies (in Japan and overseas) Building of a consolidated environmental management system for non-production companies 	<ul style="list-style-type: none"> Establishment of a system to consolidate numerical data and follow up annually Management of actions 	<ul style="list-style-type: none"> Began collecting and publishing the production-related environmental data from all companies subject to consolidated EMS in FY2002 Built the Environmental Performance Information System (EPI) and began its full utilization in FY2002 Taking risk-reduction actions Built an EMS and assigned a director responsible for environmental issues at each company Follow-up on the 2005 Plan and FY2003 Plan through reports on results of activities

Environmental Accounting

Basic Policy

Toyota defines environmental costs as “expenditures for the purpose of reducing the environmental impact caused by the company’s business activities” and “related expenditures.” Accounting is based on a classification of environmental costs into “environmental investments”¹ and “maintenance costs.”²

Concerning economic effects, in addition to the actual effects, customer effects are also calculated, and this year for the first time a trial calculation of inferred effects was made. Furthermore, environmental efficiency is calculated from the perspective of economic efficiency.

1. Environmental investments:

Environmental costs whose effects are judged to extend beyond the current term into the future

2. Maintenance costs:

Environmental costs other than environmental investments

Environmental Costs in FY2003

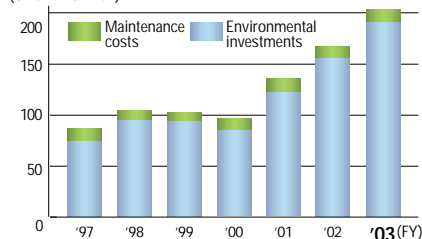
Total environmental costs were 201.6 billion yen. This is an increase of 35.3 billion yen from the previous fiscal year and accounts for 2.2% of net sales. The main factors leading to the increase include increases in R&D expenses resulting from a review of the applicable scope of engine development related expenses.

Since FY2001 Toyota has been disclosing environmental accounting data for seven vehicle body manufacturers commissioned to produce Toyota vehicles. In FY2003, environmental costs at these

seven vehicle body manufacturers amounted to 40.8 billion yen.

Trends in Maintenance Costs and Environmental Investments

(Unit: Billion Yen)



Economic Effects

1) Actual Effects

In calculating actual effects, from FY2003 Toyota began including income from “sales of recyclable goods” to total savings from “reductions in energy costs” and “income from environment related technologies.” In FY2003 total savings were 5.8 billion yen, an increase of 1.5 billion yen compared to FY2002.

Economic Effects (Actual Effects)

(Unit: Billion Yen)

	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY2003 results of 7 body manufacturers*
Reduction in energy costs	2.8	3.1	2.0	1.2	1.1	1.8
Reduction in waste processing costs	0.3	0.5	0.5	0.2	0.6	0.3
Sales of recyclable goods	—	—	—	—	3.3	1.7
Other (income from environment-related technologies, etc.)	1.3	0.8	0.6	2.9	0.8	—
Total	4.4	4.4	3.1	4.3	5.8	3.8

2) Customer Effects

Since FY2001, Toyota has been calculating “customer effects,” which are enjoyed by customers during the use stage. (Specifically, the savings in gasoline expenses as a result of the adoption of fuel-efficient engines.)

In FY2003, total customer effects resulting from the introduction of new models and models that underwent complete redesign were 1.8 billion yen and the reduction of CO₂ equivalent was 40,000 tons. Total life effects through to the end-of-life vehicle stage were approximately 19.1 billion yen.

Customer Effects in FY2003/Total Life Effects

Savings in gasoline expenses: 1.8 billion yen

Reduction of CO₂ equivalent: 40,000 tons

Total life effects:

$$\Sigma[(<10,000\text{km}^{-1} / \text{fuel efficiency of conventional vehicles} >^2 - <10,000\text{km} / \text{fuel efficiency of new vehicles} >^3) \times <106 \text{ yen} >^3 \times \text{number of Toyota vehicles sold in FY2003} >] \times 10.77 \text{ years}^4 = 19.1 \text{ billion yen}$$

1. Average passenger car annual driving distance as indicated in the Ministry of Land, Infrastructure and Transport's “Automobile and Transport Statistics”

2. Based on 10-15 Japanese test cycle

3. Nationwide average gasoline price per liter (including consumption tax) in FY2003 according to the Oil Information Center, Japan

4. Lifetime effects are calculated by multiplying the average length of use according to the Automobile Inspection & Registration Association

Note 1: In FY2003, a total of 6 vehicle series were new or underwent complete redesign.

Note 2: CO₂ equivalent coefficient = 2.322kg-CO₂/liter

Actual Results of Environmental Expenses

Actual Results Based on Toyota's Format

(Unit: Billion Yen)

Results Based on Project Format								
Classification	Item		Details	FY1999	FY2000	FY2001	FY2002	FY2003
Maintenance costs	Expenses related to environmental measures	Waste processing expenses		2.0	2.2	2.6	2.4	2.7
		Wastewater treatment expenses		0.7	0.6	0.6	0.5	0.5
		Atmospheric pollution and odor abatement expenses		—	1.8	1.5	1.3	1.4
		Global environmental preservation expenses		—	0.6	0.7	0.8	0.5
	Awareness-building expenses	Advertising, public relations, etc.		4.0	3.7	4.7	4.3	6.0
	Professional environmental staff expenses	Personnel expenses		1.5	1.5	1.6	1.7	1.9
	Environmental restoration expenses	Recall		—	—	0.7	—	—
		Soil and groundwater remediation		0.3	0.3	0.3	0.2	0.2
Subtotal for maintenance costs				8.5	10.7	12.7	11.2	13.2
Environmental investments	Research and development expenses			65.4	60.2	97.9	130.4	166.1
	Recycling-related expenses			1.5	1.8	1.8	1.9	1.2
	Other expenses (social contribution, ISO certification expenses, educational & training expenses, etc.)			1.9	1.9	1.2	1.6	2.2
	Plant and equipment investment*	Plant and equipment investment primarily for environmental action	Prevention of global warming	2.4	2.4	1.4	1.4	0.8
			Waste processing	1.1	2.1	1.6	2.0	0.4
			Pollution prevention, etc.	4.2	2.8	2.0	3.6	4.6
				7.7	7.3	5.0	7.0	5.8
		Expenses for environmental action, included in normal plant and equipment investment			16.1	13.3	15.3	14.2
	Subtotal for environmental investments			92.6	84.5	121.2	155.1	188.4
Total			101.1	95.2	133.9	166.3	201.6	

* Depreciation expenses of investments in plant and equipment are not included in these costs

FY2003 Actual Results Based on the Ministry of the Environment's Format

(Unit: Billion Yen)

Classification		Toyota		7 body manufacturers*	
		Investments	Expenses	Investments	Expenses
(1) Business area costs	[1] Pollution prevention cost	3.1	1.9	0.8	2.2
	[2] Global environmental Preservation cost	14.5	0.5	3.4	0.5
	[3] Resource circulation cost	0.4	2.7	0.6	2.2
(2) Upstream/downstream costs	Amount allocated by recycling-related industry organizations	—	2.5	0.1	0.3
(3) Management activity costs	Environmental advertisements, environmental report publication costs, expenses for professional environmental staff, etc.	—	8.5	—	2.1
(4) Research and development costs	R&D expenses for reducing substances of concern	—	166.1	0.3	28.1
(5) Social activity costs	Contribution to environmental preservation organizations, etc.	—	0.3	—	0.1
(6) Environmental damage remediation costs	Soil and groundwater remediation costs, etc.	0.9	0.2	—	0.1
Total		18.9	182.7	5.2	35.6
		201.6		40.8	

* 7 body manufacturers: Araco, Kanto Auto Works, Daihatsu Motor, Toyota Auto Body, Hino Motors, Toyota Motor Kyushu, and Central Motor
(Calculations made on the basis of standards used by each company)

(Reference) FY2003 Total R&D expenses: 591.2 billion yen

Total plant and equipment investment: 266.4 billion yen



Inferred Effects

In this year's report, Toyota calculated economic effects based on a trial calculation of the "contribution to profits from environmental responses." This was a trial calculation of the contribution to the increase in operating income by customers who made their purchase decisions because of environmental considerations.

The calculation method is as follows:

Net sales from vehicles was multiplied by the ratio of operating income to net sales. This was then multiplied by the percentage of customers who indicated that they made their purchase decisions because of environmental considerations.

Other inferred effects include "improved corporate image" and "risk avoidance," but this has not been calculated due to difficulties in obtaining solid data.

Method of Calculating the Contribution to Profits from Environmental Responses

Net sales from vehicles¹ (7,028,341 million yen)
 x ratio of operating income to net sales¹ (9.3%)
 x percentage of customers who made their purchase decisions because of environmental considerations² (40.3%)
 = approx. 260 billion yen.

1. Unconsolidated financial results for the term ended March 2004

2. Questionnaire survey conducted by *Nikkei BP* of customers in Japan who actually purchased vehicles during the last three years (*Nikkei Ecology*, July 2000 edition)

FY2003 Environmental Accounting at TMT (Thailand) and Kuozui Motors (Taiwan)

Environmental Costs

(Unit: Million Yen)

Classification	Item	Details	TMT	Kuozui Motors
Maintenance costs	Expenses related to environmental measures	Waste processing expenses	10.7	51.8
		Wastewater treatment expenses	20.7	14.4
		Atmospheric pollution abatement expenses	6.0	14.8
		Global environmental preservation expenses	—	9.9
	Awareness-building expenses	Environmental report publication costs	0.3	—
	Professional environmental staff expenses	Personnel expenses	22.2	13.2
	Environmental restoration expenses	Soil and groundwater remediation	4.0	—
	Subtotal for maintenance costs		63.9	104.1
Environmental investments	Environment-related plant and equipment investments		—	262.9
	Environment-related general expenses	Social contribution expenses and membership fees	0.4	9.5
		Survey expenses / educational & training expenses	0.7	2.0
		ISO certification-related expenses	0.3	0.3
	Subtotal for environmental investments		1.4	274.7
Total			65.3	378.8

Economic Effects

(Unit: Million Yen)

Purpose	TMT	Kuozui Motors
Reduction in energy costs	46.8	28.2
Reduction in water usage expenses (use of rainwater)	—	1.7
Total	46.8	29.9

Reference

	TMT	Kuozui Motors
Production (units)	200,537	103,425

*Exchange rate: 1 baht = 2.67 yen, NT\$ 1 = 3.2 yen

Effects of Reducing Environmental Impact (Quantum Effects)

Reduction of environmental impact is the cumulative effect of past environmental investments. Specific effects of improvements are summarized separately for each area in this report.

Please see p. 18 - 25 for effects of research and development

Please see p. 26 - 35 for effects of plant and equipment investments

Please see p. 36 - 41 for effects of recycling

Eco-efficiency

Eco-efficiency refers to the volume of business activity per unit of environmental impact, and is a guideline for reducing environmental impact through improvements in technology and economic efficiency (as defined by the Ministry of the Environment's "Environmental Accounting Guidebook").

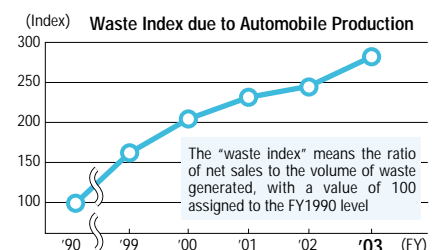
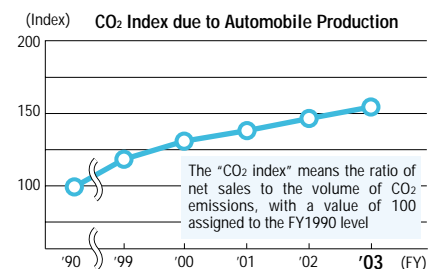
Toyota calculates eco-efficiency using the formula below and monitors the results in the form of the eco-efficiency index. CO₂ emissions volume and the volume of waste generated by the Production Group were used to determine the environmental impact starting with data from FY1990. Over 13 years, the CO₂ index has increased by about 50%, and the waste index by approximately 190%.

Toyota will continue to seek a balance between environmental and economic effects in its efforts to control environmental impact and raise eco-efficiency.

Eco-efficiency Formula

$$\text{Eco-efficiency} = \frac{\text{Net sales}}{\text{Environmental impact}}$$

Trend in Eco-efficiency





Development and Design



Yoshio Shirai
Environmental Product Design
Assessment Committee Chairman

Yoshio Shirai

Yoshio Shirai joined Toyota in 1973 and has been involved in the vehicle body design of numerous vehicle series. After various assignments, including that of General Manager of the Body Engineering Div.2, he became a Director in 2001. In 2003, he was appointed Managing Officer. He took up the position of Chairman of the Environmental Product Design Assessment Committee from June 2003.

The results of the major initiatives taken by Toyota in FY2003 based on the Third Environmental Action Plan are as below.

- 1) Introduced 12 more vehicle series that meet or surpass the Ultra Low-Emission Vehicle level, accounting for 76.5% of total production and an increase of 29 percentage points from the previous year.
- 2) Achieved the 2010 Fuel Efficiency Standards in six out of seven categories.
- 3) Introduced 12 additional vehicle series that meet both the 2010 Fuel Efficiency Standards and the Ultra Low-Emission Vehicle level, accounting for 68% of total production and an increase of 27 percentage points from the previous year.
- 4) Introduced vehicles fitted with the DPNR (Diesel Particulate NOx Reduction) system, a new catalytic converter system for diesel vehicles and the DPR (Diesel Particulate active Reduction) system.
- 5) Expanded introduction of fuel cell hybrid vehicles. Leased to local governments and private companies.
- 6) Started trial operation of the environmental impact assessment system Eco-VAS (Eco-Vehicle Assessment System), which builds on the concept of life cycle assessment (LCA).

Organization Chart (As of March 2004)

Environmental Product Design Assessment Committee

Chairman: Managing Officer Yoshio Shirai
Established in 1973
Studies key environmental preservation issues related to development and design of Toyota vehicles

Fuel Efficiency and Exhaust Emissions Committee

Promotes technological development related to improvement of fuel efficiency and exhaust emissions

Noise Reduction Subcommittee

Plans promotion of technological development related to reduction of vehicle noise

Clean-energy Vehicle Subcommittee

Promotes the development and introduction of clean-energy vehicles

Working Group by Topics

Development of new air conditioning coolants, reduction of VOC emissions generated in the vehicle interior, etc.

ISO 14001 Promotion Subcommittee

Creates and maintains the environmental management system of development and design areas and aims for improvement

Eco-VAS Subcommittee

Promotion of Eco-VAS

Product Environmental Management System

Toyota continued to develop products applying its product environmental management system based on ISO 14001 standards. With regard to internal audits, there were nine indications of minor non-compliance. Corrective actions were immediately implemented. In renewal audits, although four issues were identified as items to be monitored, there were no instances of non-compliance on the whole and it was concluded that Toyota is appropriately applying and maintaining the environmental management system (EMS).

In addition, renewal audits were used as an opportunity to acquire expanded certification of the EMS including all design and development activities of Toyota Technical Center (Head Office area), Higashi-Fuji Technical Center, and Shibetsu Proving Ground. This was a managerial decision designed to raise employee awareness of the environment even further and to increase transparency to neighboring communities.

Audit Results

	Internal audit	Renewal audit
Serious non-compliance	0	0
Minor non-compliance	9	0
Recommended improvements	10	
Items to be monitored		4

Main indications: Points related to maintenance of documentation and records

Reducing Exhaust Emissions

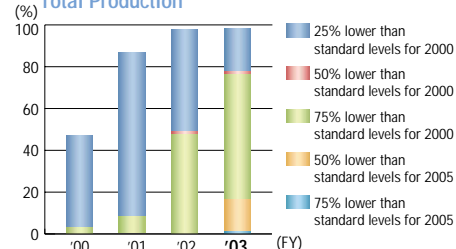
FY2003 Product EMS Goal

Set voluntary standards in response to the Exhaust Emission Standards specified in the Safety Regulations for Road Vehicles, the Approval System for Low-Emission Vehicles and new long-term regulations, and for vehicles in the eight Tokyo area municipalities

Promotion of Widespread Adoption of Low-Emission Vehicles

In FY2003, Toyota increased the number of models that meet the 2000 Exhaust Emissions Standards in the Ministry of Land, Infrastructure and Transport's Approval System for Low-Emission Vehicles to 181 models. Together with the models that newly meet the 2005 Exhaust Emissions Standards, this accounts for 99% of total production. The number of vehicle series that achieved an exhaust emission level 75% lower than the 2000 Exhaust Emissions Standards (Ultra Low-Emission Vehicle level) reached 59.8% of total production.

Low-Emission Vehicles as a Percentage of Total Production



Percentage of Total Production that Met the Approval System for Low-Emission Vehicles in FY2003

2000 Exhaust Emissions Standards

Category	Reduction level	Percentage of total production (No. of models)
☆ Transitional Low-Emission Vehicles	25% lower than standard levels for 2000	21.7% (85)
☆☆ Low-Emission Vehicles	50% lower than standard levels for 2000	1.0% (6)
☆☆☆ Ultra Low-Emission Vehicles	75% lower than standard levels for 2000	59.8% (90)

Percentage of Total Production that Met the New Approval System for Low-Emission Vehicles in FY2003

2005 Exhaust Emissions Standards

Category	Reduction level	Percentage of total production (No. of models)
New ☆☆☆ U-LEV (Ultra-Low Emission Vehicle)	50% lower than standard levels for 2005	15.7% (84)
☆☆☆☆ SU-LEV (Super Ultra-Low Emission Vehicle)	75% lower than standard levels for 2005	1.0% (1)

Vehicles that Met the Approval System for Low-Emission Vehicles in FY2003

Low-Emission Vehicle level	Ultra Low-Emission Vehicle level
Vehicle series	No. of models
RAV4/JL	4
Avensis	4
Alphard Hybrid	1
Ipsum	2
WISH	2
Estima L/T	2
Corolla Spacio	3
Crown	3
Kluger V/L	4
SIENTA	2
Prius	1
Raum	2
Total	30

The percentage of vehicles that meet or surpass the Ultra Low-Emission Vehicle level, including those that meet the 2000 Exhaust Emissions Standards and the 2005 Exhaust Emissions Standards reached 76.5% of total production in FY2003, for an increase of 29.1 percentage points compared to the previous year. The number of vehicle series that meet or surpass the Ultra Low-Emission Vehicle level and also meet the 2010 Fuel Efficiency Standards reached 67.9% of total production in FY2003, increasing by 26.7 percentage points from FY2002.



Percentage of Total Production that Meets Both the 2010 Fuel Efficiency Standards and the Low-Emission Vehicle Level

(Meet or surpass the Ultra Low-Emission Vehicle level)

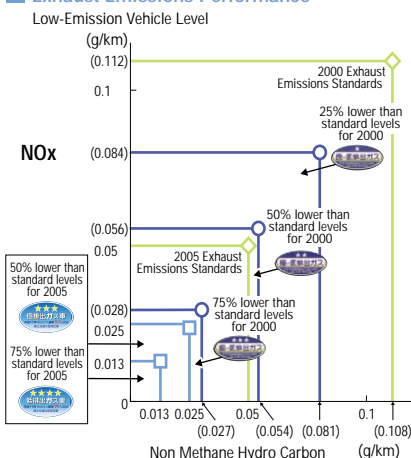
	Category	Percentage of total production		
		FY2001	FY2002	FY2003
2010 Fuel Efficiency Standards	☆☆☆☆ Ultra Low-Emission Vehicles	5.8%	41.2%	53.0%
	New ☆☆☆☆ U-LEV (Ultra-Low Emission Vehicle)	—	—	13.9%
	☆☆☆☆☆ SU-LEV (Super Ultra-Low Emission Vehicle)	—	—	1.0%

Compliance with the New Low-Emissions Standard

In September 2003, the 2005 Exhaust Emissions Standards (New Long-term Standards) were announced, specifying new exhaust emissions standards for passenger vehicles, trucks, and buses. The new standards are some of the strictest in the world, and require at least a 50% reduction in exhaust emissions from the current 2000 Exhaust Emissions Standards.

Based on the 2005 Exhaust Emissions Standards, two additional levels were created within the Approval System for Low-Emission Vehicles. These are "50% lower than the 2005 Exhaust Emissions Standards" and "75% lower than the 2005 Exhaust Emissions Standards." Acceptance of applications for approval under the new standards began in October 2003.

Exhaust Emissions Performance



Note: The values indicated above have been converted, assuming test modes specified in the 2005 Exhaust Emissions Standards.

Toyota quickly took action to comply with the new standards and sent in approval applications to the Ministry of Land, Infrastructure and Transport in December 2003. Among Toyota's gasoline-powered passenger vehicles, 84 models were approved as 50% lower than the 2005 Exhaust Emissions Standards and one model (the Prius) was approved as 75% lower than the 2005 Exhaust Emissions Standards.

Cleaner Diesel Engines

Toyota developed two new exhaust emissions cleaning systems for diesel vehicles: the DPR (Diesel Particulate active Reduction) system, a catalytic converter system that is highly effective in reducing PM (Particulate Matter); and the DPNR (Diesel Particulate NOx Reduction)* system, which continuously and simultaneously reduces PM and NOx.

Toyota incorporated these systems into the Dyna 200 and 300, as well as the Toyoace G25 and G35, all of which passed the 2003 (New Short-term) Exhaust Emissions Standards.



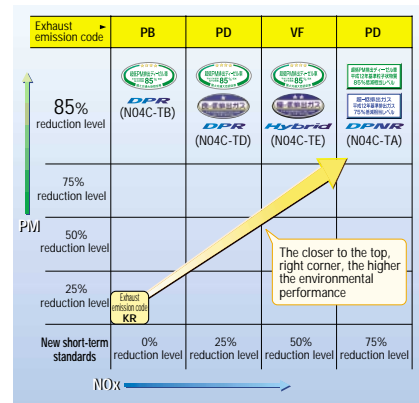
Dyna fitted with the DPNR system

The NO4C, a 4.0-liter diesel engine developed based on the concept of D-CAT (Diesel-Clean Advanced Technology), the latest clean diesel engine technology, is offered in four types depending on the amount of NOx emission. NO4C-TA includes a DPNR system that combines a newly developed porous ceramic structure with a NOx storage reduction three-way catalytic converter and reduces PM by 85% and NOx by 75% below the standards, thus achieving emission levels equivalent to Ultra Low-Emission Vehicles in the Ministry of Land, Infrastructure and Transport's Approval System for Low-Emission Vehicles.

Furthermore, DPR systems are included in both NO4C-TB, which uses a turbocharger with a wastegate valve, and NO4C-TD, which uses an electronically controlled variable-nozzle turbocharger. Both of these diesel engines have qualified as ultra-low PM emission diesel engines by achieving a particulate matter emission level that is 85% lower than the standard levels for 2000. Additionally, by achieving a NOx emission level that is 25% lower than the standards, vehicles fitted with NO4C-TD qualify as Transitional Low-Emission Vehicles in the Approval System for Low-Emission Vehicles.

*For vehicles that are fitted with the DPNR system, Toyota must individually obtain approval from the Minister of Land, Infrastructure and Transport for each vehicle that is to be registered.

Vehicles that Meet the Low-Emissions Vehicle Level



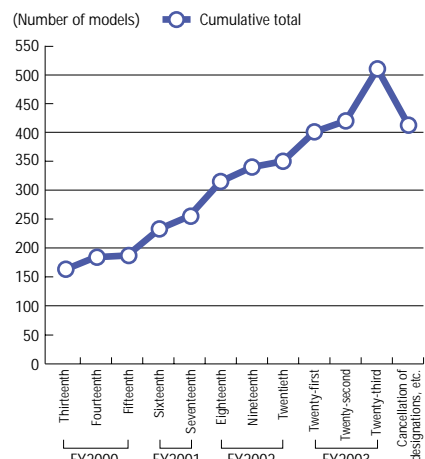
*Vehicles equipped with a turbocharged DPR system (NO4C-TD) have achieved a NOx emission level that is 25% lower than the 2000 Exhaust Emissions Standards; vehicles equipped with a hybrid DPR system, 50%; and vehicles equipped with a DPNR system, 75%.

Responses to the Low-Pollution Vehicle Designation System

In FY2003, Toyota again submitted its vehicles to the low-pollution vehicle designation system administered by eight Tokyo area municipalities¹, and received certification for 159 of its models, reaching a cumulative total of 414 models. Toyota also submits its vehicles to the low-pollution vehicle designation system administered by six Kyoto, Osaka and Kobe area municipalities².

The Dyna and the Toyoace, fitted with the DPR system, received certification from both designation systems, while the DPNR fitted vehicle received the certification administered by eight Tokyo area municipalities.

Trend in Number of Vehicle Models Certified as Low-Pollution Vehicles



1. Eight Tokyo area municipalities: Saitama, Chiba, Tokyo, Kanagawa, Yokohama City, Kawasaki City, Chiba City, and Saitama City
2. Six Kyoto, Osaka and Kobe area municipalities: Kyoto, Osaka, Hyogo, Kyoto City, Osaka City, and Kobe City

Improving Fuel Efficiency

FY2003 Product EMS Goal

Achieve the 2010 Fuel Efficiency Standards on all vehicle weight categories ahead of schedule in 2005

Six Vehicle Categories Achieve 2010 Fuel Efficiency Standards

In FY2003, all six Toyota vehicle series that were new or underwent complete redesign cleared the 2010 Fuel Efficiency Standards. Vehicles in the 2,016 - 2,265kg category (which did not achieve the standards the previous year) also achieved the 2010 Fuel Efficiency Standards in FY2003, for a total of six out of seven vehicle weight categories. The number of gasoline-powered passenger vehicles meeting the 2010 Fuel Efficiency Standards increased by 8% from the previous year to reach 83% of total production.

Increasing the Number of Vehicles with Fuel Efficient Engines

The new Crown, which uses a newly developed V6 engine (3GR-FSE or 4GR-FSE), achieves high fuel efficiency through the use of the stoichiometric D-4, which ensures constant optimum combustion, and Dual VVT-i*, as well as through reductions in both friction loss among engine components and overall engine weight. The front-wheel drive engine (1NZ-FE) used in the SIENTA achieves high fuel efficiency by reducing friction through the use of such mechanisms as a roller



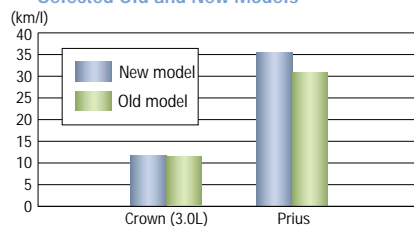
3GR-FSE engine

rocker arm, and by improving combustion efficiency through the use of high-ignition iridium sparkplugs, etc. As a result, the SIENTA achieves top-of-its-class (7-passenger vehicle) fuel efficiency of 19.0km/liter.

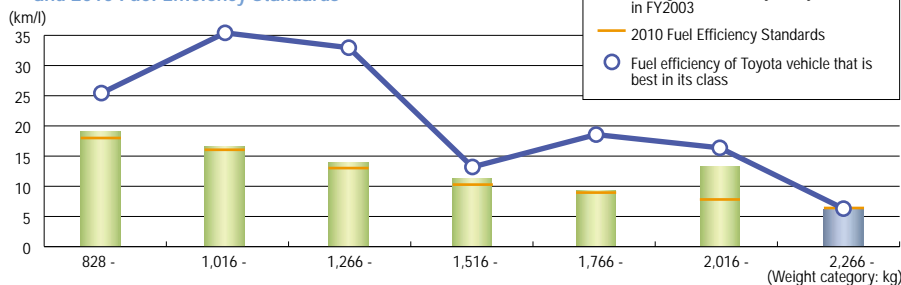
The new Dyna and Toyoace, which are fitted with the newly developed 4.0-liter diesel turbo engine NO4C, have significantly improved combustion efficiency, using a common-rail fuel injection system that precisely controls the injection of high-pressure fuel and a turbocharger with intercooler that continuously controls the supercharging pressure.

*Dual VVT-i (Variable Valve Timing-intelligent): Mechanism that continuously optimizes intake and exhaust valve opening/closing timings based on the engine's operational condition

Fuel Efficiency Comparison between Selected Old and New Models



Actual Fuel Efficiency of Toyota Vehicles in FY2003 and 2010 Fuel Efficiency Standards



Models that Meet the 2010 Fuel Efficiency Standards among FY2003 New Models and those that Underwent Complete Redesign

Weight category (Vehicle weight: kg)	Fuel efficiency standard (km/l)	FY2003 average fuel efficiency (km/l)	Qualifying vehicle series of FY2003 new models and those that underwent complete redesign
828 - 1,015	17.9	19.0	—
1,016 - 1,265	16.0	16.5	SIENTA, Prius, Raum*
1,266 - 1,515	13.0	13.9	Avensis, * SIENTA, Prius
1,516 - 1,765	10.5	11.2	Crown
1,766 - 2,015	8.9	9.2	Alphard Hybrid
2,016 - 2,265	7.8	13.2	Alphard Hybrid
2,266 -	6.4	6.2	—

*Some of the qualifying vehicle series may not meet the standards depending on models and specifications

*Indicates a category that has achieved the 2010 Fuel Efficiency Standards

*Vehicles that achieved the efficiency standards before FY2002 are not included

*All fuel efficiency values are based on the Ministry of Land, Infrastructure and Transport's 10-15 Japanese test cycle

Introduction of High-efficiency Transmission

To increase the efficiency of its power transmission, Toyota has incorporated into the Crown (with a 2.5-liter engine) a 5-speed automatic transmission (5Super ECT), which has a wide gear-ratio range. Making the fifth gear ratio smaller has improved fuel efficiency at high speeds. Additionally, Toyota has incorporated a newly developed 6-speed AT (6Super ECT) into both the Crown (with a 3.0-liter engine) and the Celsior. When the vehicle is stopped with the transmission in Drive, the forward clutch is moved close to Neutral, thereby reducing engine load and improving fuel efficiency. Furthermore, by reducing the loss inside the transmission and expanding the flex lock-up operation range even when the accelerator is not being depressed, Toyota has achieved significant improvement in fuel efficiency.

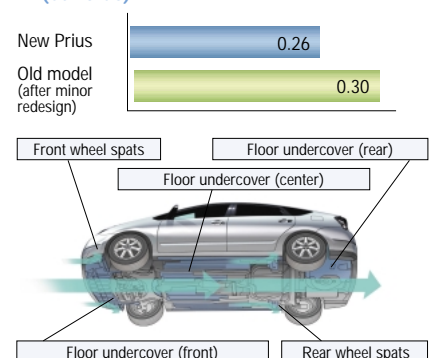
For the SIENTA, Toyota has achieved excellent fuel efficiency characteristics by incorporating an automatic continuously variable transmission (Super CVT), in addition to a 4-speed AT (4Super ECT) with a flex lock-up function.

Initiative for Reducing Running Resistance

In addition to reducing the air resistance of the vehicle upper body, Toyota has made the floor panels flatter and used various types of air flow control parts to control the flow of air under the floor panels, as a result achieving a high level of aerodynamic performance. The Cd (Coefficient of drag) value that Toyota has achieved is 0.28 for the Avensis, 0.27 for the Crown, and 0.26 for the Prius, indicating excellent aerodynamic performance.

For the Alphard Hybrid, Toyota has reduced its running resistance by using a body with superior aerodynamic performance and reducing the rolling resistance of the various parts of the drivetrain.

Comparison of Aerodynamic Performance (Cd value)





Highlights

Responses to the Green Taxation System

In FY2003, all 6 vehicle series that were new or underwent complete redesign, the Raum, Alphard Hybrid, Prius, Avensis, SIENTA and Crown, cleared the 2010 Fuel Efficiency Standards, and also achieved an exhaust emissions level that is 75% lower than the 2000 Exhaust Emissions Standards in the Ministry of Land, Infrastructure and Transport's Approval System for Low-Emission Vehicles, thus qualifying as Ultra Low-Emission Vehicles.

As a result, the number of gasoline-powered passenger vehicles that met the standards based on the Japanese government's Green Taxation System, including vehicle series that underwent

minor redesign, increased to 34 vehicle series in FY2003.

In April 2004, the Japanese government's Green Taxation System was revised, with special treatment

Details of Special Measures within the Green Taxation System

	50% lower than FY2005 standards 	75% lower than FY2005 standards
Vehicles that meet fuel efficiency standards 		A reduction of approximately 25% in automobile tax The automobile acquisition tax is reduced by 10,000 yen for an automobile for private use, and by 6,000 yen for an automobile for commercial use.
Vehicles with fuel efficiency 5% greater than the standards 	A reduction of approximately 25% in automobile tax The automobile acquisition tax is reduced by 10,000 yen for an automobile for private use, and by 6,000 yen for an automobile for commercial use.	A reduction of approximately 50% in automobile tax The automobile acquisition tax is reduced by 15,000 yen for an automobile for private use, and by 9,000 yen for an automobile for commercial use.



Alphard Hybrid



Crown



SIENTA



Prius

given to automobiles with even less environmental impact than before.

In December 2003, 31 models from 19 vehicle series were approved by the Ministry of Land, Infrastructure and Transport as being eligible for lower automobile taxes and automobile acquisition taxes.

Furthermore, the FY2004 subsidy program for the purchase of electric or hybrid vehicles* pays for about one half of the price difference between a conventional vehicle and an electric or hybrid vehicle under certain conditions. Six vehicle series, including the Prius and the Alphard Hybrid, are eligible for this program.

*FY2004 subsidy program for the purchase of electric or hybrid vehicles

In this program, the government agencies provide a subsidy to purchasers of electric or hybrid vehicles under certain conditions

Vehicles that Meet the New Green Taxation System

Alphard G/V	Corolla Fielder
Alphard Hybrid	Crown
ist	Kluger V/L
Ipsium	SIENTA
WISH	Harrier
Vitz	FunCargo
Estima T/L	Platz
Estima Hybrid	Prius
Caldina	Probox/Succeed
Corolla	

*Not applicable to all vehicles due to differences in models or specifications
Applicable vehicle series are as of the end of March 2004

Reducing External Automobile Noise

FY2003 Product EMS Goal

Make all vehicles compliant with Toyota's voluntary standards on external automobile noise, set in response to permissible levels specified in Article 30 of the Safety Regulations for Road Vehicles

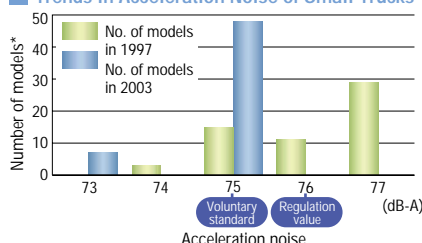
Promotion of Continuous Compliance with the Latest Standards

All of Toyota's passenger cars and commercial vehicles have already achieved the latest standards, and Toyota is continuously taking steps to stay compliant with the latest standards in its new models and models that undergo complete redesign. As a result, 12 passenger vehicle series and two small truck series have already met the latest standards.

Incorporating New Technology to Reduce External Automobile Noise in Commercial Vehicles

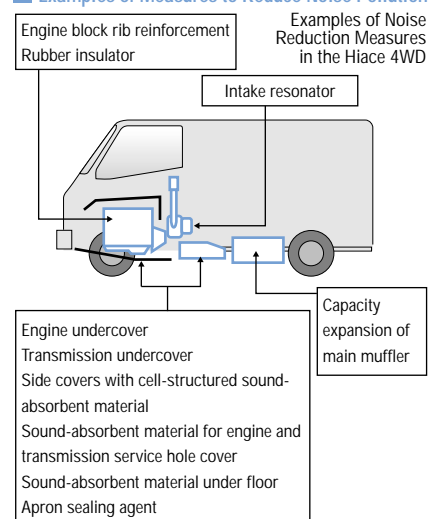
Toyota introduced a newly developed sound-absorbent material with a cell structure for the undercover and sidecover of commercial vehicles. Other measures to reduce external automobile noise include the incorporation of technologies such as using an intake resonator and a larger-capacity muffler.

Trends in Acceleration Noise of Small Trucks



*Number of models: The total number of combinations of engine and transmission by vehicle series

Examples of Measures to Reduce Noise Pollution



Development of Clean-energy Vehicles

Complete Redesign of the Prius

In September 2003, Toyota launched the all-new Prius hybrid passenger vehicle. The new Prius is equipped with the next-generation Toyota Hybrid System (THS II), that represents a sophisticated fusion of ecology and power. It attains world-leading levels of fuel efficiency at 35.5 km/liter and achieves a 75% reduction in emissions from the 2005 Exhaust Emissions Standards.

Please see p. 46 - 49 for details on the new Prius

Introduction of Alphard Hybrid

The Alphard Hybrid launched in July 2003 features the Toyota Hybrid System (THS-C), VVT-i, a high performance three-way catalytic converter system and an air-fuel ratio compensation system that significantly reduce NOx and HC (Hydrocarbon) emissions and achieve a 50% reduction in emissions from the 2005 Exhaust Emissions Standards. The Alphard Hybrid also realizes about twice the fuel efficiency specified by the 2010 Fuel Efficiency Standards at 17.2km/liter.

World's First Small Hybrid Truck

In September 2003, Toyota introduced the Dyna/Toyoace equipped with a hybrid system, which is the first of its kind in the world and was jointly developed with Hino Motors, Ltd. This truck has achieved a PM emission level that is 85% lower than standard levels for 2000, qualifying it as an ultra-low PM emission diesel vehicle, as well as a NOx emission level that is 50% lower than the 2000 Exhaust Emissions Standards, qualifying it as a Low-Emission Vehicle. The truck's fuel efficiency has also been improved by 30%.



Toyoace Hybrid

Increased Introduction of TOYOTA FCHV

In FY2003, Toyota began leasing one additional unit of the TOYOTA FCHV to the Ministry of Land, Infrastructure and Transport, one unit each to the local

government bodies of Aichi Prefecture and Nagoya City and one unit each to four private enterprises, Iwatani International Corporation, Nippon Oil Corporation, Tokyo Gas Co., Ltd. and Toho Gas Co., Ltd. Overseas, Toyota has leased a total of three TOYOTA FCHVs — one to the Irvine campus of the University of California and one to the Davis campus, and one to Stuart Energy Systems Corporation, a private enterprise. Including the six units leased last year, this increased to 16 the number of TOYOTA FCHVs leased so far.



Ceremony to mark the delivery of a TOYOTA FCHV to Iwatani International Corporation

Operation Start of FCHV-BUS2 on Tokyo Metropolitan Bus Routes

FCHV-BUS2, a large, low-floor fuel cell hybrid bus, jointly developed by Toyota and Hino Motors, Ltd., began operation on regular Tokyo metropolitan bus routes in August 2003. This bus is operating on two routes: between the JR Tokyo Station, Tokyo Big Sight, and Tokyo Teleport Station, and between Monzen-nakacho and Tokyo Teleport Station. At the 2005 World Exposition, Aichi, Japan, Toyota plans to introduce an improved version of the FCHV-BUS2 as a transportation means between event sites.



FCHV-BUS2 that began operation on Tokyo metropolitan bus routes

Incorporation of a CNG Engine in the Probox

The CNG (Compressed Natural Gas) engine system is based on a 1.5-liter gasoline engine, with its major parts and fuel system modified for using CNG. The use of a high-performance catalytic converter and optimized engine control make this a clean-burning engine. The CNG-powered Probox qualifies as a

vehicle that achieves an exhaust emission level 75% lower than the Ministry of Land, Infrastructure and Transport's 2005 Exhaust Emission Standards.

Increasing Popularity of Clean-energy Vehicles

In FY2003, Toyota sold 42,250 clean-energy vehicles in Japan, which accounted for 2.4% of all Toyota vehicles sold in Japan. The number of hybrid vehicles sold was 42,021 and accounts for approximately 99% of all clean-energy vehicles sold. Since the launch of the first generation Prius in December 1997, a cumulative total of more than 210,000 hybrid vehicles have been sold worldwide.

Number of Toyota's Clean-energy Vehicles Sold (in Japan)

Unit: Vehicles

	FY1999	FY2000	FY2001	FY2002	FY2003
Electric vehicles	46	19	56	23	7
Hybrid vehicles	14,289	12,263	23,373	15,390	42,021
CNG vehicles	178	166	187	162	222
Total	14,513	12,448	23,616	15,575	42,250
Percentage relative to all Toyota vehicles sold	0.9%	0.7%	1.4%	0.9%	2.4%
Total number of Toyota vehicles sold	1,674,631	1,767,422	1,677,044	1,705,577	1,729,282

Total number of units of the Prius exported in FY2003 reached 32,425 units.

Licensing of Hybrid Technology Patents to Ford

Toyota has been negotiating with Ford Motor Company in order to promote wider acceptance of hybrid vehicles, and in March 2004 concluded licensing agreements for hybrid system and emissions purification patents. Patents for hybrid system technology developed and owned by Toyota will be licensed to Ford.

Reduction of VOC inside the Cabin

Strengthening Initiatives to Reduce VOC Emissions in the Vehicle Interior

Toyota has reviewed the materials, processing methods and adhesives for interior parts to limit the amount of volatile organic compounds (VOCs) generated, thus improving the comfort level inside the cabin. In the new Crown launched in December 2003, Toyota has achieved air quality that exceeds the standards set in the Ministry of Health, Labour and Welfare's Interior Concentration Guidelines.



LCA

Toyota actively carries out Life Cycle Assessment (LCA), an evaluation of environmental impact over the total product life, from the material stage, through the parts and body manufacturing stages to the use, maintenance and disposal stages, on gasoline-powered passenger vehicles that are new or have been redesigned as well as in the development stage of technology such as FCHVs, etc. In FY2003, Toyota carried out LCA on six vehicle series, the

Raum*, Prius, SIENTA, Harrier, Crown and Alphard Hybrid.

Establishment of Eco-VAS by Expanding LCA

In 2004, Toyota began trial operation of Eco-VAS, a new environmental impact assessment system, which provides feedback to the engineers responsible for product development regarding suggestions for improvement and for effectively reducing environmental impact. The objective of Eco-VAS is to serve as a valuable environment-management tool for those responsible for

vehicle development and allow —throughout the entire vehicle development process— an assessment of the impact each vehicle will have on the environment. By implementing comprehensive environmental impact assessment based on the concept of life cycle assessment (LCA) by those responsible for vehicle development, Toyota aims to effectively heighten its vehicle-related environmental responses.

*LCA of Eco-Plastic parts only

Please see p. 25 for details on Eco-VAS

Highlight

Implementation of LCA in Models that Undergo Complete Redesign and Pre-prototype Models

LCA for the SIENTA

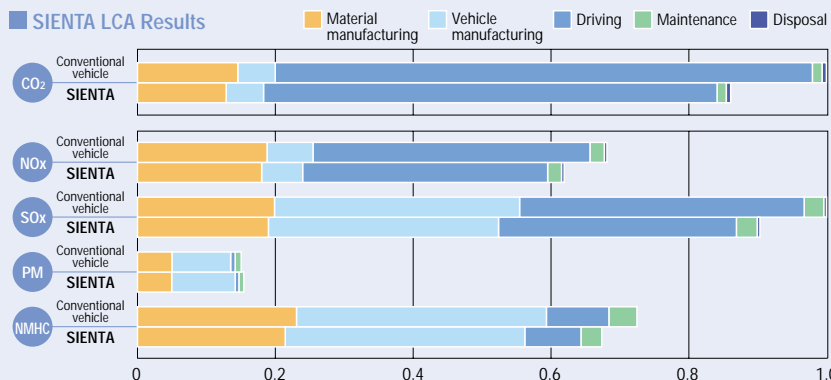
The new SIENTA is equipped with a compact lightweight engine, and has achieved fuel efficiency improvement through the use of VVT-i, an automatic continuously variable transmission Super CVT, and a super-intelligent 4-speed

automatic transmission with a flex lock-up function (4Super ECT). Furthermore, three-way catalytic converters provided in two stages, and an air-fuel ratio compensation system, etc., have led to significantly cleaner exhaust emissions. As a result, the SIENTA emits 17% less

CO₂, 11% less NO_x, and 8% less non-methane hydrocarbons compared to other gasoline-powered vehicles in the same class.



SIENTA



Specification Comparison between the SIENTA and a Conventional Vehicle

	Vehicle weight	Fuel efficiency	Exhaust emissions
Conventional vehicle	1,245kg	16.0km/l	NOx/HC:0.02g/km
SIENTA	1,207kg	19.0km/l	NOx/HC:0.02g/km

LCA of the Fine-N

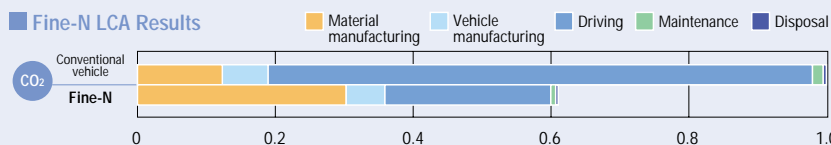
In October 2003, Toyota exhibited a new fuel cell hybrid concept vehicle, Fine-N, at the Tokyo Motor Show. Raised fuel-cell efficiency and increased hydrogen tank pressure give the Fine-N a cruising distance of 500km in the 10-15 Japanese test cycle. By condensing

systems such as the fuel cell stack into the floor of the car, using drive-by-wire technology for steering control which electronically relays the driver's operations to the car, and installing a motor on the inner side of each wheel, the Fine-N boasts cabin space greater

than that of the Century, while at the same time achieving a CO₂ emissions level that is 40% lower than gasoline-powered vehicles in the same class.



Fine-N



*Assumes a lifetime travel distance of 100,000km (10 years) and calculations based on the 10-15 Japanese test cycle

*In the graphs, the CO₂ value for the conventional vehicle is set at 1, while other values are based on a conventional vehicle SO_x value of 1

Environmental Data for FY2003 Japanese New Models and Redesigns (Passenger Vehicles)

Specifications	Name	Raum	Alphard Hybrid	Prius	SIENTA	Avenis	Crown
	Vehicle model	CBA-NCZ20	CAA-ATH10W	DAA-NHW20	CBA-NCP81G	CBA-AZT250	CBA-GRS182
	Engine model	1NZ-FE	2AZ-FXE	1NZ-FXE	1NZ-FE	1AZ-FSE	3GR-FSE
	Transmission	4AT	CVT	Super CVT	CVT	4AT	6AT
Start of sales		May 2003	July 2003	September 2003	September 2003	October 2003	December 2003
Greenhouse gases	Amount of HFC134-a used (g) as air conditioning refrigerant	360	830	450	380	440	450
	CO ₂ emissions (g/km) (calculated from 10-15 Japanese test cycle fuel efficiency values)	146	137	66	124	181	200
Fuel efficiency	Fuel efficiency (10-15 Japanese test cycle) (km/l) (Figure reviewed by Ministry of Land, Infrastructure and Transport)	16.2	17.2	35.5	19.0	13.0	11.8
External vehicle noise	Regulation figures for acceleration noise (dB-A)	76	76	76	76	76	76
	Specification figures for acceleration noise (dB-A)	73	74	73	73	73	75
Exhaust emission levels (2005 Exhaust Emissions Standards) ¹	75% lower than standard levels (SU-LEV)			★★★★			
	50% lower than standard levels (U-LEV)	★★★	★★★		★★★	★★★	★★★
Substances of concern used in parts	Lead (compared to 1996 figure)	Reduced to 1/10 or less	Reduced to 1/3 or less	Reduced to 1/10 or less	Reduced to 1/10 or less	Reduced to 1/10 or less	Reduced to 1/10 or less
	Mercury	Extremely small amount	Extremely small amount	Extremely small amount	Extremely small amount	Extremely small amount	Extremely small amount
	Cadmium	Extremely small amount	Extremely small amount	Extremely small amount	Extremely small amount	Extremely small amount	Extremely small amount
Recycling ²	Parts that use easy-to-recycle materials (TSOP)	Bumpers and interior parts	Bumpers and interior parts	Bumpers and interior parts	Bumpers and interior parts	Bumpers and interior parts	Bumpers and interior parts
	Natural material	○	—	—	—	—	○
	Use of recycled PP	○	○	○	○	○	○
	Soundproofing material made of recycled shredder residue (RSPP)	○	○	○	○	—	○

*In principle, the data above relates to the best-selling grade.

1. Refer to the table on the right for levels of emission gases from passenger vehicles
2. Please see p. 36 - 41 for details

Note: The vehicles listed above do not use CFC12, which is an ozone-depleting substance. Parts in these vehicles also do not use sodium azide, a substance of concern.

*Environmental data for new models and those that undergo complete redesign is available in product catalogs as "Environmental Specifications"

Exhaust Emissions Levels for Gasoline-powered Passenger Vehicles (2005 Standards)

Regulated substances	New mode*	Regulation value	50% lower than FY2005 standards ☆☆☆	75% lower than FY2005 standards ☆☆☆☆
Carbon monoxide CO (g/km)		1.15	←	←
NMHC (g/km)		0.05	0.025	0.013
NOx (g/km)		0.05	0.025	0.013

*New mode: (Value measured in the 10-15 Japanese test cycle) x 0.88 + (Value measured in the 11 Japanese test cycle) x 0.12

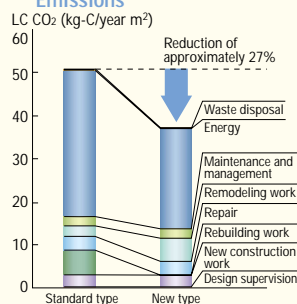
Product Development Using Facilities and Materials with Less Environmental Impact

Technical Center Main Building with Many Environmental Impact-reduction Design Features

In December 2003, Toyota completed its Technical Center Main Building in the Head Office area, that incorporates many environmental impact-reduction design features, such as energy- and resource-conservation measures. The building has 15 floors above ground, a total floor area of 72,865m², and houses approximately 3,000 employees. The 30 special design features adopted for energy conservation and reducing CO₂ emissions include a mechanically-operated balcony for shielding the building from the sun, free cooling systems, an air conditioning system containing a total enthalpy heat exchanger, and a roof garden.

As measured in terms of Life Cycle CO₂ emissions (the amount of CO₂ generated by the building, including during its demolition phase), these measures are expected to reduce CO₂ emissions by approximately 27% compared to conventional buildings. Moreover, Toyota has incorporated environmental impact-reduction design features equivalent to or even greater than those utilized in the Technical Center Main Building into the New Main Building and the Toyoda-Mainichi Redevelopment Building (tentative name) currently under construction.

Comparison of Life Cycle CO₂ Emissions



Based on the "Calculating Method of LCCO₂ for Government Buildings" (1999 version) in the calculation software Guidelines for the Planning of Environment-Friendly Government Building, produced by the Public Buildings Association

Switching to Sulfur-free Clay

Industrial clay, which is essential for designing vehicles, is an oil-based material that is different from ordinary clay. Conventional industrial clay contains approximately 40% sulfur to improve its cutting characteristics, and as a result emits SO_x when incinerated. Although clay can be reused, approximately 10% of it has been disposed of in landfills because of contamination by paints, etc. In cooperation with a clay maker, Toyota has developed sulfur-free clay. As a result, between 3 and 4 tons of clay that used to be disposed of in landfills can now be incinerated. This new clay is being used at Toyota's overseas design centers and affiliated companies within the Toyota Group in Japan. The fact that the specific gravity of the new clay is only 2/3 that of the conventional type is also providing benefits in terms of worker safety and health.



Modeling work using the new clay



Highlight

Toyota Unveils "Eco-VAS" for Environmental Assessment

Summary of Eco-VAS

In order to promote the establishment of comprehensive "prior assessment systems" advocated in the Toyota Environmental Action Plan, Toyota will introduce a new system, called Eco-VAS (Eco-Vehicle Assessment System), based on the concept of life cycle assessment (LCA); implementation of which was begun for major vehicle series with the June 2001 launch of the Estima Hybrid.

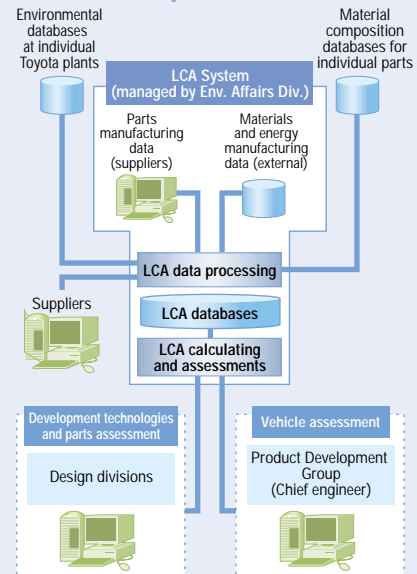
Eco-VAS allows environmental impact assessment of each vehicle series throughout the entire life cycle of the vehicle from production to disposal. Assessment of environmental impact is carried out covering a wide range of items including environmental impact during production processes, fuel efficiency, emissions and noise during vehicle use, the disposal recovery rate, the usage volume of substances of concern, recoverability in the recycling phase, and the volume of hazardous substances used. The key feature of

Eco-VAS is the setting of environmental impact reduction targets for a wide range of evaluation categories by the person responsible for the development of a particular vehicle. Necessary measures to reduce the environmental impact of each vehicle can be devised in the initial stages of development, enabling steady development progress with an eye toward achieving targets and raising a vehicle's overall environmental performance. Eco-VAS is implemented by performing the environmental PDCA cycle, which is conducted during the development process, and the final results of assessments provided as feedback are used as benchmarks when setting environmental goals for next-generation models.

Establishment of LCA as the Base for Eco-VAS

In order to implement LCA, which is a key tool for Eco-VAS, a computer network was established linking the databases necessary for implementing LCA and LCA calculation software to allow the project leader or other persons responsible to access necessary information. The main databases include the environmental databases at individual Toyota plants, parts manufacturing data at leading suppliers, materials and energy manufacturing data (publicly announced figures), and material composition data for individual parts. The computerized database network started operation in August 2004 and will be used for assessing the environmental impact of vehicles that are currently under development. It allows the project leader

LCA Network System



or other persons responsible to access an environmental database from a personal computer, check the status of target achievement, continually confirm results and obtain feedback during the entire development process.

Collaboration with suppliers and other related companies is necessary for the creation of an LCA database concerning parts under development. As a result, Toyota is promoting the linking of its LCA system network with other related companies. By using databases and software and communicating with persons responsible for development when necessary, Toyota will aim to lower environmental impact even further throughout the product lifecycle. Moreover, in order to assess vehicle recovery rates and the amount of usage of substances of concern, Toyota is promoting the development of a system for examining the composition of individual parts.

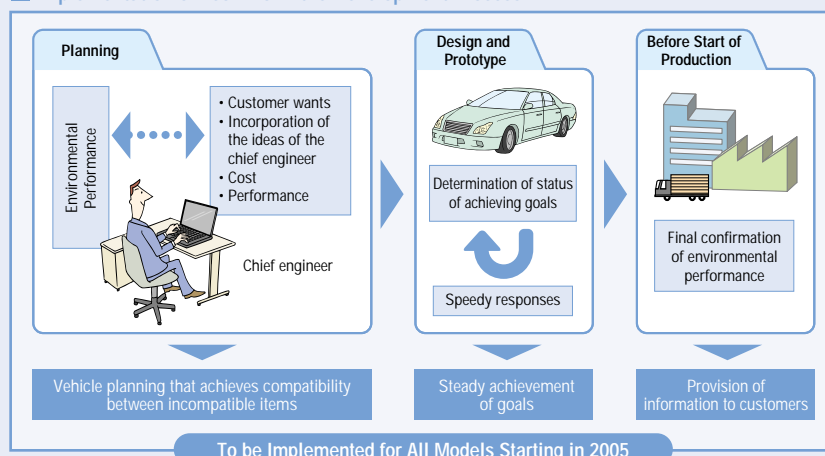
Future Development of Eco-VAS

Systems to implement Eco-VAS in the development process were created in 2003. Trial operation with model vehicle series began in 2004 and it will be implemented in earnest from 2005. Toyota plans to carry out comprehensive environmental impact assessments during the planning and development stage for all newly developed vehicles.

Status of Environmental Management in the Development Process (circles indicate items currently in operation)

Eco-VAS evaluation categories		Development Goals Set	Prior Assessments	
			Commercialization finalized	Final stage
Use stage	Fuel efficiency	○	○	○
	Emissions	○	○	○
	Noise	○	○	○
Disposal stage	Recycling			○
	Substances of concern	○		○
Production to disposal stage	Lifecycle environmental impact (LCA value)			○

Implementation of Eco-VAS in the Development Process





Procurement/Production/Logistics



Yasuhito Yamauchi
Production Environment Committee Chairman

Y. Yamauchi

Yasuhito Yamauchi joined Toyota in 1968 and has gained experience in a wide range of engineering, production engineering and production areas. He became a Managing Director in 1999, while also serving as the chairman of the Plant Production Environmental Subcommittee and the Overseas Production Environmental Subcommittee. He was appointed a Senior Managing Director in 2001 and has been the Chairman of the Production Environment Committee since June 2003.

Toyota achieved its FY2003 goals in each area by taking action based on the Third Toyota Environmental Action Plan. The results of the major initiatives taken by Toyota in FY2003 are as below.

Procurement: Steady increase in the number of suppliers acquiring ISO 14001 certification (up by 22 companies for a total of 447); requested related suppliers to implement responses to the EU ELV Directive and JAMA regulations.

Production: Reduction in CO₂ emissions (down by 2% or 40,000 tons from the previous year); strengthening of activities aimed at zero legal non-compliance, environment-related accidents and complaints; reduction of substances subject to PRTR (down by 3% or 100 tons from the previous year); reduction of VOC emissions (an average of 41g/m² for all lines) and reduction of combustible waste (down by 26% or 4,700 tons from the previous year).

Logistics: Reduction in CO₂ emissions through enhanced transport efficiency (down by 2% or 5,000 tons from the previous year); usage volumes of packaging and wrapping materials remained unchanged from the previous year due to the use of returnable containers, streamlining of operations and change in materials.

Organization Chart (As of March 2004)

Production Environment Committee

Chairman:
Senior Managing Director Yasuhito Yamauchi
Established in 1963
Discusses and determines important issues for environmental preservation in procurement, production and logistics areas, and promotes comprehensive environmental protection measures

Production Environment Technology Subcommittee

Conducts technological development focusing on environmental measures at the pollution source of production equipment and plans measures for equipment

Overseas Production Environmental Subcommittee

Promotes transfer of environmental preservation technology to overseas businesses

Plant Production Environmental Subcommittee

Conducts environmental preservation at all plants and housing works

Environmental Manager by Region (Plant General Manager)

Environmental Preservation Secretariat by Plant

Production Environment Logistics Subcommittee

Promotes reductions in environmental impact caused by logistics

Procurement

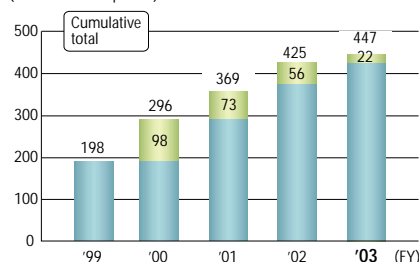
Environmental Initiatives in Cooperation with Suppliers

Promotion of ISO 14001 Certification Acquisition

Toyota asked all of its suppliers of automobile parts and materials to acquire ISO 14001 certification by the end of FY2003. In FY2003, 22 suppliers achieved certification, bringing the total number to 447.

Trend in ISO 14001 Certification of Suppliers

(Number of companies)



*Certification was suggested to approximately 450 suppliers in March 1999

Requests to Suppliers to Respond to the EU ELV Directive and JAMA Regulations

In addition to the EU ELV (End-of-Life Vehicle) Directive, to which Toyota has requested responses from its suppliers since FY2000, the JAMA¹ regulations (Restrictions on the Use of Substances of Concern in New Vehicles) were announced in FY2003.

In response, Toyota held an explanatory meeting on Reduction Policies for Substances of Concern in October 2003 to explain its policy to respond to JAMA regulations by responding to the EU ELV Directive and has requested that parts used in vehicles intended for the Japanese market comply with the EU ELV Directive.

At the Global Suppliers Convention held in February 2004, Toyota reiterated its requests to the executive management of each company and requested that they reinforce environmental management and their efforts to reduce substances of concern.

Input of data into the IMDS (International Material Data System) was completed for 12 vehicle series for the European market in FY2003, but there were some aspects of the input procedure that were difficult, so Toyota is working to raise supplier understanding and establish awareness of the importance of the data input.

1. JAMA:

Japan Automobile Manufacturers Association

Requests for Cooperation with Eco-VAS

Toyota started to acquire data from 27 leading parts suppliers that were involved in the development of the Eco-VAS² system, a prior environmental assessment system that Toyota will introduce. This will allow LCA assessments to be performed on major vehicle parts. Toyota also plans to expand the scope of the system to include electronic components. Explanatory meetings will be held for involved suppliers, environments for the collection of data will be developed jointly, and data collection will begin in FY2004.

2. Eco-VAS:

Eco-Vehicle Assessment System



Please see p. 25 for details on Eco-VAS

Green Purchasing

Toyota achieved 100% green purchasing³ of office supplies and equipment in FY2002. In FY2003, Toyota continued to promote green purchasing with regard to newly purchased items.

3. Green purchasing:

Toyota classifies the buying of items directly related to production as "procurement" and the buying of office-related products and equipment as "purchasing"

Response Plan to the EU ELV Directive and JAMA Regulations

■ JAMA voluntary standards
➡ Toyota switchover plan

Regulated substances		2003	2004	2005	2006	2007	2008
Lead	Europe	➡ In principle prohibited Fuel tanks, etc.	➡	Bulbs, plugs	Electro-deposition coating, O-rings	Pyrotechnic initiators	Free-cutting aluminum
	Japan				No prohibition date as of May 2002: Batteries, solder, etc.	■ 1/10 or less of 1996 level	
Cadmium	Europe	In principle prohibited / Contacts points, etc.	➡		Total ban	■ Total ban	
	Japan						
Mercury	Europe	In principle prohibited *Not used by Toyota in prohibited applications: response completed					
	Japan	No prohibition date specified as of May 2002: HID, displays, meters		■ Prohibited except in HID, displays, meters			
Hexavalent chromium	Europe	All uses prohibited, except as an anti-corrosion agent	➡			Total ban	
	Japan						■ Total ban



Production

Changes in FY2005 Goals

In the production area, Toyota achieved the FY2005 goals for reduction of CO₂ emissions, reduction of the volume of waste generated, and conservation of water resources, and is close to achieving the goals set for substances subject to PRTR. Toyota is now taking action to achieve new "challenge" goals. The high goals of reducing CO₂ emissions to 1.55 million tons or less by the end of FY2005 and discharge of substances subject to PRTR to 2,000 tons or less were set and action intensified. Toyota also sets goals for reduction of waste and

conservation of water resources every fiscal year, and continues to promote improvement activities. Based on these activities, goals for 2010 are currently under consideration.

Volume of Resources Input and Volume of Substances Released into the Environment

In order to create a recycling-oriented society and reduce environmental risks, Toyota considers it extremely important to efficiently utilize resources and reduce the volume of substances of concern released.

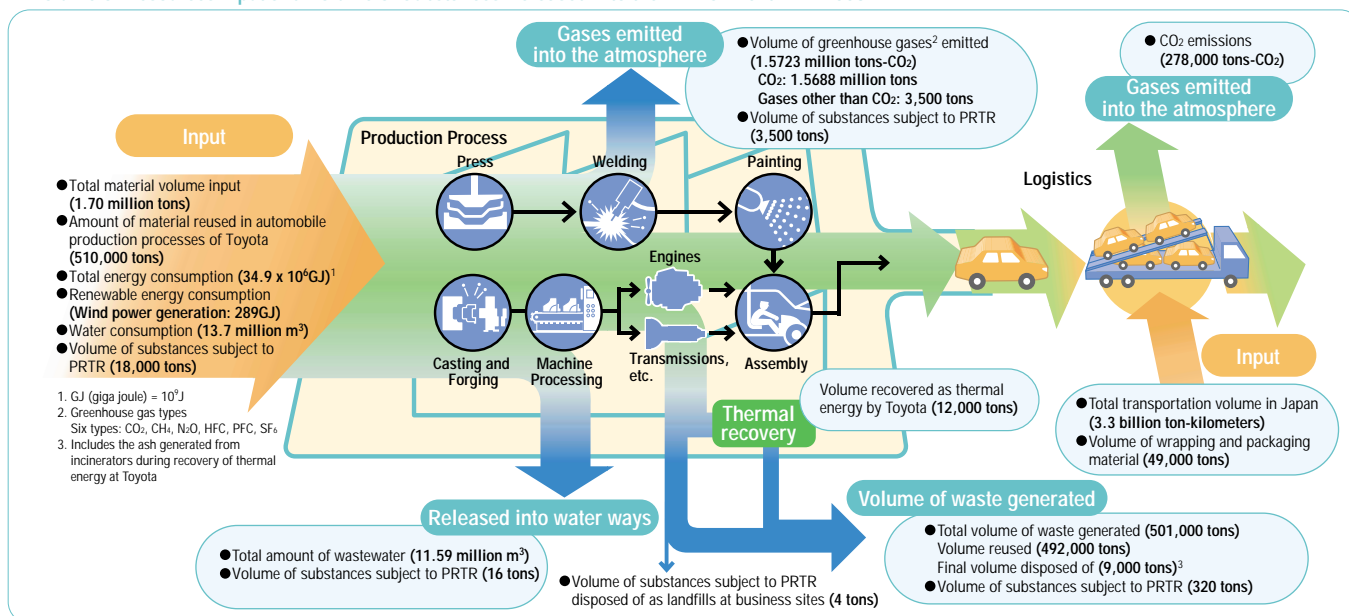
The figure below shows the total volume of resources and energy used during production and logistics at Toyota in FY2003

and the total volume of substances released.

A total of 1.70 million tons of raw materials and supplementary materials, 34.9 x 10⁶GJ of energy in the form of electricity and fuel etc., and 13.7 million cubic meters of water, were used at Toyota. 1.57 million tons-CO₂ of greenhouse gases and 11.59 million cubic meters of water were released into the atmosphere and waterways respectively. Of the total volume of waste generated, 492,000 tons were reused as recyclable resources in the form of raw material for cement, and 9,000 tons were disposed of in landfills.

In logistics, CO₂ emissions during the transport of 3.3 billion ton-kilometers of completely built units and parts amounted to 278,000 tons-CO₂.

Volume of Resources Input and Volume of Substances Released into the Environment in FY2003



Production Environmental Management System

FY2003 Goals

- Promote preventive measures for soil and groundwater contamination
- Expansion of best practices to prevent non-compliance/complaints ("near-miss" accidents) of other plants

Internal Audits

As was done last fiscal year, in order to increase the effectiveness of its environmental management system, and to prevent issues from becoming delayed, follow-up audits were conducted three to six months after main audits were performed. In FY2003, Toyota focused on the prevention of soil and groundwater contamination, audits of and guidance to waste collection and removal companies, and expansion of information concerning non-compliance/

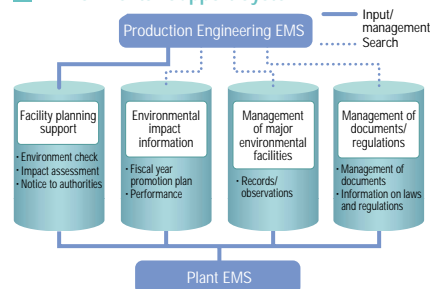
complaints (including "near-miss" accidents), and the status of each was confirmed on-site and through documentation.

Company-wide Introduction of Environmental Support System

An Environmental Support System using information technology was constructed and introduced company-wide to make possible sharing of environmental information and increase the efficiency of day-to-day management. The system consists of the following functions: (1) facility planning support (notice to the authorities concerning facilities and assessment of environmental impact); (2) environmental impact information (grasping actual values); (3) management of major environmental facilities (management of records and observational data); and (4) management of environmental documents. By sharing environmental information regarding facility planning from the

Production Engineering Division and the status of plant facility operation and management, it is possible to further reduce environmental impact and risks. Also, management of environmental documents has simplified work-intensive tasks such as maintaining records of revisions and distribution of documents by putting them into electronic format.

Environmental Support System



Initiatives to Reduce Environmental Risk

Towards Zero Legal Non-compliance, Environmental Accidents and Complaints

Proactive Prevention of Complaints

Toyota has consistently implemented measures concerning facilities and strengthened control to prevent complaints from occurring.

In FY2003, in addition to on-going activities, items with a high potential for generating complaints at plants were determined and a counter-measures plan up to FY2004 was created. In FY2003, four measures concerning noise and one measure concerning offensive odors were implemented at facilities. In FY2004, Toyota plans to continue implementing these measures focusing on noise reduction.

Strict Compliance with Legal Standards

In order to ensure strict compliance with legal standards Toyota has implemented measures concerning facilities and reinforced maintenance and management. Starting in FY2003, in addition to on-going activities, voluntary standards were set at 20% stricter levels than legal standards for all applicable facilities and day-to-day management is being carried out with these standards as maximum limits.

When a possibility of exceeding the voluntary standards is discovered, control is strengthened and measures concerning facilities are implemented in addition to day-to-day management responses to ensure that the legal standards are not exceeded. In FY2004, to ensure that these measures to strengthen management take root Toyota will conduct continuous follow-ups, including plant EMS audits.

Proactive Prevention Through Expansion of Best Practices

Toyota is providing information to all plants concerning case studies of non-compliance, complaints, and "near-miss" accidents during a three-year plan covering FY2002 to FY2004 in order to prevent reoccurrences of similar events.

Measures to expand information regarding 59 facilities across all Toyota plants were completed in FY2002 and regarding 1,121 facilities across all Toyota plants in FY2003. In FY2004, the final year of the three-year plan, Toyota will implement measures regarding the remaining 228 facilities.

Thorough Implementation of Preventive Measures

Results of the Prior Assessment System for Environmental Preservation

When introducing new raw materials or supplementary materials, and when installing new facilities or expanding existing ones, Toyota assesses the environmental impact in terms of air and water quality, vibration, noise, waste and chemical substances, based on its Prior Assessment System for Environmental Preservation. The assessment results are then incorporated into the plans, thus ensuring thorough implementation of preventive measures.

In FY2003, prior assessments were conducted on 198 items, the same as in FY2002; however, the number of assessments done on new raw materials associated with the development of fuel cell hybrid vehicles, the switch to supplementary materials as a result of activities to reduce waste, and on noise caused by the expansion of facilities increased.

Inspections by Environmental Managers (Plant General Managers)

In conjunction with the Global Environment Month held within the company every June, Toyota had its plant general managers conduct inspections of the status of implementation of environmental preservation activities at all plants and housing works.

In FY2003, the inspections focused on activities aimed at zero environmental accidents and complaints, and ascertained the implementation status concerning such things as measures to prevent the recurrence of previous accidents and the thorough implementation of environmental management by contracted companies working on Toyota premises.



Inspection by the Plant General Manager at the Teiho Plant

Reporting and Storing Devices Containing PCB

In FY2003, Toyota reported to the government on its storage of the same number of transformers and condensers that contain PCB (polychlorinated biphenyl) as in FY2002. Toyota continues to safely store these devices in accordance with the standards specified by law to prevent leakage and soil contamination.

Soil and Groundwater-related Measures

Toyota completed the soil remediation measures that it had been carrying out at six plants. In terms of groundwater contamination prevention, Toyota completed an effluent-prevention measure in 1997 which involved the digging of barrier-type wells and has continued groundwater remediation using pump and treat technology. Toyota reports levels of trichloroethylene to the government, as well as to local councils in the surrounding communities.

Trichloroethylene Measurement Values in FY2003

Environmental standard: 0.03 Unit mg/l

Plant	Levels in groundwater
Honsha	Less than 0.002 - 1.320
Motomachi	Less than 0.002 - 0.612
Kamigo	Less than 0.002 - 0.565
Takaoka	Less than 0.002 - 0.812
Miyoshi	Less than 0.002 - 1.560
Tsutsumi	Less than 0.002 - 0.735

*Measurements are taken at all plants and housing business sites

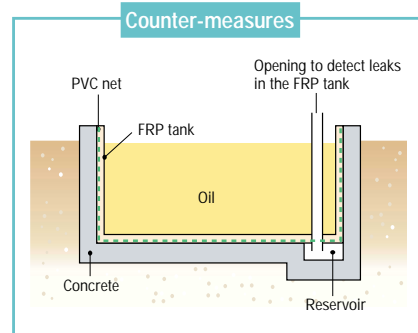
*Has not been detected in plants other than those listed (At the three housing business sites, measurements began in 1997)

*The level has a range since each plant includes multiple measurement points

Promotion of Measures to Prevent Soil and Groundwater Contamination by Oil Leakage

In FY2000, Toyota completed measures to prevent oil leakage from underground tanks by using dual-walled tanks and relocating pipes above ground. In 2001, Toyota began a four-year plan to prevent oil leakage by adopting dual-walled structures for underground pits, storage tanks and oil grooves, and making it possible to see the inside of the tanks (*mieruka*) so they can be monitored on a daily basis. Toyota completed this work on 261 tanks in FY2001, 340 tanks in FY2002, and 257 tanks in FY2003, reaching about 90% of all such tanks by the end of FY2003. Thorough management on a daily basis is carried out and the implementation status is confirmed through the plant EMS.

Best Practice to Prevent Oil Leakage from Storage Tanks





Communication with Surrounding Communities

Toyota holds community council meetings once a year to disclose information regarding its environmental initiatives and engages in dialogs with people in the communities surrounding its plants and housing works. In FY2003, Toyota held community council meetings successively between August and December at all of its plants and housing works. At these community council meetings, Toyota explained its methods for managing chemical substances, disclosed substance release data, reported on environmental conditions around the plants, and exchanged opinions.

Some local community members expressed their clear understanding of the proactive initiatives Toyota is taking, while others had queries, such as asking for Toyota's advice on how to improve the sorting of trash at local garbage pick-up sites based on the thorough sorting methods employed by Toyota.



Community council meeting at the Kinuura Plant

Prevention of Global Warming

FY2003 Goal

Reduce total CO₂ emissions volume per year to 1.61 million tons or less

Actions to Conserve Electricity during Non-operation of Lines

In order to reduce CO₂ emissions, Toyota established goals for each plant and each production line, and implemented energy conservation measures. Key measures taken to reduce energy loss include the introduction of energy conserving technology into various facilities, consolidation of production lines, and a shortening of processes in newly established lines.

In the Machining Division at the Myochi Plant, employees focused on stopping equipment during non-operation of the lines, with the goal of reducing energy costs by 20%. The plant switched from the conventional method of specifying an energy consumption target for each department to including energy conservation in cost reduction goals, determining topics for each production line and aiming to achieve streamlined production with no energy loss.

The Myochi Plant also instituted the concept of *mieruka* (visualization), which utilizes a management board showing energy consumption and costs, to increase employee awareness about reducing electrical power consumption by ensuring that equipment is turned off when not in operation.

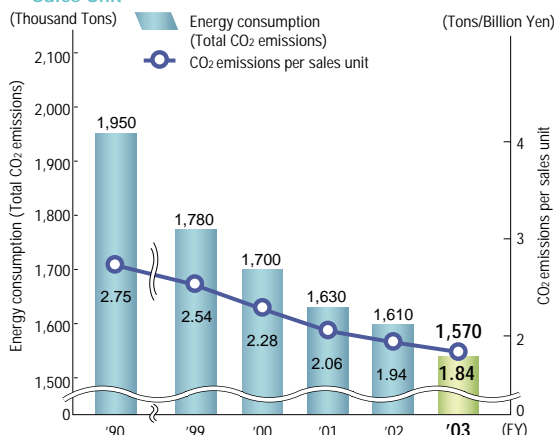
Purchase of Green Power

Toyota concluded a Green Power Certification System agreement with Japan Natural Energy Company Limited. Based on this subcontracting agreement Toyota continues to use 2 million kWh of wind-generated power each year.

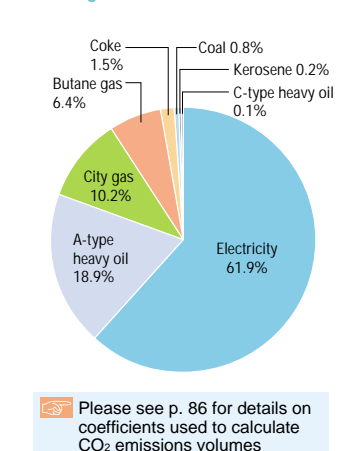


Management board that promotes *mieruka*

Energy Consumption at Toyota's Automobile Production Process and CO₂ Emissions per Sales Unit



Component Ratio of Energy Used during Automobile Production



Energy Conservation Through the Development of an Innovative Compact Hydroforming Machine

Hydroforming is a new technology that can mold multiple parts together and is effective in conserving resources by improving the fuel efficiency of cars through weight reduction of parts and by increasing material yield.

Because of its large size, a conventional hydroforming machine requires a tall plant building. Therefore, based on its unique concept, Toyota developed an innovative hydroforming machine that is only about 1/10 the size of a conventional machine, working jointly with Nippon Steel Corporation. The newly developed machine achieves significant energy savings during parts processing. Moreover, because the new machine can be integrated into a production line, parts transfer between lines is no longer required, resulting in improved productivity.

Developed Technology

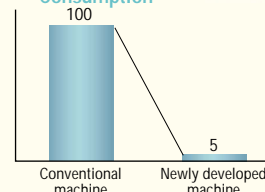
Conventional machine



Newly developed machine



Comparison of Electrical Energy Consumption



Reducing Substances of Concern

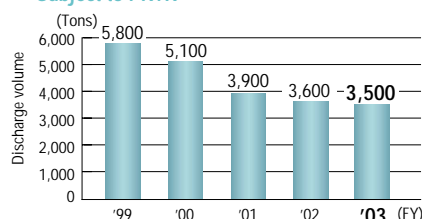
FY2003 Goals

- Reduce yearly discharge volumes of toluene and xylene (substances subject to PRTR) to 3,400 tons or less
- Body painting process: Reduce VOC emissions to an average of 41g/m² or less for all lines

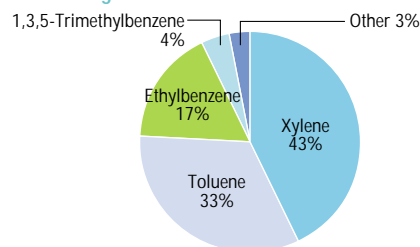
Reducing the Volume of Substances Subject to PRTR

Toluene, xylene, ethylbenzene, and 1,3,5-trimethylbenzene, which are found in thinners used as purge solvents in painting processes, together account for 97% of the total volume of substances subject to PRTR that are discharged at Toyota. Toyota has been taking various steps to reduce the usage of these substances, including introducing water-borne paints switching to paints containing less toluene, xylene, ethylbenzene, and 1,3,5-trimethylbenzene, reducing purge solvents usage and increasing its recovery rate. To reduce purge solvents usage, Toyota switched from a spray method to a wiping method that uses rags. Through these actions, Toyota reduced its usage of substances subject to PRTR by 3% from the previous year to 3,500 tons.

Trend in Discharge Volumes of Substances Subject to PRTR



Breakdown of Materials Subject to PRTR Discharged



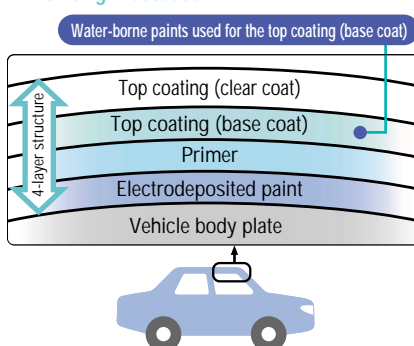
Reducing VOC Emissions

Thinners found in paint solvents used in automobile painting processes are the main source of VOC emissions. Toyota has been promoting the introduction of water-borne paints as a measure to reduce VOC emissions. In FY2003, Toyota promoted a switch to water-borne paints for the top coating (base coat) on Painting Lines 1 and

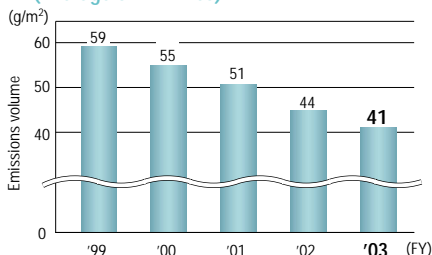
2 of the Tsutsumi Plant. In addition, as a result of taking other measures such as improving the recovery rate of purge solvents, average VOC emissions on all body painting lines were reduced by 7% from the previous year to 41g/m², thereby achieving the goal.

Toyota plans to gradually switch to water-borne paints for the top coating (base coat) at painting lines of other plants as well.

Switch to Water-borne Paints in Automobile Painting Processes



Trend in VOC Emissions Volume (Average of All Lines)

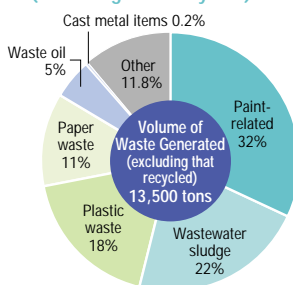


Reducing Waste

FY2003 Goal

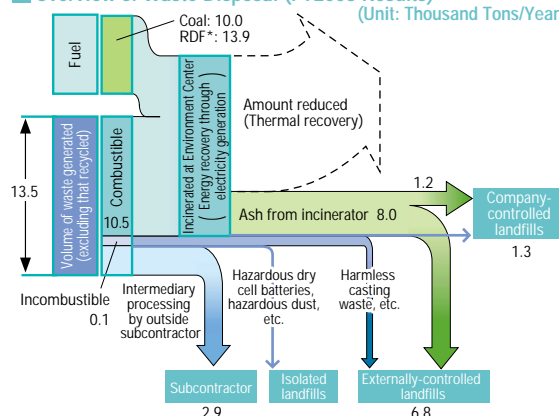
- Reduce the generation of combustible waste to 17,000 tons or less (a 73% reduction from 1990)

Breakdown of the Volume of Waste Generated in FY2003 (Excluding that Recycled)



Overview of Waste Disposal (FY2003 Results)

(Unit: Thousand Tons/Year)



*The numbers have been rounded to the first decimal place

*The details of non-combustible waste are not included because they are minuscule

*RDF (Refuse Derived Fuel): Solid fuel derived from waste

Achieving Zero Landfill Waste throughout the Entire Company, Including Non-production Bases

All Toyota production plants have continued to maintain zero landfill waste,* a goal first achieved in December 2000.

In FY2003, Toyota took actions toward achieving zero landfill waste at its 14 non-production sites, such as its production engineering divisions, logistics centers, the Head Office administration building, and hospitals. By taking steps such as sorting the materials that are generated by production engineering divisions containing metals, glass, and, plastic for example, Toyota achieved zero landfill waste at its 14 non-production bases, in December.

*Zero landfill waste:

A reduction in landfill waste generated directly by plants to less than 5% of the 1995 level

Reducing the Volume of Waste Generated

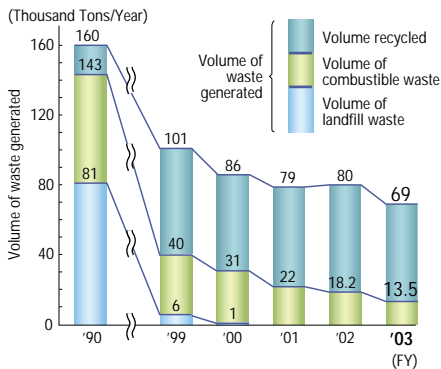
Until FY2002, Toyota had been focusing on reducing combustible waste and landfill waste. In FY2003, Toyota switched its focus to reducing the total volume of waste generated, including the volume that must be recycled. For example, Toyota was able to reduce the volume of grinding scrap generated from the machining processes at the Shimoyama, Kamigo, Kinuura, Tahara, and Myochi Plants, by removing oil and moisture from the scrap and solidifying it, and was able to sell 1,700 tons of the grinding scrap a year.

Toyota also consolidated its casting lines, thus reducing the volume of dust collected from casting processes by 2,000 tons a year. Furthermore, Toyota sorts scrap paper completely and reduced its volume by 2,600 tons a year, which includes the volume that is sold.

Please see p. 32 for the dehydration and solidification of machining scrap



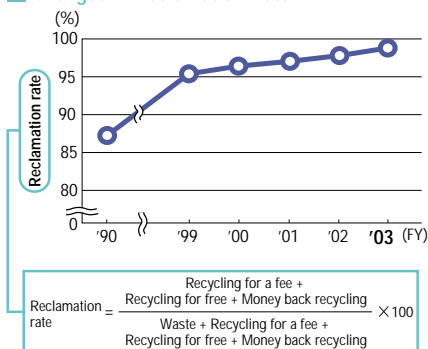
Volume of Waste Generated



Waste Reduction with Consideration to Environmental Impact

When selecting a recycling method for a waste category, the impact on the environment of the CO₂ that will be generated during disposal must be taken into consideration. Therefore, Toyota individually calculated the volume of CO₂ that would be generated during the disposal of waste oil, paint scum, sludge, waste plastic, paper waste, etc., and selected the methods that generate the least amounts of CO₂.

Changes in Reclamation Rate



Initiatives to Conserve Resources

FY2003 Goals

- Reduce usage of primary raw materials by 14,000 tons or more
- Limit usage of foundry sand to 29,400 tons or less
- Limit usage of oils and fats to 12,700kl or less

As for primary raw materials, Toyota implemented various measures to reduce resource loss, such as improving the yield in each production process, reducing the number of defective pieces, reducing the number of parts required, and reducing the required machining by integrating parts or redesigning parts shapes.

Toyota reduced its usage of foundry sand by shifting to the use of an aluminum engine block in the casting process and consolidating production, and also implemented a measure to reuse the sand by separating out aluminum fragments.

With regard to reducing the usage of oils and fats, Toyota implemented various measures such as changing some of the processes to dry machining processes to eliminate the need for oils in the first place, reducing the volume of oil necessary for removing chips by using chip dollies to recover oils, and strengthening daily management to reduce oil leakage through early detection of leaks. As a result, Toyota used 28,900 tons of foundry sand, 12,000kl of oils and fats and reduced its primary raw material usage by 16,000 tons, thus achieving its FY2003 goals.

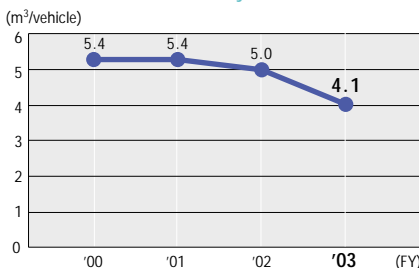
Conserving Water Resources

FY2003 Goal

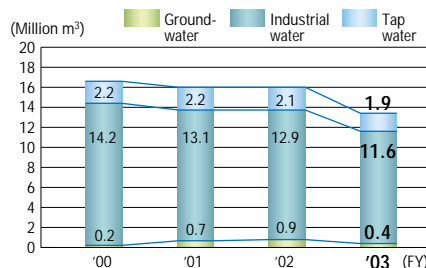
- Reduce water consumption in vehicle assembly plants to 4.9m³ or less per vehicle

Since large quantities of water are used in cleaning vehicle bodies in the painting process, Toyota is promoting activities to reduce water consumption focusing on the four plants that conduct vehicle painting. In FY2003, Toyota proceeded with such measures as eliminating the washing process through improvements in painting quality, preventing leaks, and reusing water. As a result, Toyota succeeded in reducing water consumption to 4.1m³/vehicle, achieving its goal.

Trend in Water Consumption Per Vehicle In Automobile Assembly Plants



Trend in Total Water Consumption at Vehicle Production Plants

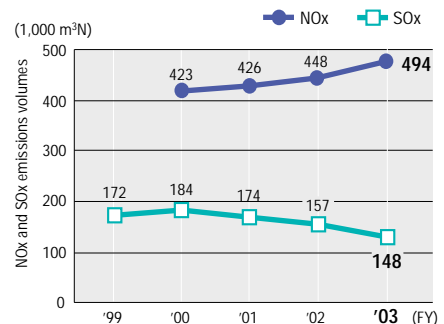


Air and Water Quality Data

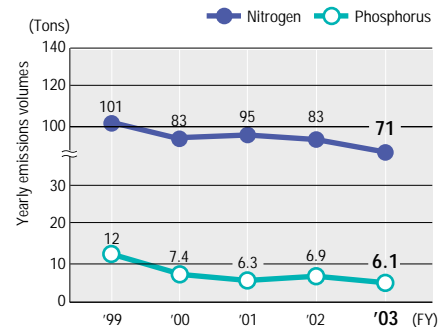
In data accumulated by Toyota on air quality, emissions of SO_x (sulfur oxides) continued to decrease, while an increase was seen in NO_x (nitrogen oxides) levels. This is attributed to an increase in usage volumes of fossil fuels following the introduction of cogeneration systems.

With regard to water quality data, nitrogen, phosphorus and COD whose aggregate levels in waterways are regulated, all continue to be at levels that are only 10 to 40% of those allowed by regulations.

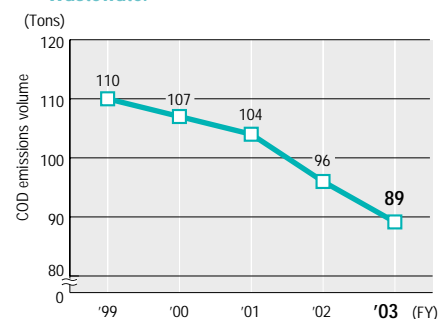
Trends in Volumes of Nitrogen Oxides and Sulfur Oxides Emissions



Trends in Volumes of Nitrogen and Phosphorus Emissions Included in Wastewater



Trend in Volume of COD Included in Wastewater



Shimoyama Plant

Measures to Reduce Oils and Fats Characteristic of a Machining Plant and Resource Recycling Action

Plant Overview and Location

The Shimoyama Plant is located in the countryside in Miyoshi-cho, Nishikamogun, in Aichi Prefecture, with a total site area of 497,000m². This machining plant assembles engines, superchargers, and exhaust system parts focusing on processes such as cutting and grinding. The Shimoyama Plant uses a wide variety of oils and fats, and it has been promoting the implementation of environmental measures with emphasis on preventing soil and groundwater contamination caused by oil leaks and reducing the volume of oils and fats used.

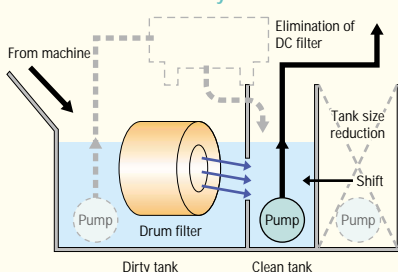
Prevention of Soil and Groundwater Contamination through Measures Concerning Facilities

Toyota has been implementing soil and groundwater contamination prevention measures on a company-wide basis according to a four-year plan that lasts through FY2004, for the approximately 80 oil tanks located inside its plants. These measures include the use of dual-walled reservoirs, and the installation of inspection windows and level gauges to enable careful daily monitoring.

At the Shimoyama Plant, a malfunction in the central coolant filter, which supplies cutting lubricant, caused a fluid spill on the plant floor. To prevent such incidents from causing soil and groundwater contamination, the plant switched to a new filtering method that directly accepts fluids, thereby eliminating the use of a pump.

Reduction of the liquid-feeding pressure implemented to prevent damage to the miniature central coolant system also reduced leaks and spattering from the machining equipment. As a side benefit, the Shimoyama Plant also achieves a reduction in energy consumption by 2,800MWh a year.

■ Elimination of the Use of a Pump from the Central Coolant System



Explaining soil and groundwater contamination prevention measures to the Plant General Manager

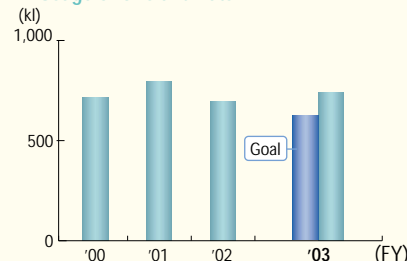
Reducing Usage of Oils and Fats by Improvements at the Source

Although Toyota's company-wide FY2005 goal for reduction in usage of oil and fats is 30% of the level in FY1999, the Shimoyama Plant has been taking various actions with the goal of reducing levels by 50%. In FY2003, the plant set a goal of 25% reduction from the FY2001 level to 624kl, and promoted measures to achieve it.

Some of the major steps taken include: switching to a long-life coolant (synthetic) thus eliminating the need for coolant change, recovery of hydraulic fluids, and switching the fluid change timing for the rinsing equipment from a regular schedule to an as-needed basis. However, because the Shimoyama Plant's production volume increased by 7% from the original plan, the plant was not able to achieve its goal, with total usage of oils and fats reaching 740kl.

The Shimoyama Plant plans to work on achieving its future goals by, for example, effectively utilizing waste oils and developing long-life rinsing fluids.

■ Usage of Oils and Fats

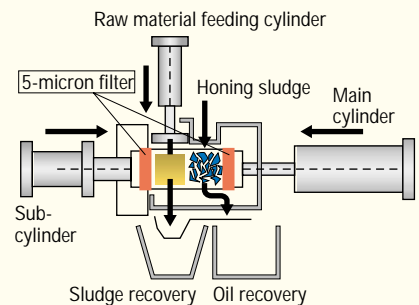


Reducing Waste Using Newly Developed Honing Sludge De-oiling System

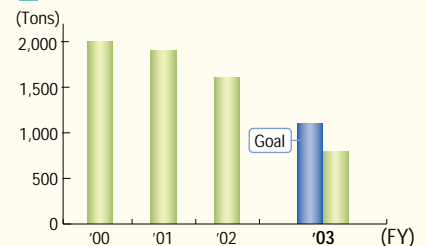
In FY2002, the total volume of waste generated during the Shimoyama Plant's production processes amounted to 1,600 tons. This comprised of 670 tons of grinding

scrap and 70 tons of honing oil sludge. The plant used to have these materials recycled for a fee. However, in FY2003, the plant succeeded in dehydrating the grinding scrap internally and then selling it. Furthermore, the Shimoyama Plant developed a patented de-oiling system, jointly with Mori Iron Works Co., Ltd., and now sells de-oiled iron sludge as a resource and reuses the recovered oil. As a result, the volume of waste generated in FY2003 was only 800 tons, a significant improvement over the goal of 1,100 tons.

■ Honing Sludge De-oiling System



■ Volume of Waste Generated



First Plant-wide Complete Weekend Power Shutdown

Since 2000, the Shimoyama Plant has been working on shutting down all power when no operation is taking place. By switching safety systems, which must have power at all times, to on-site generators, the plant was able to shut down power at night on Saturdays. The luminosity and number of ceiling lights was also reduced according to the availability of natural light. Power consumption data is provided to each production line to check the actual usage, making it easy to identify the causes of abnormalities if they occur and raising employee awareness about energy conservation.



Environmental data on all 18 sites and the Environmental Center (energy recovery plant), similar to that below, is available at the following website: <http://www.toyota.co.jp/en/envrep04/plantdata>



● Plant Overview ●

■ Location:	1, Shimoyama, Uchikoshi, Miyoshi-cho, Nishikamo-gun, Aichi Prefecture		
■ Number of employees:	1,600		
■ Start of operations:	March 1975		
■ Major products:	Engines (ZZ, AZ, G, L type), superchargers, exhaust parts		
■ Site area:	500,000 m ²	■ Building area:	220,000 m ²
■ ISO 14001 certification:	January 1999		



Shokichi Yasukawa
Environmental Manager
Managing Officer
Plant General Manager
(Currently Executive Vice President,
Toyota Machine Works, Ltd.)

1 Activities in FY2003

The Shimoyama Plant is located in a quiet countryside surrounded by a natural environment rich in greenery. To maintain harmony with its surroundings, many flowers and trees have been planted inside the plant's grounds, making it an environmentally considerate plant. The plant has also been actively engaged in environment-preservation activities. For example, it used to pay to have the grinding scrap generated from its machining processes recycled. However, in FY2003, the Shimoyama Plant became the first Toyota plant to separate the grinding scrap into iron, oils, and moisture, reclaiming 70 tons per month of iron and 500 liters per month of oils. The Shimoyama Plant considers communication with people in the local communities important and works to promote openness in management. It is involved in the beautification of the area surrounding the plant, holds community council meetings to help people in the surrounding communities understand its environmental initiatives, sponsors community-wide summer festivals, and gives plant tours to family members. Next year will mark the 30th anniversary of the start of operation of the Shimoyama Plant, and it will continue taking environment preservation actions in order to create even more goodwill between the plant and the local community.

2 Environment-related Accidents, Lawsuits, etc.

■ None

3 Environmental Data

Air Pollution Data

(Conforming to the Air Pollution Control Law and Prefectural Ordinances)

Substance	Equipment	Control value ¹	Actual measurement ²
NOx	Boiler	120	37
		144	30
	Gus turbine	50	43
PM	Boiler	0.1	0.0009
		0.3	0.1
	Gus turbine	0.05	0.001
SOx	(Area-wide total pollutant control)	11.5	0

1. The control values are shown in ppm for NOx, g/m³N for PM, and m³N/hr for SOx. The SOx item must follow the area-wide total pollutant control stipulated in Aichi Prefectural Ordinances.
2. The actual measurements of NOx and PM refer to maximum values with respect to the control values for each particular target equipment

Water Pollution Data

(Conforming to the Water Pollution Prevention Law and Prefectural Ordinances)

Substance	Control value	Actual measurement		
		Maximum	Minimum	Average
Water discharged		2,100	940	1,200
pH*	5.8 - 8.6	7.8	6.2	6.9
BOD*	25 (20)	6.6	1.1	2.4
COD*	—	11.1	4.5	6.8
SS*	30 (20)	6.8	0.4	1.6
Oil	5	0.8	Less than 0.1	0.1
Copper	1	Less than 0.01	Less than 0.01	Less than 0.01
Fluorine	8	0.5	Less than 0.1	0.2
Zinc	5	0.3	0.01	0.05
Soluble iron	5	0.2	Less than 0.05	0.02
Soluble manganese	5	0.4	0.1	0.2
Total nitrogen	15	9.5	2.8	7.0
Total phosphorus	2	0.8	0.1	0.3

*Note 1. The control values for BOD and SS show the highest value (daily average)

*Note 2. Discharged water volume unit: m³/day

*Note 3. All figures are shown in mg/l, except for the pH item

*Note 4. There are some other control parameters whose actual measurements are below the detectable level. They include the following: phenol, cadmium, cyanide, organophosphorus compound, lead, 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.

Note that the abbreviations mean the following.

*pH: Hydrogen ion concentration *BOD: Biochemical oxygen demand

*COD: Chemical oxygen demand *SS: Concentration of suspended solids in water

Substances Subject to PRTR

Substance	Volume handled	Volume released			Waste	Volume recycled	Volume removed	Consumption volume	Volume generated
		Air	Water area	Landfill within site					
Ethylbenzene	3,201	1	0	0	0	0	0	3,200	0
Ethylene glycol	40,037	1	0	0	40,000	0	0	36	0
Xylene	22,300	3,300	0	0	0	0	0	19,000	0
Chromium and chromium (III) compounds	17,800	0	0	0	1,800	0	0	16,000	0
1,3,5-Trimethylbenzene	1,202	2	0	0	0	0	0	1,200	0
Toluene	69,700	7,700	0	0	0	0	0	62,000	0
Benzene	1,301	1	0	0	0	0	0	1,300	0
Manganese and its compounds	1,067	0	87	0	260	0	0	720	0

*Unit: kg/year

*Volume removed: The volume of substances that are incinerated, neutralized, broken down, or changed to other substances in the particular plant

*Consumption volume: The volume of substances that are changed to other substances through chemical reactions, or are contained in or accompanied with products and transported outside the particular plant

*Volume generated: The volume of substances that is generated unintentionally

*Landfill within site: The volume of substances disposed of as landfill waste on the particular site

Logistics

The area of logistics involves transporting completed vehicles and vehicle parts throughout Japan and overseas. In FY2003, Toyota's transport volume in Japan was approximately 3.3 billion ton-kilometers (ton times kilometers). Toyota promoted initiatives to achieve the action goals established by the Production Environment Logistics Subcommittee and proceeded with improvement activities.

Enhanced Environmental Management

The Production Environment Logistics Subcommittee (established in April 2001) defines goals for reducing CO₂ emissions, the total usage volume of packaging and wrapping materials, and unit requirements, and is engaged in these reduction activities. In FY2003, the Subcommittee promoted action to assess CO₂ emissions volumes at Toyota's overseas affiliates and strengthened its management organization in order to provide support to overseas affiliates' target management activities.

Reduction Activities

Reducing CO₂ Emissions

FY2003 Goal

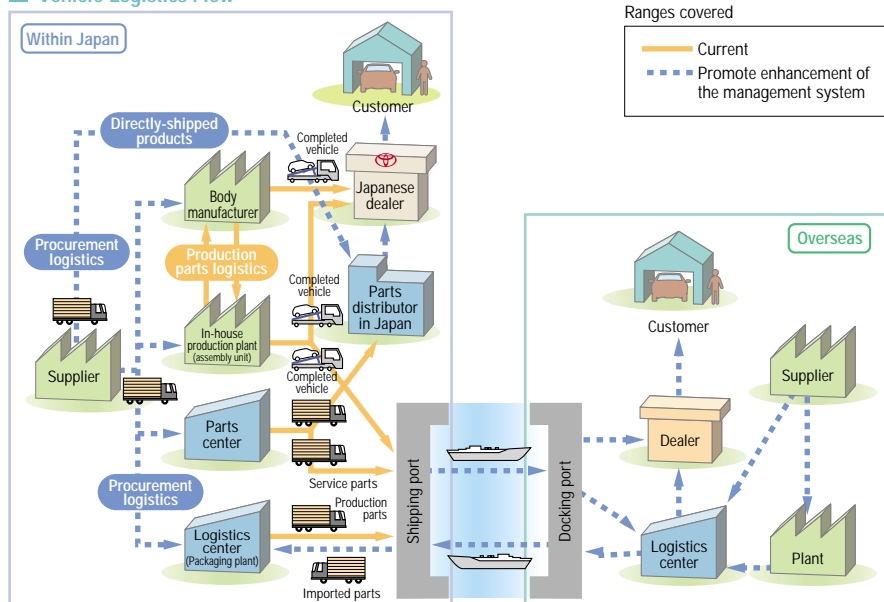
- Reduce CO₂ emissions to 259,000 tons or less (reduce CO₂ emissions per unit by 3% from FY2002 results)

Toyota's initiatives to reduce total CO₂ emissions during the transport of completed vehicles, production parts, and service parts focused on two main points — the shift to a mode of transport with low CO₂ emissions per unit; and reduction of total transportation distance. As a result, CO₂ emissions decreased by 5,000 tons from FY2002. However, the number of completed vehicles that had to be transported increased by approximately 180,000 units and truck-based transport temporarily increased because the production locations for some vehicle series were changed. As a result, total CO₂ emissions reached 278,000 tons. In terms of CO₂ emissions per unit, Toyota achieved the goal of a 3.1% reduction from the FY2002 level.

(1) Modal shift and fuel efficiency improvement activities

Toyota began shifting the mode of transport from trucks to ships, and promoted activities to improve fuel efficiency in transport by trailer trucks. Toyota installed digital tachometers in the trailers to assess daily fuel efficiency status and raised

Vehicle Logistics Flow



drivers' awareness through a seminar entitled Promoting Eco Driving. Through these measures, Toyota realized a 3.4% improvement in fuel efficiency over FY2002.

With the increasing shift to marine transport, Toyota has been working with transport companies on measures to prevent marine pollution during transport.

(2) Reduction of total transportation distance

In activities to reduce the total transportation distance, Toyota concentrated

on reducing the number of dispatches and the distances traveled, and implemented a wide range of measures, such as increased use of joint transportation, reviews of travel routes, improvements in loading rates, and improvements in packing rates. In the area of production parts logistics, Toyota reviewed the travel route between Tsutsumi and Tobishima and improved loading efficiency, thus reducing the number of dispatches from 57 involving 16 vehicles to 53 involving 14 vehicles.

Results of CO₂ Reduction Actions

Group	Topic	Details	Reduction in CO ₂
Logistics for production parts	Shift to marine transport	Switched to marine transport beginning in November 2003, for the production volume transferred from Kyushu to Iwate	700 tons/year
	Improvements in fuel efficiency	Daily checks of fuel efficiency of trailer-trucks using digital tachometers to raise drivers' awareness	4,200 tons/year
	Shift to marine transport	Switched to marine transport for vehicle shipments from Hino Motors, Ltd. Hamura Plant to Australia, and from Kanto Auto Works, Ltd. Iwate Plant to Shimane, Kyoto, and Hokuriku	1,100 tons/year
Logistics for completed vehicles	Improvements in loading efficiency	Reviewed the Tsutsumi-Tobishima route and improved loading efficiency, thus reducing the number of dispatches from 57 involving 16 vehicles to 53 involving 14 vehicles	680 tons/year
	Changes in travel routes	Reduction of trailer travel distance from 32km to 23km by changing the loading point of vehicles bound for Kyushu and Shikoku from Kinuura Port to Nagoya Port	200 tons/year
	Improvements in loading efficiency	Loading efficiency improvement at the Haruhi Truck Terminal, use of joint transportation between Kamigo Logistics Center and Hino, etc	240 tons/year
Logistics for service parts	Improvements in packing rates	Redesigning of the bumper-packing form specification	160 tons/year
	Other		4,720 tons/year
Total			12,000 tons/year



Reducing Packaging and Wrapping Materials

FY2003 Goal

- Reduce usage to 47,000 tons or less (reduce unit requirements by 3% from FY2002 results)

Toyota, together with suppliers and related departments, made efforts to reduce the usage of packaging and wrapping materials of parts by reviewing initiatives including 3R activities, simplification, and change of materials, but the impact of an increase in transport volume could not be absorbed and the actual usage volume reached 49,000 tons. Unit requirements, however, were reduced by 3% from FY2002, thus achieving the FY2003 goal.

(1) 3R activities

3R activities are environmental initiatives that promote the increased use of returnable containers, as well as reuse and recycling. Toyota expanded the reuse of corrugated cardboard boxes and the use of returnable containers for transport.

(2) Simplification

By asking "Can we eliminate it?", "Can we reduce it?", and "Can we modify it?", Toyota eliminated the wooden and steel boxes that it had been using for shipments to China (Beijing and Harbin), and began packaging exterior parts as they are in their individual wrappings. Usage of packaging and wrapping materials were reduced by 170 tons a year.

(3) Change of materials and the creation of a quick-reference table showing materials used

Toyota reduced packaging and wrapping material usage by approximately 85 tons a year by introducing the Quick Reference Table for Packaging and Wrapping Materials. The table enables operators to select the optimum wrapping materials without jeopardizing quality by taking into consideration the materials parts are made of and the hardness of their surface treatments. In addition, by switching the cores for the valve spring seats bound for North America and the U.K. from PVC sticks to paper tubes, Toyota reduced usage by 12 tons a year.

Activities at Logistics Centers (zero complaints from local communities)

From the viewpoint of proactive preventive measures, Toyota employees at the Haruhi Parts Center, Kamigo Logistics Center, Inazawa Parts Center, Oguchi Parts Center, Tobishima Logistics Center and Nagoya Wharf Center are engaged in action keeping in mind the importance of good communication with local communities. Each site continually checks for oil leaks at truck parking lots to prevent oil leakage, monitors wastewater quality, and measures noise levels in the surrounding areas. The employees also actively participate in community cleanup activities within the site and in the surrounding areas.

Main Results of Activities to Reduce Packaging and Wrapping Materials

Group	Topic	Details	Reduction
Logistics for production parts	Increasing the use of returnable containers	Expanded use of returnable containers for exports to Canada (Lexus RX330) and Turkey (Corolla Verso)	500 tons/year
Logistics for service parts	Simplification	Switched from wooden and steel boxes for shipments of exterior parts to China (Beijing and Harbin) to packaging the parts as they are in their individual wrappings Use of thinner inner packaging material, etc.	1,800 tons/year
			Total 2,300 tons/year

Best Practice 1

Installation of Digital Tachometers to Improve Fuel Efficiency

In land-based transport, avoiding sudden acceleration and stopping, and shifting the gears efficiently can result in fuel efficiency improvements. However, simply explaining these benefits and increasing driver awareness are not sufficient since it is difficult to determine how well drivers are implementing these steps and what is being achieved. Toyota began initiatives to improve fuel efficiency by installing digital tachometers in trailer trucks to accumulate fuel efficiency data for individual trailer trucks and drivers. This program makes data available on individual drivers using the same vehicle; thus the differences in individual driving skills become obvious and more specific feedback is possible.

Toyota began installing these digital tachometers in the trailer trucks owned by Toyota Transportation Co., which account for 15% of the total fleet, and plans to expand their installation to include the vehicles owned by partner companies as well. These simple measures have produced a 3.4% fuel efficiency improvement. This translates into a reduction of 4,200 tons a year in CO₂ emissions.



Digital tachometer terminal

Best Practice 2

Demonstrating Improvement Examples at the Packaging and Wrapping Improvement Exhibition

In order to streamline the wrapping specifications and reassess the supply mode, Toyota held the Packaging and Wrapping Improvement Exhibition at the Toyota Suppliers Center at its Head Office in December 2003. At this exhibition, a total of 55 examples were demonstrated, showing how supply modes, delivery modes, wrapping specifications, etc., had been improved.

Ninety-eight Toyota employees and 185 supplier employees visited the exhibition, and offered comments such as, "The exhibition was very informative because it showcased examples in which the wrapping material had been reduced, and examples in which poor wrapping caused a problem," "I have learned that I could reduce costs significantly by changing my perspective," and "There

were some examples that can be applied to our company."

Because many of the visitors requested that the exhibition be held annually, Toyota plans to hold it at least once a year to encourage improvement activities.



Examples of both before and after the improvements were exhibited, clearly demonstrating the benefits



Recycling and Sales/After Sales



Kosuke Shiramizu
Recycling Committee Chairman

Kosuke Shiramizu

Kosuke Shiramizu joined Toyota in 1963 and has gained experience in a wide range of production engineering and production areas. In 2001, he was appointed Executive Vice President, and Chairman of the Recycling Committee.

In accordance with the Third Toyota Environmental Action Plan, the results of major initiatives taken in each area in FY2003 are as below.

Recycling

- Established and announced the Toyota Recycle Vision.
- The SOC Subcommittee was newly established under the Recycling Committee to address regulations concerning the use of substances of concern.
- Numerous environmental measures including DfR (Design for Recycling) and a reduction in the amount of substances of concern used were incorporated in the new Prius.
- Verification of ASR recycling/recovery technology was completed.
- Various types of dismantling tools were developed by the Automobile Recycle Technical Center.
- Responses to the Japanese Automobile Recycling Law were strengthened.

Sales/After Sales

- The Toyota National Dealers' Advisory Council adopted the Toyota Dealers Association Policy in response to the Automobile Recycling Law.
- Sales and supplies of used and rebuilt parts were expanded.

Organization Chart (As of March 2004)

Recycling Committee

Chairman:
Executive Vice President Kosuke Shiramizu
Vice Chairmen:
Senior Managing Director Hiroyuki Watanabe
Senior Managing Director Kyoji Sasazu
Established in 1990
Studies easy-to-recycle designs of vehicles, development of recycling/recovery technologies, and collection methods

Research and Development Subcommittee

Promotes the concept of design for recycling and prior assessment based on the 3Rs (reduce, reuse, recycle), as well as reduction of substances of concern

Domestic Subcommittee

Promotes dealer activities regarding the manifest system and fluorocarbons

Overseas Subcommittee

Deals with collection and recycling networks for end-of-life vehicles

Special Projects

Investigates and promotes specific projects

ASR Recycling/Recovery Promotion Working Group

The previous Production Engineering Subcommittee has been reorganized as the ASR Recycling/Recovery Promotion Working Group and its activities defined as ASR-specific

SOC Subcommittee

Reduction of substances of concern

Recycling

Updating the Philosophy and Structure

Establishment/Announcement of Toyota Recycle Vision

In June 2003, Toyota established and announced the Toyota Recycle Vision, a long-term plan for recycling end-of-life vehicles (ELVs). The Recycle Vision is aimed at realizing as soon as possible the 95% vehicle recovery rate (70% ASR¹ recovery rate) to be achieved by 2015 and also sets medium-term goals and specifies action plans through to 2010. In FY2003, Toyota initiated environmental action based on the Toyota Recycle Vision.

1. ASR (Automobile Shredder Residue):

Residual resin, rubber and glass, after metals are removed from shredded end-of-life vehicles

Toyota Recycle Vision — Topics and Goals

Topic	Goal
● Steady improvement of vehicle recovery rate in Japan and Europe	Japan : Early achievement of regulation target ¹ Europe : Steady achievement of regulation target ²
● Increased use of renewable resources and recycled materials	Development of technology allowing 20% use of resin parts by 2015 (combining Toyota Eco-Plastic and recycled materials)
● Increased utilization of used parts	10-fold increase in sales of used parts by 2010 (compared to 2002)
● Reduction in substances of concern	Establish Toyota global standards in 2003 Introduction from 2006 in Japan and Europe of vehicles with zero amounts of the 4 banned substances ³ (some parts exempted)

1. ASR recovery rate of 30% in FY2005 (vehicle recovery rate equivalent to 88%), 50% in FY2010 (92%) and 70% in FY2015 (95%)

2. Vehicle recovery rate of 85% by 2006 and 95% by 2015

3. Lead, mercury, cadmium and hexavalent chromium. However, in Japan lead is to be reduced to 1/10 or less of the 1996 level (equivalent to EU).

SOC Subcommittee Newly Established

In FY2003, the SOC Subcommittee was established under the Recycling Committee. As regulations concerning SOC (substances of concern) are being tightened, the SOC Subcommittee promotes reductions in the use of lead, mercury, hexavalent chromium, and cadmium, and steady responses to the Automobile Recycling Law in Japan and to the EU ELV Directive. The Subcommittee is also strengthening initiatives concerning design and green procurement and is steadily reducing usage of SOC.

Initiatives in the Development and Design Stage

Enhanced Recyclable Vehicle Design

FY2003 Goals

- Incorporate the concept of design for recycling (DfR) into vehicles to be launched in FY2005, in response to a vehicle recovery target rate of 95% by 2015
- Improve dismantlability and switchover to easy-to-recycle materials in consideration of future recycling/recovery technologies

Prior Assessment System Implemented in Six Vehicle Series

Toyota applied its Prior Assessment System to six vehicle series launched in FY2003 that were either new or underwent complete redesign. Prior assessment of evaluation items, including long useful life and resistance to corrosion, was done at the development and design stage to confirm the degree of recyclable vehicle design.

Expanded Use of Materials with Consideration to Recycling

TSOP² is used in the interior and exterior parts of new models or those that underwent complete redesign in six vehicle series. The number of vehicle series that use RSPP³ was expanded by two for a cumulative total of 22 vehicle series.

Toyota is also actively promoting the use of recyclable material derived from plants and which are not dependent on fuel or other natural resources. In FY2003, in addition to kenaf that is already in use in Toyota vehicles, the use of Toyota Eco-Plastic, developed entirely by Toyota, was initiated in the spare tire covers of the new Raum, optional floor mats of the new Prius, and other vehicles.

2. TSOP (Toyota Super Olefin Polymer):

A thermoplastic polymer developed by Toyota that has excellent recoverability compared to conventional polypropylene and does not deteriorate even after repeated recycling

3. RSPP (Recycled Sound-Proofing Products):

Soundproofing material for vehicles made from the urethane and fibers sorted out from ASR

Reduction in the Use of PVC Resin in the Prius to One-tenth of Previous Model

Toyota is actively engaged in reducing the volume of PVC resin used. As a result, its usage in the new Prius has been reduced to 1/10 or less than that in the previous model. (Please see p. 37)

Toyota has also developed a halogen-free wire harness⁴ that was first adopted in the Alphard launched in May 2002.

4. Halogen-free wire harness:

A wire harness (electrical wiring network) that does not use PVC resin or bromide-based fire retardant in the shield



Reduction of Substances of Concern

FY2003 Goal

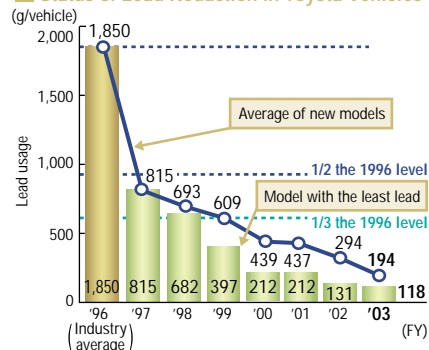
- Reduction of lead usage in vehicles launched in 2006 and after to 1/10 or less of 1996 level

*Japanese Automobile Manufacturer Association (JAMA) new voluntary goal

Achieved Ahead of Schedule the Lead Usage Reduction Goal

Toyota achieved ahead of schedule the Japanese automobile industry's new voluntary goal of "reducing lead usage in models launched in 2006 and after to 1/10 or less of 1996 level" in five out of six vehicle series of models that were new or underwent complete redesign in FY2003.

Status of Lead Reduction in Toyota Vehicles



JAMA's New Voluntary Goals (Announced in November 2002; applicable to new vehicle models)

Lead	Reduction to 1/10 or less of 1996 level in vehicles launched in 2006 and after (except in lead-acid batteries) 1/4 or less of 1996 level in large, commercial vehicles (including buses)
Mercury	Usage prohibited after the Automobile Recycling Law comes into effect in January 2005 (except in LCD displays of navigation systems, combination meters, and other parts which aid in road safety)
Hexavalent chromium	Usage prohibited from 2008 Used as an anti-corrosive agent to ensure long life of bolts and other safety-related parts
Cadmium	Usage prohibited from 2007

EU ELV Directive (effective June 2002)

Lead	Usage prohibited, in principle from July 2003, except in the following: No deadline: Steel containing up to 0.35 % lead by weight, copper alloys, bearing-shells, batteries, vibration dampers, vulcanising agent for high pressure or fuel hoses, solder May be used until the deadline: Aluminum alloys, stabilizers in protective paints, motor brushes, brake linings, glass in bulbs, valve seats, pyrotechnic initiators, some rubbers
Mercury	Usage prohibited, in principle from July 2003, except in the following: Discharge lamps and instrument panel displays
Hexavalent chromium	Usage prohibited, in principle from July 2007, except in the following: Absorption refrigerators in caravans
Cadmium	Usage prohibited, in principle from July 2003, except in the following: Thick film paste (until July 2006), batteries for electrical vehicles (until Dec. 31, 2005)

Initiatives in the New Prius

The new Prius launched in September 2003 incorporates numerous environmental measures such as enhanced recyclable vehicle design and reduction of substances of concern.

Enhanced Dismantlability through DfR

In order to clearly indicate certain points that assist in initial dismantling, Toyota added the "Easy to Dismantle Mark" on the door trim, fuel tank, wire harness and other parts, and adopted an easy-to-dismantle vehicle structure and other measures to enhance dismantlability.

Reduction of Substances of Concern

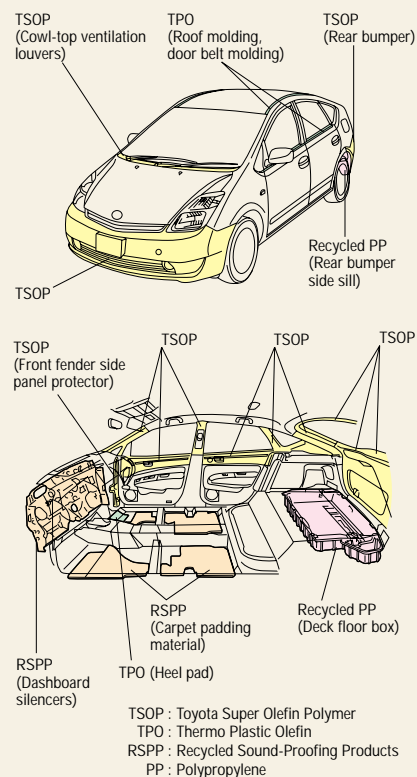
Toyota achieved ahead of schedule the Japanese automobile industry's new voluntary goal through measures such as the use of a resin fuel tank and elimination of lead in the wire harness shield. Easy-to-recycle materials are used in the undercoat and other vehicle body parts, thereby reducing overall PVC resin usage to one-tenth or less of conventional vehicles.

Use of Renewable Resources and Recycled Materials

Toyota Eco-Plastic, a new material made from lactic acid derived from plants, is used for the optional floor mats. Toyota Super Olefin Polymer (TSOP) thermoplastic materials with their excellent recyclability are used in exterior and interior parts including front and rear bumpers and door trim.

Recycled materials are used for the floor undercover, fender protector and other parts. RSPP, a highly functional soundproofing material made from the automobile shredder residue of end-of-life vehicles, is used in the dashboard silencers and the vehicle floor.

Environmentally Considerate Materials Used in the New Prius



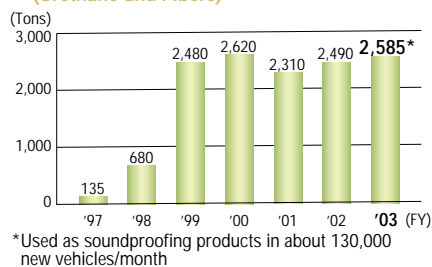
Development of Recycling Technologies

Initiatives in ASR Recycling/Recovery

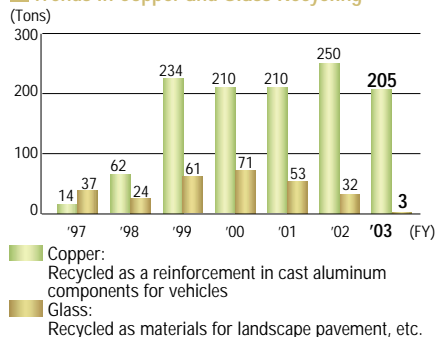
Promotion of Material Recycling of ASR

Toyota, together with Toyota Metal Co., Ltd., began to develop technology for ASR utilization, and in 1998 established the world's first mass-production recycling plant, with a capacity of recycling about 15,000 end-of-life vehicles per month. The ASR Recycling Plant sorts and recycles copper, glass and raw materials for RSPP. In FY2003, it used 4,657 tons of sorted plastics and rubber to produce substitute fuel for kerosene.

Trends in Usage Volume of RSPP Materials (Urethane and Fibers)



Trends in Copper and Glass Recycling



Verification of ASR Thermal Recycling/Recovery Technology

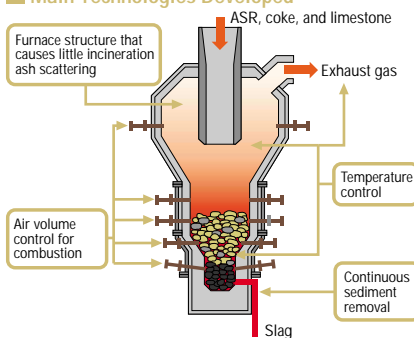
Toyota has almost completed the ASR thermal recycling/recovery technology that it has been jointly developing with Aisin Takaoka Co., Ltd. since December 2002.



ASR Recycling and Recovery Pilot Plant

ASR normally contains a lot of non-combustible elements, chlorine, and heavy metals. Incineration ash adhering to the heat-recovery boiler used in ASR thermal recycling/recovery has been an issue in the past. Therefore, Toyota has been promoting the development of new technologies, applying the ASR recycling/recovery know-how it has accumulated over many years to the furnace structure and operation/control. Toyota has developed a furnace structure that causes little incineration ash scattering and a system for controlling the air volume required for combustion, significantly reducing the amount of incineration ash that adheres to the boiler. Toyota has thus established an advanced ASR recycling/recovery technology, that offers high levels of operational stability, low environmental impact, high recyclability and low cost.

Main Technologies Developed



Stable Operation

The addition of an appropriate amount of limestone based on the characteristics of ASR reduces the melting point of the non-combustible elements of ASR. Furthermore, an improvement in the structure of the furnace bottom to balance the combustion heat of the coke with the heat removed by the slag, etc. has made it possible to remove the slag continuously. As a result, regular sediment removal by an operator or a machine is no longer needed. Furthermore, by monitoring the height of the materials introduced into and accumulated inside the furnace, it has become possible to manage the combustion and discover abnormalities early, resulting in continuous and stable operation.



Continuous sedimentation and removal of slag

Low Environmental Impact

The environmental impact of all the substances discharged (slag, incineration ash, and exhaust gases) is within regulation values.

Analysis of Dioxins

Substance discharged		Actual value	Regulation value
Slag	ng-TEQ/g	0.000092	3
Incineration ash	ng-TEQ/g	0.64	3
Exhaust gases	ng-TEQ/m³N	0.0057	5

Analysis of Elution Test Results

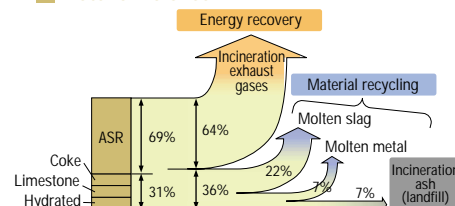
Analysis item	Slag	Incineration ash	Regulation value
Alkyl mercury	mg/l less than 0.0005	less than 0.0005	*
Mercury	mg/l less than 0.0005	less than 0.0005	0.005
Cadmium	mg/l less than 0.01	less than 0.01	0.3
Lead	mg/l less than 0.01	less than 0.01	0.3
Hexavalent chrome	mg/l less than 0.005	0.03	1.5
Arsenic	mg/l less than 0.005	less than 0.005	0.3
Selenium	mg/l less than 0.005	less than 0.005	0.3

*Should be below detectable levels

Recycling/Recovery Technology

The recovered slag can be recycled into roadbed materials or aggregate for asphalt; the molten metals can be recycled into a copper raw material. As for thermal recycling, Toyota has confirmed technologies to stably recover the heat as electricity, steam, etc.

Material Balance



Results of Tests Done on Slag Recycled into Roadbed Materials

Test items	Slag	TR A0017*
Elution of hazardous substances	Within standards	Standard value
Dry density	2.88	2.45 or more
Moisture absorption rate	0.34	3.0 or less
Metallic iron	0.70	1.0% or less
Particle size distribution	Within standards	FM-2.5 standard

*TR A0017: Technical report for standard information on slag for road use

Low Cost

Toyota has successfully reduced operation costs by reducing the volume of incineration ash by 60% and the volume of coke by 50%, and by optimally assigning operators. Furthermore, Toyota is proceeding with developments to build a system that combines material recycling with energy recovery to achieve lower costs and less environmental impact than conventional systems.



Development of Dismantling Technologies

Research Results from the Automobile Recycle Technical Center

Toyota established the Automobile Recycle Technical Center in April 2001, within Toyota Metal, and has been promoting research on dismantlability improvement. The results from this research have been adopted in the new Prius and other vehicles that incorporate the DfR concept.

Toyota has also been working on tools that simplify the dismantling process and various tools have been developed as a result. Some of the major developments are described below.

Fuel-draining Device

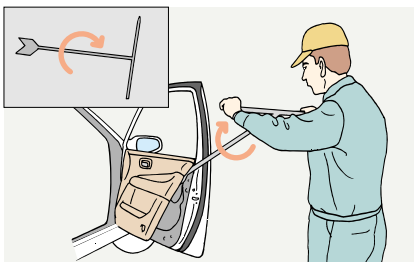
Toyota has developed a foot-operated fuel-draining device for extracting fuel from end-of-life vehicles, after which the fuel can be safely and properly processed. A larger intake hole diameter than that of previous devices has reduced the work time by half. Furthermore, foot operation has improved the work posture, reducing worker strain.



Foot-operated fuel-draining device

Door Trim Removal Tool

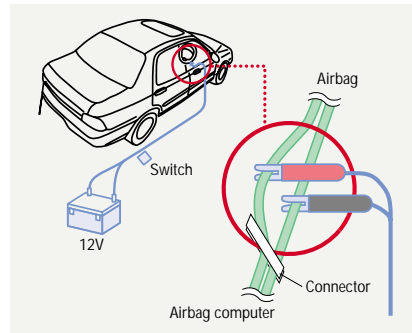
This is a tool that has a specially shaped blade at the tip of a pole, making it possible to easily remove the door trim. The tool has reduced the average work time by 45% compared to conventional tools.



Newly developed tool that removes door trim when its handle is turned

Airbag On-board Deployment Tool

To enable on-board deployment of airbags on end-of-life vehicles, Toyota developed a tool that connects external power between the airbag unit and its actuation computer. This tool reduces the work time involved in deployment by approximately 90% compared to conventional procedures.



Front Glass Cutting Tool (Air Drive Saw)

The newly developed air drive saw prevents glass fragments from scattering when the front glass is being cut and has shortened the work time required by approximately 45% compared to conventional saws. A scattering-prevention cover installed on the air drive saw reduces scattering of glass fragments.



Air drive saw which quickly cuts through the front glass

Wire Harness Removal Tool

A J-shaped hook has conventionally been used for removing wire harnesses. However, if one end of the wire breaks, the hook cannot be used to remove the wire harness, and additional steps are required in the removal operation. Therefore, Toyota developed a method that uses a chain to remove wire harnesses. Pulling on the chain tightens the part of the chain wrapped around the wire harness so that even if one end of the wire breaks, the chain will not become disengaged from the wire harness. This tool has reduced the number of steps in removal operations by approximately 60% and the work time by approximately 40%.



Wire harnesses can be removed reliably and quickly



Chain is tightened to remove a wire harness

Dismantling Simulation Technology

In order to design easy-to-dismantle vehicle bodies, Toyota has developed computer technology that simulates the removal of resin-based parts. This technology quickens the evaluation of vehicle dismantlability by enabling the determination of the force necessary for removal and breakage without conducting tests on an actual vehicle.

Bumper Removal Simulation



Internet Disclosure of Dismantling Information

Toyota has created a website for automobile dismantling companies that provides dismantling information on end-of-life Toyota vehicles. The site discloses information on vehicle structures and efficient dismantling technologies developed by the Automobile Recycle Technical Center. Dismantling operations and important points of procedures are described in detail. In FY2003, all this information was included on the website of the Technical Center. From FY2004, however, the information is being disclosed on Toyota's website.



URL: <http://www.toyota.co.jp/en/environment/recycle/scrap/index.html>

Sales/After Sales

Policy regarding the Automobile Recycling Law

Toyota National Dealers Advisory Council (TNDAC) has been promoting activities toward compliance with the Automobile Recycling Law, which will go into effect in January 2005.

To ensure more reliable compliance with the law and in order to lead the industry by example, the actions to be taken by Toyota dealers have been summarized into the Toyota Dealers Association Policy regarding the Automobile Recycling Law. These guidelines include three major themes as shown in the table below, and define the details and directions of the actions to be taken by Toyota dealers. Based on the guidelines, each dealer will organize its internal structure and proceed with actions that will ensure compliance with the Automobile Recycling Law.

Toyota is also actively supporting the dealers' efforts by, for example, producing and distributing videos and booklets that explain the Automobile Recycling Law and the actions to be taken by dealers.

Details of Toyota Dealers Association Policy regarding the Automobile Recycling Law

(1) Re-evaluation of business operations at dealers	
<ul style="list-style-type: none"> Clearly explain the intent and details of the law to customers, and obtain their understanding about the need to promote the recycling/recovery of end-of-life vehicles and the associated costs that must be borne by them Ensure reliable on-site operations by everyone from head office personnel to sales staff 	
(2) Method of determining and sorting used cars being traded in	
<ul style="list-style-type: none"> Accurately determine whether a vehicle being traded in is an end-of-life vehicle or not at the time of sales negotiation Accurately explain details to customers and take appropriate actions 	
(3) Re-evaluation of business relationships with dismantling companies	
<ul style="list-style-type: none"> Conclude written agreements with dismantling companies and require the proper treatment of end-of-life vehicles Regularly and jointly verify the processing conditions at dismantling companies 	



Automobile Recycling Law compliance promotion pamphlet distributed by Toyota to all its dealers

Expansion of ISO 14001 Certification Acquisition

In FY2003, 12 more dealers acquired ISO 14001 certification bringing the cumulative total to 53.

Dealers that Acquired ISO 14001 Certification In FY2003

Hiroshima Toyota Co., Ltd.
Tochigi Toyota Co., Ltd.
Iwate Toyopet Co., Ltd.
Ehime Toyopet Co., Ltd.
Fukui Toyopet Co., Ltd.
Nagasaki Toyopet Co., Ltd.
Sendai Toyopet Co., Ltd.
Niigata Toyopet Co., Ltd.
Netz Toyota Toto Co., Ltd.
Netz Toyota Kanagawa Co., Ltd.
Toyota Ibaragi Auto Parts Corporation
Toyota Aichi Parts Distribution Co., Ltd.

Development of a Replaceable Element Type Oil Filter

Toyota introduced an element-replacement type oil filter into the new Crown that was launched in December 2003. The new filter requires replacement of only the element, thus eliminating the need to discard its housing. Toyota plans to introduce this new filter into more models as new engine types go into mass production.

Enhanced Supply of Used and Rebuilt Parts

In FY2003, Toyota dealers continued sales of used and rebuilt parts and retrofit kits.

Sales and Supply of Used and Rebuilt Parts and Retrofit Kits in FY2003

Unit: pieces; () indicates supply of new parts

Number of used parts sold	55,000
Number of rebuilt parts supplied	
Automatic transmission	15,200 (200)
Turbo charger	100 (1,600)
Power steering	19,300 (12,100)
Torque converter	5,400 (4,300)
Number of retrofit kits supplied	2,100

Promoting the Collection and Recycling of End-of-life Parts

Parts distributors nationwide continued the collection of end-of-life parts from dealers across the country and the bulk supply* system for motor oil.

Collection and Recycling of End-of-life Parts and Bulk Supply System Results in FY2003

Collection and recycling of discarded bumpers	771,000 (71.1% of total discarded at all dealers)
Collection and recycling of lead balance weights	57 tons
Percentage of bulk supply motor oil	50% of oil sold by parts distributors

*Bulk supply:

A tanker truck transports the motor oil to dealers, who then store it in tanks

Responses to the Automobile Recycling Law

Leading the Industry in Promoting Responses

In order to encourage the recycling/recovery and proper treatment of end-of-life vehicles, the Law Concerning Recycling Measures for End-of-life Vehicles (Automobile Recycling Law), which defines the responsibilities of automakers and other concerned parties, will go into effect in January 2005. Automakers will be required to collect and properly process CFCs/HFCs, airbags, and ASR that will be generated from end-of-life vehicles.

In response to this law, Toyota played the leading role in establishing three designated corporations (for fund management, information management, and recycling of resources) in June 2003, as well as the Japan Auto Recycling Partnership (JARP) in January 2004, which acts as a common take-back

Establishment of ASR Operations Division that Specializes in Collection and Recycling/Recovery of ASR

The key factor in automakers' efforts toward compliance with the Automobile Recycling Law is ASR recycling/recovery. The law stipulates the following recycling goals: 30% ASR recovery rate in 2005 (equivalent to a vehicle recovery rate of 88%), 50% in

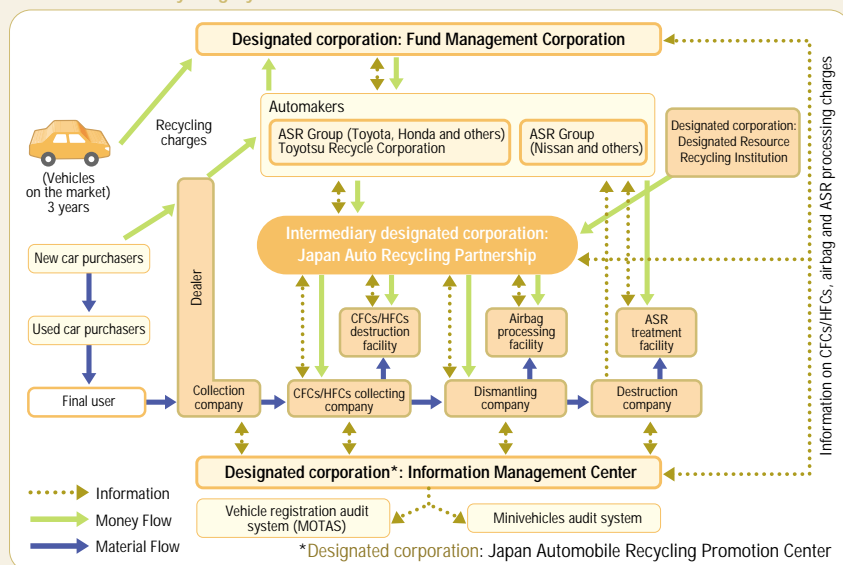
Recycling of Airbags

Based on the provision of the Automobile Recycling Law, Toyota, in cooperation with JARP, is building a system that efficiently and appropriately processes airbags. Two methods are available for processing airbags: on-board deployment (simultaneous or individual deployment) and removal/collection. In on-board deployment, processing and recycling are completed on-board when the airbag is deployed. In removal/collection, airbags that are

Continued Collection and Destruction of CFCs/HFCs

The Fluorocarbons Recovery and Destruction Law, which went into effect in October 2002, requires that automakers collect CFCs/HFCs from end-of-life vehicles and transfer them to processing companies for destruction.

■ Overview of Recycling System

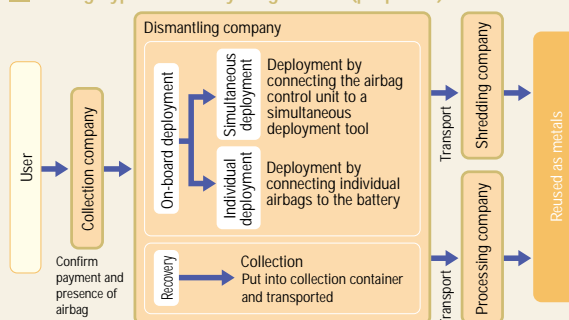


Volkswagen, Audi, Peugeot, and BMW are also subcontracting ASR recycling/recovery to Toyotsu Recycle Corporation.

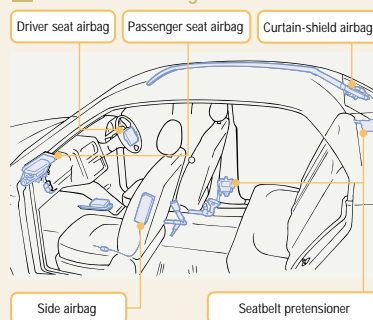
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graph LR
    ELV[E.L.V.] --> Dismantling[Dismantling and collection of reusable parts]
    Dismantling --> DismantlingCompany[Dismantling company]
    Dismantling --> ShreddingCompany[Shredding company]
    DismantlingCompany --> RawMaterial[Raw material for steel]
    RawMaterial --> ElectricFurnace[Electric furnace/converter company]
    ShreddingCompany --> DismantledVehicle[Dismantled vehicle]
    DismantledVehicle --> Shredding[Shredding]
    Shredding --> ASR[ASR]
    Shredding --> MeltBricking[Melt-bricking]
    ASR --> Landfill[Landfill site]
    MeltBricking --> Landfill
    DismantledVehicle --> Incineration[Incineration facility]
    RawMaterial --> Recycling[Recycling facility]
  
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■ Airbag Types and Recycling Routes (proposed)



Location of Airbags



41



Environmental Aspects

[Automobile Peripheral and Other Businesses]

Housing Business

On January 1, 2004, Toyota's Housing Sales Group became an independent entity and began sales as Toyota Housing Corporation. Continuing to function as the sales division of Toyota's housing business, Toyota Housing has been developing a comprehensive operation stretching from the sale of environmentally considerate 21st century homes to projects for condominiums and proposals for town creation. In FY2003, a total of 4,038 houses were sold.

In terms of environmental initiatives, Toyota is developing new products which meet "Next generation energy-saving standards" and that are even more environmentally considerate. Toyota has been taking measures to reduce CO₂ emissions at both the production stage and the occupation stage. Toyota is also making efforts to prolong the lifespan of houses through its long-term (30-year) warranty system for major structural supporting elements, thus promoting resource conservation and the reduction of waste generation.

Toyota Housing has joined together with dealers, construction companies and suppliers in concerted action to reduce environmental impact and promote the widespread adoption of environmentally considerate housing.

Environmental Management

Toyota's Housing Group operates an environmental management system (EMS) based on ISO 14001 certification and promoted initiatives at all Toyota Housing housing works with the aim of achieving its FY2003 goals. As a member of the Japan Prefabricated Construction Suppliers and Manufacturers Association, Toyota worked towards a revision of Eco Action 21, an environmental action plan which serves as a guideline for the housing industry, and set new goals for FY2005 and FY2010.

Development of Environmentally Considerate Housing



The new "SINCÉ Cada" series launched in April 2004

In April 2004, Toyota Housing launched the "SINCÉ Cada" series, which not only adopts the Next-generation energy-saving standards as standard specifications, but also allows inhabitants to enjoy living in coexistence with nature through careful management of light and air, such as blocking out afternoon sun while still retaining good airflow, and an optional all-electric system, making this an environmentally considerate dwelling.

***Next-generation energy-saving standards:** Hermetically sealed and well insulated housing able to reduce by 20% the amount of energy needed for heating and air conditioning as a means of reducing CO₂ emissions to prevent global warming

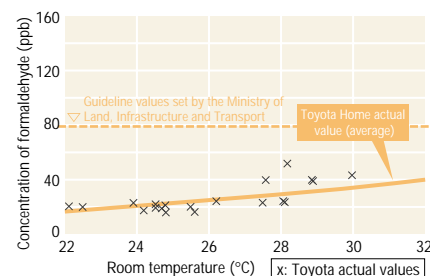
Reduction of Indoor VOC Levels

Following a revision of the Building Standard Law of Japan, responses to the "sick house syndrome" were strengthened. Indoor concentration of formaldehyde must be at or below guideline values and the use of chlorpyrifos is banned in all construction work begun on or after July 1, 2003. Regarding formaldehyde, Toyota Housing applies the F☆☆☆☆ standard, the standard with the lowest permissible emission levels, to structural materials and

finishing materials used in such places as the inside of walls and ceilings, and has made it a standard feature in all of its products ahead of other companies.

As a result, the emission of formaldehyde, of which there is usually a high risk when the temperature rises above 28°C, has been verified to remain at or below guideline values even at high temperatures.

Emission of Formaldehyde in Toyota Home Products



Initiatives at Production Plants

Reduction in CO₂ Emissions

At the Kasugai Housing Works, a cationic electrodeposition coating and drying facility, a pretreatment immersion boiler, and the canteen kitchen facilities were converted to natural gas-powered operation, realizing a reduction in CO₂ emissions of 220 tons a year. The Tochigi Housing Works also promoted CO₂ emissions reduction measures, including shortening operating times for drying facilities and revising operational start times for the heatup system boiler, to achieve a reduction of 9.2 tons per year. At the Yamanashi Housing Works, despite an unprecedented increase in production, a yearly reduction in CO₂ emissions of 7.5 tons was achieved through enhanced processing capability, while all employees joined together to implement

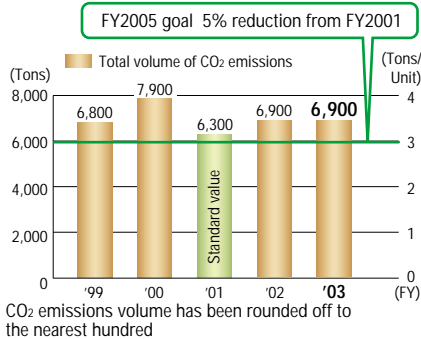
Toyota's Housing Group Environmental Action Plan and Goals; Results of Initiatives in FY2003

Action guideline	Item	Specific action items and goals (FY2005 goals)	FY2003 goals	Results
1. Development and supply of products with top levels of environmental performance	CO ₂ emissions reduction during the occupation stage	• At least 50% of houses built by Toyota to comply with "Next-generation energy-saving standards" • Fitting of photovoltaic power generation systems, etc., that supply at least 5% of power consumed during the occupation stage	40% 1%	90% 0.5%
	Long-life and durability of houses	• All homes to be provided with a 30-year long-term warranty contract • At least 80% of contracted houses to correspond to top rating in Housing Performance Index System	100% 100%	100% 100%
	Management and reduction of substances of concern	• Reduction of formaldehyde concentration in at least 80% of contracted houses (top rating in Housing Performance Index System) • Toluene and xylene levels to conform to interior air quality guidelines of the Japan Federation of Housing Organizations	100%	100%
2. Pursuit of production activities that do not discharge waste	Promotion of measures to prevent global warming	• 5% reduction in total CO ₂ emissions compared to FY2001	2.6% reduction	7.7% increase
	Waste reduction and resource conservation	• 50% reduction in combustible waste generated compared to FY1999, aiming to achieve zero emission	50% or more reduction	45% reduction
	Conservation of water resources	• 20% reduction in total water consumption compared to FY1995	12.2% reduction	8.3% reduction
	Reduction of trash at construction sites	• 70% reduction of on-site trash such as packaging and wrapping material, remnant material and excess material, compared to FY2000	33.3% reduction	37.0% reduction
3. Business partners are environmental partners	Enhanced cooperation with suppliers	• Promotion and support of EMS, thorough management of substances of concern, and promotion of efforts to acquire ISO 14001 certification by suppliers	—	67% (of total value of material purchased by Toyota)
	Enhanced cooperation with dealers	• Establishment of EMS, promotion and support of achievement of goals in Toyota Housing Dealer Environmental Standards • Increased support for environmental responses of Toyota Housing dealers	Periodic audits were carried out between May and June 2003 in compliance with legal regulations governing industrial waste. Legal compliance was confirmed at all Toyota Housing Dealers. Similar audits are scheduled for every May and June in the future also.	



strict control of heating and cooling system temperatures by installing temperature gauges on the premises. As a result of these activities, the total CO₂ emissions of the three housing works combined was 6,900 tons in FY2003. This means that, while emissions per unit were reduced, the total emissions volume increased slightly due to increased production volume. In the future, Toyota will work toward achieving FY2005 targets through reinforced operational control of equipment in use and other activities.

Trend in CO₂ Emissions at Production Processes



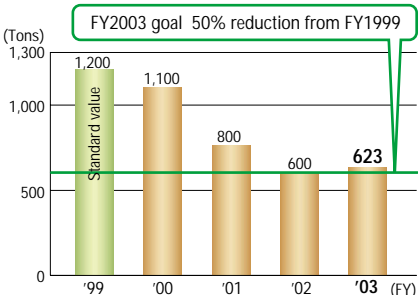
Reduction of Substances Subject to PRTR

At the Tochigi Housing Works, discharge of substances subject to PRTR, reporting of which is required by law, was at or below standard values. At the Kasugai Housing Works, 6.3 tons of toluene and 4.0 tons of xylene were reported, while the Yamanashi Housing Works reported 1.7 tons of toluene and 1.0 tons of xylene.

Reduction of Waste

At the Kasugai Housing Works, waste vinyl, one of the waste plastics which had previously been incinerated, is now sold to toy manufacturers as raw material (recycling of resources), which has reduced waste generation by 34 tons a year. At the Yamanashi Housing Works, following advice from a waste processing company, action was taken to reduce the water content of waste at the processing stage. The total waste generated by the three housing works combined increased to 623 tons, exceeding the fiscal year goal, due to increased production and other factors.

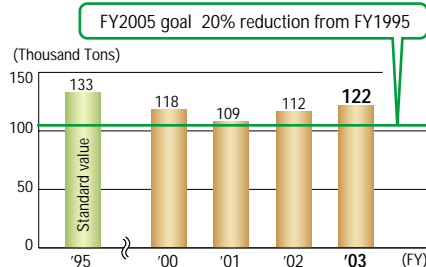
Trend in Volume of Waste Generated



Conservation of Water Resources

Water consumption at the three housing works in FY2003 totaled 121,763 tons, due to increased production and other factors, meaning the FY2003 water conservation goal could not be met. As no industrial-use water is supplied to the Kasugai Housing Works, regular clean water has so far been used in the production process. In order to reduce the amount of clean water used, a purification system was introduced in March 2004 which makes use of the rainwater that falls on the roof of the entire facility. The introduction of this purification system is expected to reduce water consumption by approximately 10,000 tons in FY2004.

Trend in Total Water Consumption

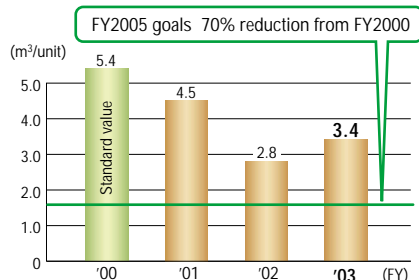


Initiatives at Construction Sites

At the construction sites, initiatives to reduce waste included measures to reduce trash by switching from cardboard to re-usable plasterboard for curing and packaging material; and incorporating in the manufacturing process certain operations previously carried out on-site so as to reduce remnant material. In FY2003, the volume of waste generated per unit at the construction sites was 3.4m³.

As part of initiatives for the future, Toyota will continue to promote activities concentrating on recycling and re-use. In specific terms, efforts will be made to secure recycling routes and to ensure full implementation of on-site sorting.

Results of Waste Reduction Measures at Construction Sites of Prefabricated Houses



Data is based on waste reduction for an average-sized house in Japan (130 - 140m²)

Environmental Education within the Housing Group

Improving Awareness of Environmental Preservation by Facility Visits

In April 2004, environmental education was conducted for 25 new employees or those transferred from other groups. The session consisted of formal lectures and touring of environmental facilities, so that as well as learning the theory, participants also made actual visits to facilities to see the new rainwater utilization system, as a way of encouraging enhanced awareness of environmental preservation.



Visit to see the new rainwater utilization system

Participation in the Creation of an Environmentally Harmonized Cityscape

In the summer of 2003, an environmentally harmonized cityscape, Eco Village, was created in a corner of the Urban Development Corporation's City Garden Tsurukawadai. In the center of the facility, eight companies, including Toyota Home Tokyo Co., Ltd., have built nine environmentally harmonized dwellings. These units are equipped with a number of environmental features including photovoltaic panels, organic waste disposal devices and rainwater storage facilities. The eight companies have formulated the so-called Attractive Town — Friendly Town Guidelines, and are working to create an environmentally harmonized cityscape in which due consideration is given to visual appearance to the extent that power poles and power lines are as unobtrusive as possible, a minimum distance of 1m is preserved between walls, and hedges are utilized on external boundaries, all in an effort to establish privacy and give ample consideration to boundaries shared by neighbors. From environmentally harmonized dwellings to environmentally harmonized cityscapes, the project shows the way forward in the creation of residential environments.



Center of Eco Village

Source: Jutaku Sangyo Hyakka 2004



Environmental Aspects

[Automobile Peripheral and Other Businesses]

Intelligent Transport Systems/Biotechnology and Afforestation Businesses

Intelligent Transport Systems

Intelligent Transport Systems (ITS) are an attempt to solve the various issues caused by an advanced motorization society, including accidents, traffic congestion and environmental issues, through the use of electronics and telecommunications technology.

Promoting Test Operations On the Crayon EV Commuter System

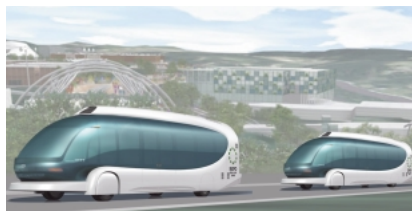
Toyota has been conducting test operations on the Crayon EV Commuter System based on shared-use of compact electric vehicles, "e-com" in the Toyota Head Office area in Toyota City since 1997. These cars are parked in front of train stations so that people can drive them in a "park and ride" fashion for commuting to work or school or to drive freely within the community. They not only contribute to smoother transport within the region, but also alleviate environmental impact by reducing emissions of CO₂ and other substances.

IMTS as a Means of On-site Transportation at EXPO 2005 Aichi, Japan

The movement of visitors within 2005 World Exposition, Aichi, Japan (EXPO 2005) will be facilitated by Toyota's IMTS (Intelligent Multimode Transit System)¹. It is expected to cover a total one-way distance of about 1.6km in the automatic operation zone and a total distance of about 0.8km in the manual operation zone, and can carry approximately 30,000 passengers/day. The vehicles envisaged for actual operation have a design based on glass cabins with curved profiles.

1. IMTS:

IMTS is a new transit system that allows the unmanned, automatic and platoon operation of buses on dedicated roads, as well as manual and independent operation on ordinary roads. The system features the passenger capacity of conventional rail-based mass transit systems and the economic efficiency of buses.



An artist's rendering of IMTS platoon operation at EXPO 2005

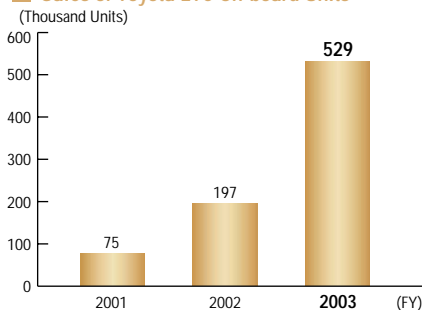
ETC On-board Unit Sales Surpass 500,000 Units

The Electronic Toll Collection system (ETC), which automatically collects charges from vehicles passing toll points, leads to easing of traffic congestion and reducing exhaust emissions. The number of ETC on-board units sold at Toyota dealers in FY2003 (the number of set-ups*) reached around 530,000. The ETC market is expanding rapidly due to falling prices for the on-board unit and toll discounts for system users. Toyota will continue to work to encourage the wider use of ETC.

2. Set-up:

The registering of vehicle information in the on-board unit, essential for ETC operation

Sales of Toyota ETC On-board Units



Biotechnology and Afforestation Businesses

World's First Bio-plastic Interior Parts Material

Toyota became the first automaker in the world to use bio-plastics for vehicle interior parts, employing them for the spare tire cover and optional floor mats in the new Raum that debuted in May 2003. As bio-plastics are made from plants, which take in CO₂ from the atmosphere when they grow, they cause no additional generation of CO₂ even when incinerated. Toyota also began using bio-plastic in the optional floor mats of the new Prius, launched in September 2003.

Establishment of Bio-plastic Pilot Plant

Toyota is currently constructing a bio-plastic pilot plant within the Hirose Plant to investigate the feasibility of its bio-plastic mass-production technology. The plant is envisioned to be able to produce 1,000 tons of bio-plastics a year. Full-scale operation is due to begin in early 2005. In addition to its usage as raw material for automobile parts, Toyota also plans to adapt bio-plastics to the wide range of



Artist's rendering of the completed bio-plastic pilot plant

plastic products that pervades people's daily lives.

Yearly Crop in Sweet Potato Business Reaches 1,000 tons

P.T. Toyota Bio Indonesia (TBI), established in 2001 as a sweet potato business venture, is making a concerted effort to recruit farms to grow sweet potatoes and to expand the area under cultivation. In FY2003, 1,000 tons of sweet potatoes were harvested and in FY2004 Toyota aims to harvest 5,000 tons.

Status of Progress in FY2003

Bio-plastics Business

- World's first use of bio-plastics for vehicle interior parts on the new Raum and Prius
- Bio-plastic pilot plant with yearly production capacity of 1,000 tons under construction

Sweet Potato Business

- Sweet potato harvest 1,000 tons
- Concerted effort to recruit farms and expand cultivated area

Afforestation Business

- Tree planting projects in Australia cover 1,550ha
- First term of reforestation activities in China completed. Second term started in 2004.

Floriculture Business

- Sales begun in October 2003 of Cape Jasmine with high air-cleansing capacity
- Development of easy-care slow-growth Zoysia Grass

Peat and Roof Garden Business


- Mining of peat begun in China in March 2003
- Supply to Japan, Mexico and Chinese domestic market
- Total constructed area of roof and wall gardens reaches 14,000 m²



Environmental Education/Communication

More Practically Oriented Environmental Education

In order to implement consistent environmental action, Toyota conducts environmental education graded by the number of years of service and content of duties. As an example, in FY2003 environmental education was provided to 900 newly recruited employees. For employees posted to other Asian countries, education on environmental information such as issues in the country of posting and the environmental initiatives being implemented by the local affiliate is provided.

 Please see p. 54 for details on education for employees posted to other Asian countries

Environment Month Activities Extended to Consolidated Subsidiaries

In FY2003, Environment Month activities included a lecture on the theme of "Responses to Global Warming." Other activities were the distribution of environmental calendars and an environmental exhibition at Toyota Kaikan. Consolidated subsidiaries overseas and in Japan were also encouraged to undertake Environment Month activities.

Holding of Environmental Courses

In September 2003, an environmental course was held for district sales managers in Japan, who are in charge of supporting the sales activities of dealers. During the course, in addition to explaining items such as environmental issues relating to domestic logistics operations and the Automobile Recycling Law, a study visit was made to a dismantling company for an on-site hands-on demonstration (*genchi genbutsu* concept).



Visit to a dismantling company

Environmental Communication

Toyota conducts a variety of communications activities including active disclosure of information by publishing Environmental & Social Reports and holding a variety of events in order to communicate on a broader level with society, and to promote preservation of the global environment.

Environmental Events at Showrooms

Toyota held the Environmental Fair at Toyota Auto Salon Amlux Tokyo as an exhibition during the Global Environment Month. The exhibition provided an introduction to Toyota's environmental initiatives, with displays of roof garden models, lavender and other plant varieties developed by Toyota's biotechnology and afforestation business, recycling initiatives, hybrid vehicles, and intelligent transport systems, etc.


For the many visitors who come to MEGA WEB during the summer vacation, the MEGA WEB Eco-Club was organized and around 2,000 people participated. As well as an exhibition of hybrid vehicles and vehicles that incorporate the concept of design for recycling (DfR), hands-on events such as a ride on a fuel-cell bus, a Eucalyptus CO₂ Discovery Class, and an eco-quiz were organized, which were rated highly by participants.



Participants in the Eucalyptus CO₂ Discovery Class


Inclusion of Social Aspects in Environmental Report

Toyota began publishing environmental reports in 1998, and uses them to raise awareness within the company for improving environmental performance and to share information with related companies. From the FY2003 issue, in response to public demand, information on social and economic aspects has also been included and the title has been changed from the previous Environmental Report to Environmental & Social Report. In FY2003, 25,000 copies of the Japanese version and 10,000 English-language copies were published.

 http://www.toyota.co.jp/en/environmental_rep/04/index.html

Enhancement of Environmental Information on Website

Toyota has expanded and enhanced the website that presents environmental information. A message from management and the Toyota Earth Charter are posted along with environmental information on individual vehicle series. Data of environmental impact caused by Toyota's plants in Japan and previous issues of the Environmental & Social Report can be downloaded.

 <http://www.toyota.co.jp/en/environment/index.html>

Increased Number of Cooperative Exhibitions and Lectures

Toyota is cooperating actively with the central government and regional municipalities in holding or supporting environmental events. In FY2003, exhibits were provided at 52 events (36 in the previous year). Toyota also held lectures at 65 locations (70 in the previous year) in response to requests from universities, companies, etc., actively introducing its environmental initiatives.


Holding of the Fifth Toyota Environmental Forum


The Toyota Environmental Forum was begun in 1997, the year the Prius was released. In FY2003, it was held in June at the Tokyo Big Sight under the theme 'Toward the Realization of Sustainable Mobility.'

At the symposium, the future introduction of Toyota's new environmental assessment system Eco-VAS was announced, and the role of the new hybrid system installed in the next-

generation Prius as a key technology for the future was emphasized.

An exhibition on the evolution of the hybrid vehicle and a display of clean-energy vehicles were offered and participants were given the chance to ride the FCHV-BUS2, Toyota's fuel-cell hybrid bus.

 Please see p. 25 for details on Eco-VAS and p. 46 - 49 for details on the new Prius

 http://www.toyota.co.jp/en/k_forum/



President Fujio Cho speaks at the Environmental Forum



Special Story

The New Prius Contributes to the Environment by Making the Shift from Quality to Volume

The first-generation Prius, which was launched in 1997, was an embodiment of Toyota's environmental initiatives. Six years later, Toyota launched the new Prius, seeking to contribute even more to the environment and further promote popular usage of hybrid systems. Development of the new Prius, with its improved environmental and driving performance, was conducted almost from scratch.

"When operating at low speeds, this wonderful Prius makes almost no engine noise. As a result, when I go to pick up my children from after-school activities in the evening, I don't have to worry about disturbing the neighbors. The excellent fuel efficiency also helps with the household finances. There is no need to recharge the battery, it has plenty of power, and it is environmentally considerate. The new Prius is a stylish, good-looking, and economical vehicle."

This statement was part of an e-mail received from an owner of a new Prius in Chicago.

Let's take a closer look at how the new Prius has changed compared to the first-generation model launched six years ago.

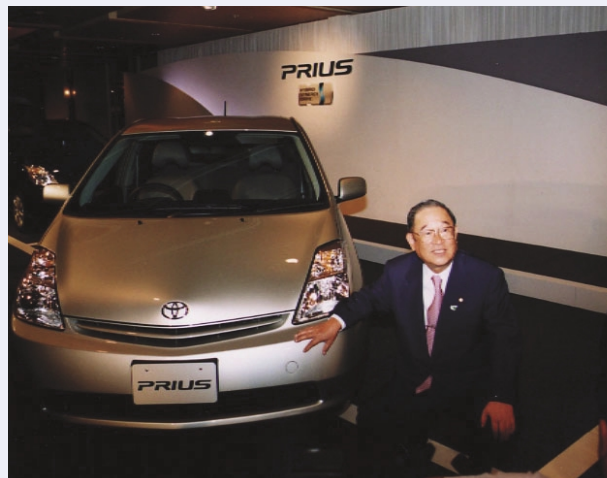
The First-generation Prius is an Embodiment of the 21st Century Vehicle

In December 1997, Toyota launched the first-generation Prius, the world's first mass-produced hybrid passenger car. The combination of a gasoline engine with a separate motor achieved high-efficiency operation, while the recovery of kinetic energy and conversion to electricity for storage in a battery made possible fuel efficiency twice as high as that of conventional gasoline vehicles.

The first-generation Prius was a revolutionary vehicle. It embodied Toyota's answer to the question of what form vehicles



The first-generation Prius used a mass production hybrid system



President Fujio Cho at the launch of the new Prius in September 2003

should take in the 21st century. Without taking the environment into consideration, there is no future for vehicles in the 21st century.

President Fujio Cho made the following statement: "It bothers me when I'm told that in the 100 years of automobile development Japan has not contributed anything. Unfortunately, the starting lines were different, so nothing can be done about this. With respect to the environment, however, the starting line is the same for everyone. Toyota will make every effort so that we can hear that Japan's technology has contributed *this* much to the environment."

The first-generation Prius sought to be the embodiment of this idea.

"Creation is Easy, But Maintenance is Hard"

Since it was launched in December of 1997, the first-generation Prius underwent two minor redesigns, improving the fuel efficiency from 28.0km/liter to 31.0km/liter. Six years after its initial launch, the Prius underwent a complete redesign and was launched in September 2003 with an advanced powertrain.

There is a saying that "creation is easy, but maintenance is hard." This phrase comes from the Zhenguan Zhengyao, a work written during the Tai Zong reign, the second emperor of the Tang Dynasty. The original meaning is that "unifying the entire country is difficult, but maintaining and developing it is even more difficult." It is said that Tokugawa Ieyasu often read this work and used ideas from it as the basis for developing a long-term government.



Development of the first-generation Prius involved the challenge of the first hybrid system, and according to Takeshi Uchiyamada, Chief Engineer of the first-generation Prius and current Senior Managing Director, "At that time, we were groping for solutions. My first impression was 'it moves!' rather than 'it runs.'" With high goals and limited time, this was by no means an easy task. The second generation Prius, continues to convey the established image of Toyota as a manufacturer of hybrid vehicles and an environmentally conscious company, and was required to not only display improved environmental performance, but also incorporate further appeal. Consequently, further development of the concept was no easy matter.

Satoshi Ogiso, (current Concept Planner, Product Development Group) who has been involved with product development since the first-generation Prius, explains: "The first-generation Prius was successful in bringing the hybrid system to the market. For the second-generation Prius, we worked to enhance the appeal of hybrid vehicles, focusing on the promotion of widespread use and driving performance. No matter how good the environmental performance, if the system does not come into wide use, its benefits will not be felt by society. Promoting the widespread use of vehicles that are considerate of the environment will lead to true environmental responses. By simply improving the first-generation vehicle, however, it would be difficult to create new appeal. We completely abandoned the original concept of the Prius and started with a blank slate to create a new concept. Our biggest concern was whether we would be able to create a second-generation vehicle that could compare to the epoch-making first generation."

Complete Reevaluation of the Powertrain

In order to improve the driving performance of the Prius, its powertrain was completely redesigned. In the case of the new Prius, by starting again from scratch, we were aiming at a substantial improvement in driving performance. After examining various data, such as engine size, battery capacity, and output, we made a decision to go with a new main system called THS II (Toyota Hybrid System II). The major improvements made by THS II were the adoption of a high-voltage power-control system for the motor drive voltage and

enhancement of the system's potential by improving the performance of the engine, the motor, and the generator, and by increasing the regeneration capacity, etc.

The adoption of a high-voltage power-control system was the key. A method of increasing motor output by increasing voltage is nothing new. As a matter of fact, such a method is routinely used in industrial machines and trains. However, even though the development team knew that such a technology existed, the idea of incorporating it into an automobile did not easily occur to them. First of all, the system itself would take up a substantial amount of space and secondly, there was no prior example of applying this particular method to a motor that switches between output and power generation at such a dizzying pace. In other words, while the adoption of a high-voltage power-control system could expand the potential of hybrid vehicles, it could also pose many challenging and unpredictable problems.

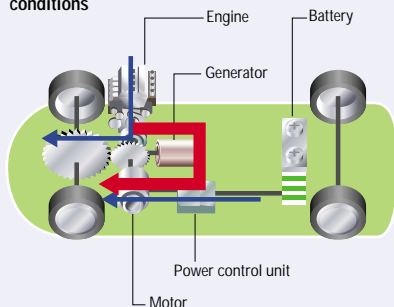
Although the development team members knew that a high-voltage power-control system would improve performance, they were not sure whether they could develop a system that would fit in the limited space of a motor vehicle. This point was hotly debated during many meetings.

In the end, we decided to adopt an improved method that centered on a high-voltage power-control system. However, this was a huge challenge for the development team, who feared that it might be forced to change its direction at an early stage of development.

Once the development of the high-voltage power circuit began, there was a mountain of problems. There was no such thing as a ready-made high-voltage power circuit system for installation in automobiles. There were many problems that had to be overcome, such as what to do about the heat generated by increased voltage and the noise generated. Since there were no commercially available products, we had to make one ourselves from scratch. The fact that Toyota had been making a wide range of electronic components including for switching elements, worked to our advantage in this case. For example, although a part called a "reactor" is essential for a high-voltage power circuit, there were no products small enough to be used in automobiles. Shigenori Hori (current Executive Chief Engineer for the Prius) says that without Toyota's internal expertise in producing electronic components, his team would never have been able to develop such a compact product and make mass-production feasible.

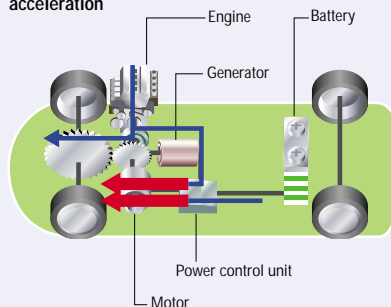
Improvements in THS II

Under normal conditions



Improved engine and motor performance and increased regeneration capacity

During acceleration



High-voltage power circuit increases power generated by the motor



Power control unit

Special Story

Rigorous Durability Tests

Increasing the voltage also means that insulation performance must be enhanced and the heat generated must be handled. To reevaluate the powertrain, we had to produce prototypes and repeat numerous tests. Then, even after the product development was finished, the issue remained of ensuring stable production of the developed product. It can be said that the development of the new Prius was made possible by the integration of development and production technology.

When a new vehicle model is being developed, a primary prototype, a secondary prototype, and even a tertiary prototype are made, which are then put through driving tests. In the case of the new Prius, which incorporated new systems, the prototyping stage went as far as a seventh prototype, and the total distance driven by these prototypes during testing easily exceeded one million kilometers. This shows how rigorously the vehicles were tested for durability.



Driving tests conducted in the U.S.A.

In this way, Toyota improved the driving performance of the new Prius, which was one of the challenges facing the first-generation Prius. In terms of acceleration, the new Prius realizes performance on par or exceeding that of the 2.0-liter Allion or 2.4-liter Camry.

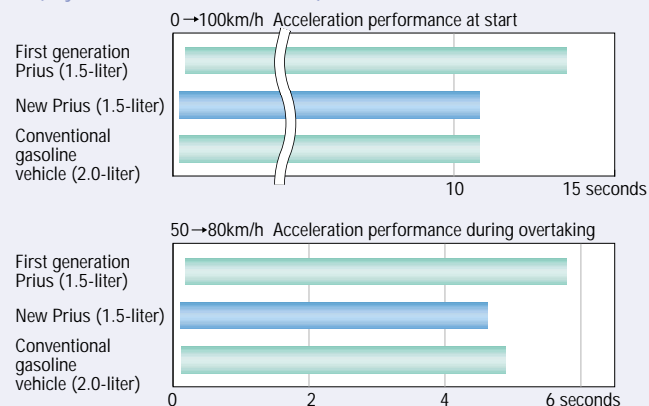
Fuel efficiency has also been improved from 31.0km/liter to 35.5km/liter. Put simply, this was an improvement of approximately 15%. "To achieve this improvement, the engineering team made many finely tuned enhancements, rejoicing at every level of efficiency improvement along the way to ultimately achieve the final figure," says Satoshi Ogiso.

Environmental performance was also greatly improved. Viewed in terms of overall efficiency (Well to Wheel), the new Prius scores 32% (compared to 28% for the first-generation Prius). This level is the highest among all commercially available vehicles, including FCHVs, and is a testament to the fact that the Prius leads the pack in the race to produce the ultimate eco car. In addition, because of its low-emissions performance, the new Prius has received the new Super Ultra-Low Emission Vehicle rating in Japan, the Advanced Technology PZEV emission rating in the U.S.A., and the Euro 4 certification in Europe.

Environmental Performance of the New Prius

	Fuel efficiency (%)	Vehicle efficiency (%)	Overall efficiency (%)				
			0	10	20	30	40
Latest gasoline vehicle	88	16	14%				
Prius (before minor redesign)	88	28	25%				
Prius (after minor redesign)		32	28%				
Prius (with THS II)		37	32%				

Acceleration Performance of the New Prius (Toyota in-house measurements)



Quantitative Assessments

Sales of the new Prius have been progressing well, with combined sales for both Japan and overseas of approximately 130,000 vehicles expected in 2004, exceeding the initial sales target of 76,000 units. Broken down into more specific terms, Toyota expects to sell 70,000 vehicles in Japan and 60,000 vehicles overseas. Among the overseas markets, North America is performing particularly well with sales of 49,000 vehicles. In conjunction with the favorable sales, production was increased in April 2004 from 7,500 units per month to 10,000 units and Toyota is moving towards achieving its goal of expanding the adoption of a high environmental performance car.

The environmental performance of the new Prius has been praised in Europe, and it is subject to preferential tax treatment in 15 countries, including France, the United Kingdom, and Germany. In the U.K., for example, a 1,000 pound subsidy is available for clean emission vehicles at the time of purchase, and they are exempt from the congestion charge for vehicles entering the London City center (5 pounds per day).

The new Prius has won numerous awards around the world including the Good Design Award 2003 and the 2003-2004 North American Car of the Year. In addition, support from users shows the extent to which Toyota has succeeded in raising consumer appreciation of hybrid vehicles.



Evolving Hybrid Systems

At Toyota, hybrid systems play a central role in environmental measures for the 21st century. Talk of an ultimate eco car calls to mind electric vehicles and fuel cell hybrid vehicles, but it should be understood that hybrid vehicles are not a transitional stage towards achieving an ultimate EV or FCHV. Hybrid systems can be used with gasoline engines, as the Prius is, or with other systems. The proliferation of high environmental performance vehicles will require the application of hybrid systems to minivans, SUVs and other vehicle series as well.

Unlike gasoline engines, the hybrid system is a new technology, and there is still plenty of room for improvement. According to Satoshi Ogiso, "Hybrid systems are approaching the transitional stage from emergence to development, which is why a change to the system can bring about a tremendous increase in performance. The THS II used in the new Prius achieves compatibility between fuel efficiency and driving performance. Hybrid systems still hold the potential for further evolution."

Further Proliferation of Hybrids

The issue that the new Prius had to confront was the further proliferation of the high environmental performance achieved by the first-generation Prius, and this was realized through improved driving performance. This was an obligatory task for the Prius, a forerunner to the ultimate eco car. When looking ahead to future prospects, the issue of further proliferation of environmental technologies will need to be addressed. Executive Vice President Akihiko Saito explains: "We believe that the proliferation of environmental technologies is essential. Proliferation is not something that Toyota can achieve on its own, and when considering the global environment, it is important that automakers from around the world work together. That is why we are considering disclosing technologies." This has so far led to the signing of licensing agreements with Nissan and Ford. Toyota will continue to work in the future with numerous automakers to promote the widespread adoption of



Executive Vice President Akihiko Saito discusses the proliferation of hybrid technologies

hybrid systems.

When looking at the history of the automobile from a long-term perspective, the role played by the gasoline engine cannot be overstated. No matter which theory regarding the size of fossil fuel reserves one subscribes to, it is certain that some day the reserves will run out. At that point, automobiles will be certain to adopt systems such as fuel cells. However, hybrid technology will be indispensable in making that system more efficient. The Prius (whose name is derived from the Latin for "prior to") will likely play a significant role in determining the current and future direction of the automobile.

Opinions from Various Quarters

Praise for the Prius from American Environmental NGOs

The new Prius has also received praise from American environmental NGOs concerned about global warming, automobile emissions, and dependency on oil. Some comments from different organizations are set forth below.

Sierra Club

The biggest single step we can take to curb global warming and oil dependence is to make cars that go further on a gallon of gas. Hybrids like Toyota's Prius show that we don't have to sacrifice good safety and performance to make a clean car that protects the environment.

Dan Becker,
Director, Global Warming and Energy Program

National Resources Defense Council

There is an emerging consensus that hybrids are key to solving our environmental and energy challenges. Any automobile company that wants to not just survive, but also thrive, over the next decade, must seize the lead on this critical technology. Judging by Toyota's Prius, it looks like Toyota is one company that really "gets it."

Roland Hwang,
Senior Policy Analyst

Union of Concerned Scientists

The new Prius will be the greenest mass-market car ever to hit the streets. By combining extremely low emissions of smog-forming pollutants with high fuel economy, the new Prius is a shining example of the gains possible with available technology.

Jason Mark,
Clean Vehicles Program Director



Consolidated Environmental Management

FY2003 marked the halfway point of the Third Toyota Environmental Action Plan (FY2001 - 2005). This opportunity was taken to review the overall activity of companies subject to consolidation, inspect progress and identify tasks to be tackled.

Looked at by business type, Toyota's consolidated Environmental Management System (consolidated EMS) has been firmly established at production companies, while at sales companies, the installation of the environmental management

promotion structure is almost complete.

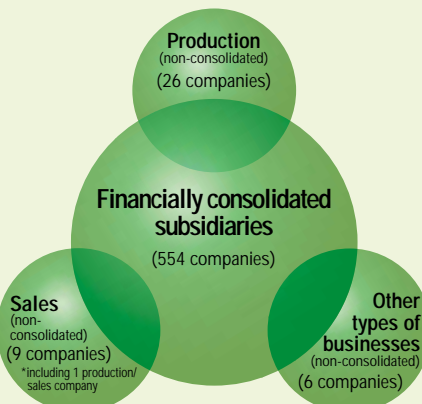
As well as initiating global audits of overseas production affiliates, Toyota Motor Corporation (TMC) took action to strengthen initiatives by companies subject to consolidated EMS by organizing Regional Production Environment Conferences together with those companies; conducting training programs for the persons-in-charge at the relevant companies; and confirming environmental response through the Toyota Customer Service Marketing Program (TSM).

Initiatives Toward Consolidated Environmental Management

In FY2000, Toyota started full-scale implementation of consolidated EMS, which unites Japanese and overseas companies involved in the production and sales of Toyota vehicles in concerted action.

Toyota considers it important that initiatives to reduce environmental impact are not implemented by TMC alone, but rather carried out on a consolidated basis involving all related companies, over the entire lifecycle of the vehicle — from development through production and sales. TMC presents its global environmental policy to all companies subject to consolidated EMS and offers guidance and support in sharing of best practices, exchange of expertise, conduct of audits, and other areas. Based on actual conditions in the relevant country or region, each of the companies subject to consolidated EMS is implementing environmental responses corresponding to the top level for their type and nature of business. The percentage of vehicles produced and sold by companies subject to consolidated EMS was unchanged from the previous year, at 100% and 91% respectively of worldwide Toyota production and sales.

Scope of Consolidated Environmental Management



Companies Subject to Consolidated EMS

The consolidated EMS covers a total of 594 companies¹. This includes not only all financially consolidated subsidiaries, but also major production companies, overseas distributors and others not subject to consolidated accounting.

In FY2003, due to changes in accounting standards, mergers and divestitures, and establishment of new operations, the number of subsidiaries and sub-subsidiaries changed as explained below. Although the number of financially consolidated companies changed, in terms of environmental response, environmental action will continue to be promoted at these companies as companies subject to consolidated EMS.

In Europe, for instance, 10 distributors became subsidiaries of TMME (Belgium). However, these 10 companies, while cooperating with TMME, will continue as before to be directly subject to monitoring by TMC under the consolidated EMS. Meanwhile, so that production companies in Japan which have ceased to be financially consolidated subsidiaries can nevertheless continue to take action within the framework of the consolidated EMS, a new fifth group consisting of parts manufacturers not subject to consolidated accounting has been established within the set of production companies subject to consolidated EMS.

Companies subject to consolidated EMS fall into the following four major categories:

- (1) 181 subsidiaries which are financially consolidated and under direct control of TMC
- (2) 34 major production companies and overseas distributors which are not subject to consolidated accounting (including one production/sales company)
- (3) 6 corporations² from other types of businesses³ with close relations to TMC
- (4) 374 financially consolidated subsidiaries, that are sub-subsidiaries of TMC

Environmental management at the companies in categories (1), (2) and (3) is promoted through coordination with TMC. With regard to the companies in (4), the companies in (1) control the sub-subsidiaries below them. Environmental management is promoted through

collective reports made to TMC.

Consolidated environmental management covers companies which, though not subject to consolidated accounting, respond to an invitation by TMC to participate based on the criteria listed below, and companies which, even if small in scale, independently express a wish to participate.

- 1) In the production area, companies with a certain production capacity that produce Toyota vehicles.
- 2) In the sales area, companies which meet a certain market scale and sales volume.
 1. As of the end of March 2004
 2. 6 corporations: Four educational corporations and one co-operative society, which also have a close relationship with TMC, and are subject to consolidated environmental management as well because they have a certain level of environmental impact. TOWA Real Estate Co., Ltd. has ceased to be a financially consolidated company but will continue to participate in the programs of the consolidated environmental management system.
 3. Other types of businesses: Holding companies, controlling companies, design companies, motorsports related companies, non-automotive business companies, etc.

TMC's Requirements from Companies Subject to Consolidated EMS

Production Companies

1. Jointly adopt the Toyota Earth Charter and draft individual environmental policies
2. Draft and promote an environmental action plan based on the guidelines presented by Toyota in July 2000, which specify reduction rates by region for CO₂ and substances of concern, waste, and water consumption.
3. Attain top level environmental responses based on actual conditions in each country and region

Sales and Other Types of Businesses

1. Jointly adopt the Toyota Earth Charter and draft individual environmental policies
2. Create an environmental management system; reduce environmental impact, make social contributions, and carry out environmental communication in line with facilities at each company or dealer and the nature of business
3. Attain top level environmental responses based on actual conditions in each country and region



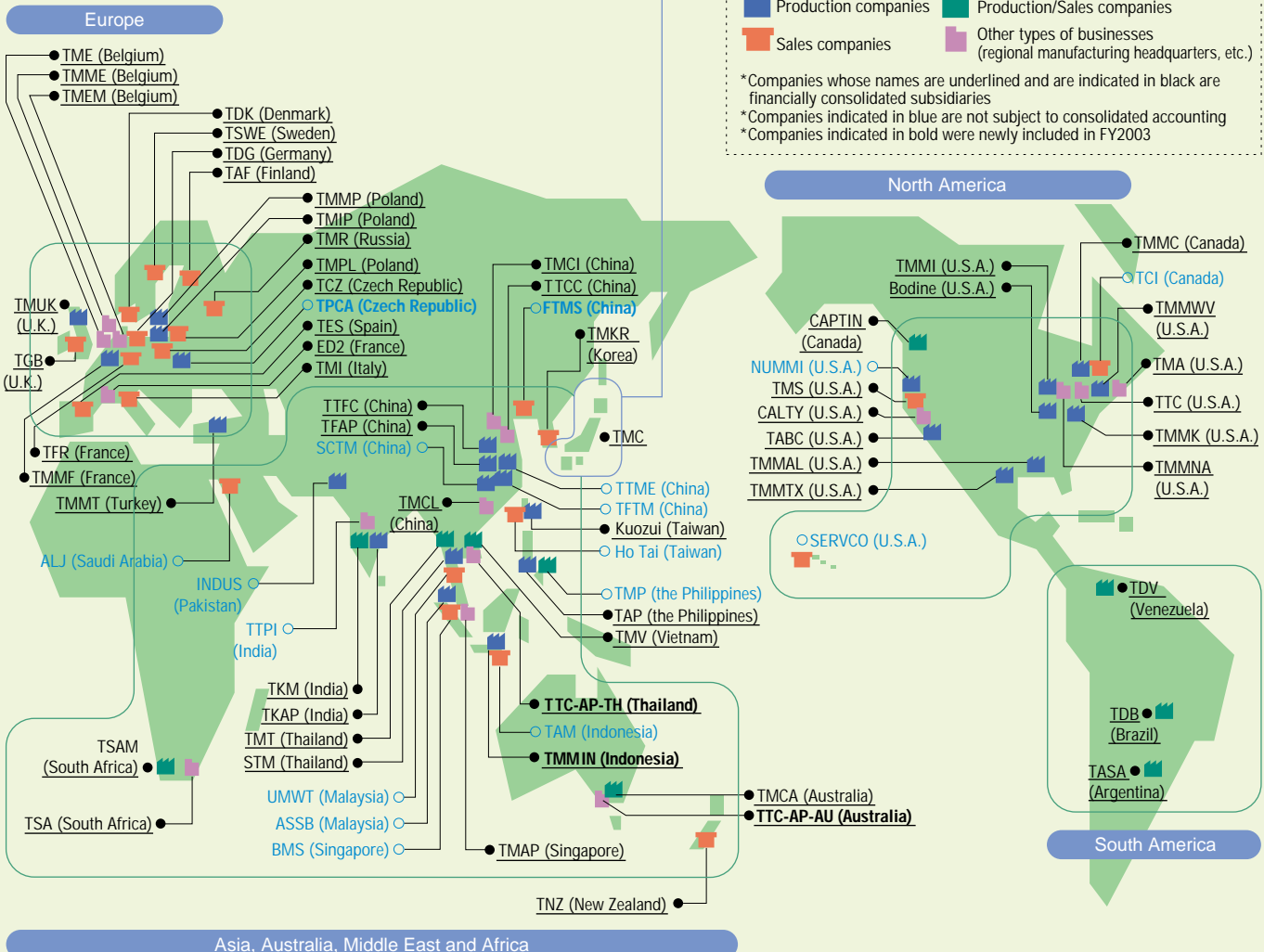
Main Companies Subject to Consolidated EMS

Japan

Production companies					Sales companies	Other businesses
(Group 1) • Consolidated subsidiaries • Automotive production companies • Toyota secondary companies	(Group 2) • Companies not subject to consolidated accounting • Main parts manufacturers • Body manufacturers, etc.	(Group 3) • Consolidated subsidiaries • Automotive production companies • Parts manufacturers	(Group 4) • Consolidated subsidiaries • Automotive-non-related companies • All products production companies	(Group 5) • Companies not subject to consolidated accounting • Parts manufacturers	Toyota Rental & Leasing Tokyo Co. Toyota Tokyo Parts Distributor Co., Ltd. Tokyo Toyota Co., Ltd., and others Total of 45 companies	Alphabetical order Aichi Rikun Co. Tacti Corporation Toyota Enterprises Inc. Toyota Modellista International Toyofuji Shipping Co., Ltd. Toyota Technocraft Co. Toyota Transportation Toyota Central R&D Labs, Inc., and others Total of 58 companies *Includes 6 companies that are not subject to consolidated accounting
Araco Corporation Central Motor Co., Ltd. Daihatsu Motor Co., Ltd. Hino Motors, Ltd. Kanto Auto Works, Ltd. Toyota Auto Body Co., Ltd. Toyota Motor Hokkaido, Inc. Toyota Motor Kyushu, Inc. Toyota Motor Tohoku, Inc.	Aichi Steel Corporation Aisan Industry Co. Ltd. Aisin AI Co., Ltd. Aisin AW Co., Ltd. Aisin Seiki Co., Ltd. Aisin Takaoka Co., Ltd. Denso Corporation Gifu Auto Body Industry Co., Ltd. Tokai Rika Co., Ltd. Toyoda Gosei Co., Ltd. Toyoda Machine Works, Ltd. Toyota Industries Corporation Toyota Tsusho Corporation Toyota Boshoku Corporation	Cataler Corporation Chuo Precision Industrial Co., Ltd. Horie Metal Co., Ltd. Kyoho Machine Works, Ltd. Yutaka Seimitsu Kogyo, Ltd. TakaNichi Co., Ltd.	Admatechs Co., Ltd. FEC Chain Corporation* Japan Chemical Industries Co., Ltd. Tokai Container Co., Ltd. Toyota Macs, Inc. Toyota Turbine and Systems Inc. Shintec Hozumi Co., Ltd.	Taiho Kogyo Co., Ltd. Toyoda Iron Works Trinity Industrial Corporation		
All-Toyota Production Environment Conference members		All-Toyota Production Environment Meeting members				

In FY2003, counting both Japanese and overseas affiliates, four production companies and four companies from other businesses were included under the scope of consolidated EMS, under direct control of TMC.

27 companies moved out of the scope of consolidated EMS due to exclusion from consolidated accounting resulting from a change in the equity share, or for other reasons. As a result, the total number of companies subject to consolidated EMS stands at 594.



FY2003 Action Policies and Results

Production Area (firm establishment of consolidated EMS)

In FY2000, quantitative management of consolidated EMS within Japan and overseas was started in the production area. In FY2003, action was taken focusing on measures to improve environmental performance such as reduction of CO₂ emissions and waste, and risk management. Companies subject to consolidated EMS engaged in action to fulfill the fiscal year goals set in their individual Environmental Action Plans. As a result, Toyota's consolidated EMS was firmly established and there has been a steady decrease in CO₂ emissions and substances of concern, and volume of waste and other items

generated by these companies as a whole.

Among the companies subject to consolidated EMS in Japan, the rate of attainment of performance targets was over 80%, while that among overseas companies was 90%. Among companies subject to consolidated EMS in Asia, South America, and other regions, the reduction of VOC emissions is still an issue, and TMC is implementing a strategy of active support. With the intention of strengthening risk management, TMC created a global audit system for overseas companies subject to consolidated EMS and has begun expansion.

Sales Area (installation of EMS implementation structure completed)

In the sales area, FY2002 was the starting year for the environmental management

system at sales companies subject to consolidated EMS. In the following year, FY2003, installation of the implementation structure was almost completed at companies subject to consolidated EMS in all countries.

As FY2003 marked the halfway point for the Environmental Action Plan up to FY2005, the opportunity was taken to inspect the level of progress and identify tasks to be tackled. It was confirmed that additional distributor support to dealers is necessary to handle the processing of waste and wastewater treatment.

*These dealers are not directly subject to consolidated EMS, but nevertheless are bearers of the Toyota brand. Following a survey carried out in FY2003, TMC will accelerate support to these dealers from now on.

FY2003 Results of Activities and FY2004 Policy

		FY2003 Action policy	FY2003 Activity results	FY2004 Policy
Production (76 companies)	Japan (39 companies)	<ul style="list-style-type: none"> Consistent actions to reduce CO₂ emissions, substances of concern, and waste; to conserve water resources; and to completely eliminate legal non-compliance and complaints by taking initiatives to reduce environmental risk 	<ul style="list-style-type: none"> Achieved the goals in more than 80% of the items Promoted proactive preventive measures, e.g., establishment of more stringent voluntary control standards Number of complaints: 4 Held the All-Toyota Environment Conference 10 times/year (Production Environment Conference: 5 times/year; Production Environment Meetings: 5 times/year) 	<ul style="list-style-type: none"> Take actions to achieve the highest production environment efficiency in each country and region, and strengthen risk management Develop a global 2010 action plan in order to define the actions to be taken as an environmentally advanced corporation
	Overseas* (37 companies)		<ul style="list-style-type: none"> Achieved the goals in 90% of the items. VOC remains an issue in some countries. Risk reduction (legal compliance) according to the priority item list in each region Number of complaints: 1 Held Regional Production Environment Conferences in Europe and South America. Combined with the conferences held in North America and Oceania in 2002, this means that conferences were held throughout the entire world in a period of two years. Began global audits 	
Sales (77 companies)	Japan (45 companies)	<ul style="list-style-type: none"> Follow-up on the establishment of the Toyota Japanese Dealer Environmental Guidelines (created in FY1999) Helping dealers prepare responses to the Automobile Recycling Law 	<ul style="list-style-type: none"> District Managers followed up on and confirmed guideline compliance by dealers nationwide In addition to the Toyota National Dealer's Advisory Council Environmental Committee and subcommittees, established working groups consisting of staff from dealers (employees from directly-managed outlets also participated) and finished developing action guidelines (communicated nationwide in February) 	<ul style="list-style-type: none"> Ensure that frontline workers at dealers are fully trained in the requisite actions to comply with the Automobile Recycling Law Hold nationwide information meetings and develop tools to promote the understanding of employees in various positions Promote preparations with the participation of District Sales Managers
	Overseas* (32 companies)	<ul style="list-style-type: none"> Establishment of environmental management systems at overseas distributors (including logistics centers) and guidance to dealers regarding environmental actions through distributors 	<ul style="list-style-type: none"> Promoted establishment of environmental management systems at overseas distributors (16 out of 32 companies acquired ISO 14001 certification) Issued environmental guidelines to dealers and confirmed the status of responses Issues remain with wastewater treatment and waste processing at some dealer service shops (13 countries: Asia, China, and South America, etc.) 	<ul style="list-style-type: none"> Support each company to ensure achievement of its 2005 Plan Ensure legal compliance of dealer service shops Strengthen TMC's structure for promoting environmental action
Other (77 companies)	Japan (58 companies)	<ul style="list-style-type: none"> Drafting of environmental action plans by individual companies and voluntary implementation 	<ul style="list-style-type: none"> Individual companies established annual plans and are promoting them 	<ul style="list-style-type: none"> Further strengthen voluntary actions by individual companies
	Overseas* (19 companies)			

*Nine companies that perform both production and sales are included in both categories

Note: The number of companies also includes newly participating companies that will begin taking action in the future



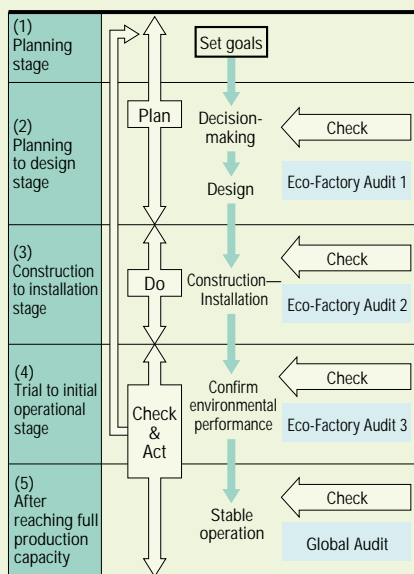
Support to Companies Subject to Consolidated EMS

Production and Logistics

Eco-Factory Activities

In FY2003, TMC began implementing Eco-Factory Activities in the construction of new plants and for major renovations and extensions of existing plants. These activities are designed to firmly integrate environmental response from the planning and design stage through to the start of operations, as TMC aims to have world leading production affiliates in all countries and regions.

Flow Chart of Eco-Factory Activities



(1) Planning stage

On the basis of benchmarking with affiliates in Japan and overseas, and with the aim of occupying the leading position in each country or region, goals are set for items such as CO₂ emissions reduction, reduction of substances of concern and waste and conservation of water resources. Also included, as a strategy for reducing environmental risk, are definite measures to ensure the installation of dykes and other devices to prevent leakage of oil and other hazardous substances and to prevent soil and groundwater contamination.

(2) Planning to design stage Eco-Factory Audit 1

Facility planning divisions undertake detailed studies aimed at achieving goals and formulate an environmental strategy that is integrated into the design. An internal written audit is conducted to check whether the necessary items for the achievement of the goals have been integrated into the design.

(3) Construction to installation stage Eco-Factory Audit 2

An internal, on-site audit is carried out to check whether the environmental strategy facilities stipulated in the design have been installed.

(4) Trial to initial operational stage Eco-Factory Audit 3

Checks are conducted to confirm whether the environmental strategy facilities are capable of providing the performance stipulated in the design.

(5) After reaching full production capacity Global Audit

Checks whether the goals stipulated at the planning stage have been met.

Measures will be taken immediately to correct any irregularities occurring in items (1)-(5) above, and these will be used as feedback for projects in the next business period.

In FY2003, new goals were set at five affiliates on the basis of Eco-Factory Activities, including TMMTX (U.S.A.), TMIP (Poland), and TFTM Plant 2 (China).

At TMMTX, for example, a layout has been planned that takes the natural environment into consideration, and the use of natural energy and recycled materials is also being studied. Similarly, at TFTM Plant 2, goals such as the use of water



Area surrounding TMMTX

borne paints in the painting process, a first for a Chinese automobile plant, were set with the aim of becoming China's leading environmentally considerate plant.

Eco-Factory Audit 1 has been carried out at two affiliates: TMMP (Poland) and TPCA (Czech Republic). At TPCA, it was confirmed that planning included strategies for achievement of the goals; these include the introduction for the first time at a Toyota overseas affiliate of water borne paints for



Eco-Factory Audit

the primer coat in the automobile painting process.

Eco-Factory Audit 2 has been carried out at one affiliate, TMMBC (Mexico), where, on-site inspection confirmed that environmental risk reduction measures had been implemented and that the items necessary for the improvement of environmental performance had been included.

Affiliates where Eco-Factory Activities are being conducted are listed in the table below.

List of Affiliates where Eco-Factory Activities are being Conducted

North America	TMMBC (Mexico)
	Bodine Aluminum Plant 3 (U.S.A.)
	TMMTX (U.S.A.)
Europe	TMMP (Poland)
	TMIP (Poland)
	TPCA (Czech Republic)
China	FTCE
	TFTM Plant 2
	TFTD
	GTE
	New automobile production plant in Guangzhou

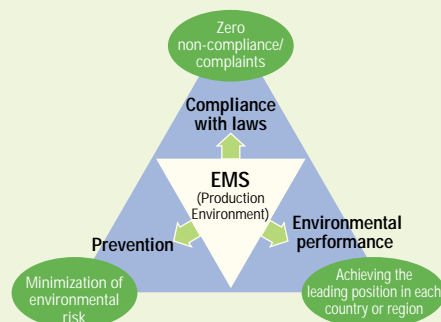
Global Audits

In order to enhance the environmental management systems (EMS) of existing affiliates, TMC has begun a Global Audit System, as a measure separate from the regular ISO 14001 audit, whereby environmental experts from the Head Office will carry out an audit once every three years. The main aim is to promote implementation of the following three items:

- (1) Zero instances of non-compliance and zero complaints
- (2) Minimization of environmental risk
- (3) Improvement of environmental performance with the aim of achieving the leading position in each country or region

For the moment, TMC is conducting global audits at overseas production affiliates, but in the future, the plan is to apply the same audit to production affiliates in Japan as well.

Initiatives Toyota is Aiming to Achieve in the Production Environment Area



Regional Production Environment Conference Completes "World Tour"

The 3rd Overseas Regional Production Environment Conference was held in September 2003 at TMMF (France), and the 4th at TASA (Argentina) in November of the same year. Following the Oceania and North American conferences held in FY2002, the conference has now made its way completely around the world.

The 3rd conference, organized jointly with the European Environment Committee Production Working Group, was attended by some 40 delegates from seven production companies in Europe. Since delegates from three production/sales companies attended the 4th conference held in South America, a sales session was also held from the perspective of strengthening environmental responses in the sales area.

Details of the Overseas Regional Production Environment Conferences

3rd conference (September 2003) France, Europe	<ul style="list-style-type: none"> Executive Message concerning Global Production Environment Report on environmental initiatives by each production affiliate Plant visit
4th conference (November 2003) Argentina, South America	<ul style="list-style-type: none"> Executive Message concerning Global Production Environment Report on environmental initiatives by each production affiliate Plant/Dealer visit



South American Regional Production Environment Conference

Promotion of Global Management of CO₂ Emissions in Logistics

TMC is promoting global management of CO₂ emissions by identifying and monitoring CO₂ emissions in logistics in Japan and overseas. Each affiliate first identifies the volume of CO₂ emitted during its logistics operations, on the basis of which it then sets a reduction goal and takes action. In FY2002, the method of implementation at overseas affiliates was decided. TMC issued guidelines for the method to be used to identify CO₂ emissions volumes. Reduction activity is implemented by the individual affiliates.

Education

Environmental Education for Overseas Affiliates

TMC held two training sessions in Japan for staff responsible for environmental issues at six Chinese affiliates — five production affiliates and one coordination affiliate. The aim was for participants to deepen their awareness of environmental protection as Toyota employees and draft an environmental action plan at an early date. At the first session, held in October 2003, fundamental training was carried out. At the second session, held in April 2004, in addition to on-site training, the content of each company's environmental action plan was verified and training was conducted regarding responses to issues being faced by each company.



Training session for staff from production companies in China

TMC provided assistance to a sales company subject to consolidated EMS for a training session in China for District Managers in charge of dealer development and after-sales service. The sessions were held in three locations, Beijing, Chengdu, and Guangzhou, and were attended by a total of 70 people. FTMS (China) has stipulated in its dealer contract the strict adherence to environment-related laws and regulations in China. (Please see p. 59)

Environmental Education for Asia Appointees

In November 2003, as one part of a training program for employees due to be appointed to posts in other Asian countries such as Thailand, Vietnam, and Malaysia from January 2004, training was provided concerning the status of progress of Toyota's environmental responses in Asia. The importance of environmental initiatives in the Asian region and the progress made in each country were explained. A total of 26 people participated.

Sales Area

Full-scale Operation Begun of TSM Program

TMC began full-scale operation of the Toyota Customer Service Marketing Program (TSM), into which five environmental evaluation items were incorporated. The program encompassed 2,745 dealers worldwide (excluding those in Europe and North America), of which approximately 15% received certification (Europe and North America operate their own certification systems). Two assessments of dealers subject to the program were carried out. In the second assessment, the benefits of the program were confirmed, with TMC finding that over 90% of the dealers were in compliance with the environmental evaluation items. TMC is promoting the implementation of TSM with the goal of having 80% of dealers in the targeted regions certified by 2006.

Further, TMC created and distributed a B & P Shop Evaluation Guide and Worksheets manual that illustrates the importance of environmental investment, approaches to processing of waste and wastewater treatment at service shops, facilities and equipment, and a Toyota Training Center Body & Paint Facility Planning Guide covering areas that include investment in facilities to deal with environmental issues. A Dealer Evaluation Guide and Worksheets Manual that covers subjects ranging from dealer response regarding environmental risk to rollout of environmental strategy was also created and serves as a tool to enhance communication.

Compliance Rates for TSM Environmental Evaluation Items

	Additional Items	Before introduction of TSM	After improvements
1	Appointment of staff with responsibility for environment issues	45%	93%
2	Legal compliance; stated commitment to reduction of substances of concern	56%	90%
3	Appropriate processing of hazardous substances	72%	90%
4	Appropriate treatment of wastewater	74%	88%
5	Installation of CFCs/HFCs recovery equipment	76%	91%



Toyota Customer Service Marketing Program and Toyota Training Center Body & Paint Facility Planning Guide



Environmental Initiatives at Companies Subject to Consolidated EMS

Production / Logistics Area and Facilities

Maintaining Zero Landfill Waste Since Plant Operations Began

Since it began operations in 2003, the North American engine production plant TMMAL has maintained a record of zero landfill waste through the incorporation of environmental impact reduction measures into the production process from the planning stage. For example, in order to promote the recycling of the mixture of metal and oil discharged when polishing metals, machinery was introduced to separate the metal and oil. Currently, TMMAL is involved in efforts to reduce waste that is incinerated for thermal recovery.

Promoting the Reduction of VOCs at Overseas Production Affiliates

As part of consolidated EMS activities, TMC is making efforts to reduce emissions of volatile organic compounds (VOC) contained in paint solvents and other substances used at overseas affiliates. TMC aims to become "No. 1 in the World" for VOC reduction, and has designated three affiliates, TMMF (France), TMCA (Australia), and TSAM (South Africa), as model affiliates. Steps are being taken to identify VOC emission sources and emission mechanisms, develop advanced VOC reduction technology, and improve painting operations. After the benefits of these measures are fully understood, standardized procedures will be established to be extended to other affiliates.

Meanwhile, in order to promote exchange of information between affiliates, TMC is working to enhance information sharing and promote improvements. Best practices of VOC reduction from different companies are published in the Environmental Information Network System from where they can be accessed; or introduced as examples of improvements through videos. In FY2004, as well as continuing with action to reduce VOC emissions, TMC plans to set goals for action up to 2010.



"No. 1 in the World" for VOC reduction

Identifying and Monitoring CO₂ Emissions in Logistics

In FY2003, TMS, Toyota's sales company in North America, and TMMNA, a production company, carried out on a trial basis their first identification of total CO₂ emissions in processes from procurement of parts to transport of service parts and completed vehicles. At TMS, CO₂ emissions are monitored on a monthly basis. The TMS Logistics Division CO₂ emissions volume for 2003 was 195,000 tons, 77% of which was from the transport of completed vehicles.

Construction of Headquarters Building with Low Environmental Impact

TMS and TMCA have built headquarters buildings with due consideration for the environment.

When expanding its headquarters, TMS installed a 536kw photovoltaic solar energy system that covers around 20% of all electric power consumed, while reducing CO₂ emissions by as much as 167 tons annually. Water saving features include drip irrigation, drought-tolerant plantings, low-flow toilets and waterless urinals, etc. Annual water consumption has been reduced by 44 million liters. Of the waste generated by the construction work, 96% was recycled. In recognition of these actions, TMS was awarded the Green Power Leadership Award for Onsite Generation by the U.S. Environmental Protection Agency (EPA), and the 2003 Governor's Environmental and Economic Leadership Award by the California Environmental Protection Agency.

TMCA meanwhile adopted a rainwater recycling system and high-insulation construction. Using a 350,000 liter underground rainwater tank, the water collected is used for garden watering. Also, specially designed insulation, shading and air conditioning, and a double-glazed atrium maintain daytime temperature at a comfortable level.



TMS headquarters building with low environmental impact

Photo : Adrian Velicescu

Products

Promoting the Introduction of Low-Emission Vehicles

In the U.S.A., Toyota introduced the Camry, Solara and ES300 as vehicles that meet the Federal Tier II regulations and California LEV II regulations and the Prius as an AT-PZEV (Advanced Technology Partial Zero-Emissions Vehicle) compliant vehicle.

In Europe meanwhile, as vehicles to meet Euro4 regulations, Toyota began sales of the gasoline-powered vehicles Prius, Previa, Avensis, RAV4 and Avensis Verso and the diesel-powered vehicles Corolla and Avensis. The Avensis range also includes a model with the DPNR (Diesel Particulate NOx Reduction) system.



Euro4 compliant Avensis with DPNR

Expansion of ISO 14001 Certification

With regard to ISO 14001 certification, Toyota promotes the implementation of activities to acquire certification and other activities in line with its management system, as an opportunity to review compliance, improve the transparency of activities, and raise the environmental awareness of employees, thus aiming to achieve ongoing improvement of environmental performance.

In FY2003, on the overseas front, certification was acquired by six companies — the holding company TME, TMEM (Belgium), which supports and co-ordinates Toyota's European manufacturing operations, the production company TMMP (Poland), the distributors TFR (France), TMI (Italy), and the motor sports company TMG (Germany). In Japan, two companies, Toyota Mapmaster, a company that makes maps for car navigation systems, and Towa Real Estate, acquired certification. With the support of overseas distributors, 21 dealers in Taiwan, Argentina, India, Italy and elsewhere have also gained certification.

Number of Companies in Japan and Overseas that have Acquired ISO Certification

	Production companies	Production/sales companies	Sales companies/Other types of businesses
Japan	34	—	20
Overseas	20	8	13

*The number of companies differs from last year due to a review of classification of production/sales companies

Sales

Implementation of Environmental Responses at Service Shops

In order to complement the public waste processing infrastructure, TMV (Vietnam), with the participation of all seven dealers has established a system for collection and recycling of waste oil and oil containers discarded at its service shops. Used containers are recycled as wastewater pipes. With a view to reducing the generation of waste, TMV's future policy is to convert to bulk supply of oil to reduce the number of waste containers.



Recycling of oil containers by TMV

In Taiwan, eight Toyota dealers operate a total of 125 service shops. With the cooperation of the distributor Hotai Motor Co., Ltd, each dealer acquired ISO 14001 certification for its head office and one model service shop. In FY2004, in order to accelerate the adoption of EMS by the dealers, TMC plans to move forward with the certification of another nine bases, at least one from each dealer, and to roll out

EMS introduction expertise to all service shops.



All Taiwan dealers have acquired ISO 14001 certification

At TMT (Thailand), the scope of certification was extended in FY2003 from the already included plants to parts centers, training centers, vehicle distribution centers, BP (body and paint) subsidiaries, and other non-production divisions. At the training center, one of the ongoing activities is to make the incorporation of environmental education into training programs an ISO 14001 environmental target.

TMT is also promoting the acquisition of ISO 14001 certification by its dealers. Of 241 service shops at 90 dealers, 65 service shops of 52 dealers plan to acquire certification by the end of FY2004. As well as providing in-house expertise, TMT will also cover part of the expenses for acquisition of certification.



The kickoff ceremony for the Thailand ISO 14001 certification was attended by Industry Minister Mr. Pinij Jarusombat. To the left is TMT President Sasaki and to the right is Mr. Wiboonchai, Chairman of Toyota Dealers Club

Promotion of Recycling of End-of-life Vehicles in Europe

In Europe, an EU directive has been issued making it compulsory to recycle end-of-life vehicles. The incorporation of this directive into the law of the various countries of Europe is proceeding. In countries where the law has been introduced, vehicles sold on or after July 1, 2002, must be covered by a system for appropriate treatment and recycling, the costs of which may not be charged to the last owner. From 2007, this system will be extended to all vehicles.

TME (Belgium) is cooperating with distributors in the various countries to adapt to the laws of the relevant country. In concrete terms, in the 25 EU countries, including the new EU accession countries, and in neighboring countries which are considering the introduction of equivalent laws, TME is working with dismantling companies, shredding companies, dealers and other parties to establish an ELV collection center for Toyota vehicles.

Increased Issuance of Environmental Reports by Overseas Affiliates

The number of companies subject to consolidated EMS issuing regional environmental reports increased from seven countries and regions in FY2002 to nine. Argentina and South Africa also issued environmental reports and began

disclosure of environmental information. As a result, environmental information of about half of Toyota's overseas affiliates, or regions that account for 83% of all Toyota vehicles sold, is disclosed through environmental reports.

In order to further provide support to overseas affiliates in preparing environmental reports TMC prepared and distributed an

environmental report template. The template provides a format of essential items to be included, and information and quantitative data to be disclosed in the environmental report. An eight-page report can be easily prepared simply by inputting relevant data and examples from the company.

Environmental Reports Issued by Overseas Affiliates

Region	Main features/URL
Europe	Summarizes the activities of European affiliates; third report http://www.toyota-europe.com
North America/Canada	Summarizes the activities of North American affiliates; fourth report (U.S.A.) http://www.toyota.com/environment (Canada) http://www.toyota.ca
Argentina	First environmental report published in FY2003 http://www.toyota.com.ar
Australia	Third report; published as Environment and Community Report in FY2003 http://www.environment.toyota.com.au
Thailand	Environmental report published since FY2002; second report published with enhanced content http://www.toyota.co.th/red/en/
South Africa	First environmental and social report published in FY2003

* Taiwan: published every other year; next issue in FY2004;

India: currently creating FY2003 environmental report (http://www.toyotabharat.com/media/in/en/images/about/env_rpt_2003.pdf); the Philippines: will publish its first environmental report, the first in the Philippine auto industry



Environmental reports issued by overseas affiliates



Global Environmental Data

Energy consumption per vehicle has decreased due to global expansion and steady implementation of improvements by each company.

	2000	2001	2002	2003
No. of companies	54	54	56	57*

*TDV (Venezuela) and TMMF (Poland) have been included under the scope of consolidated EMS, while T&K has been excluded from the scope of consolidated production, for an increase in the number of companies subject to consolidated EMS by one compared to the previous year.

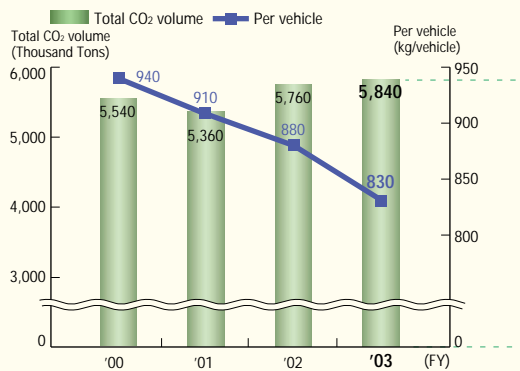
Notable features of FY2003

CO₂ emissions: CO₂ emissions per vehicle decreased due to the introduction of innovative energy conservation technologies, process merging and discontinuance and energy conservation activities on a day-to-day basis.

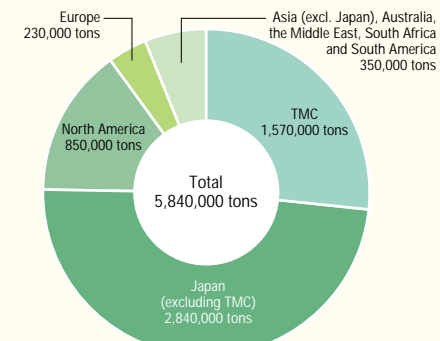
Waste: Both the total volume of waste and volume of waste generated per vehicle decreased due to measures implemented at the source and thorough sorting of waste.

Water consumption: Water consumption per vehicle decreased due to measures such as eliminating the washing process, preventing leaks, and reusing water.

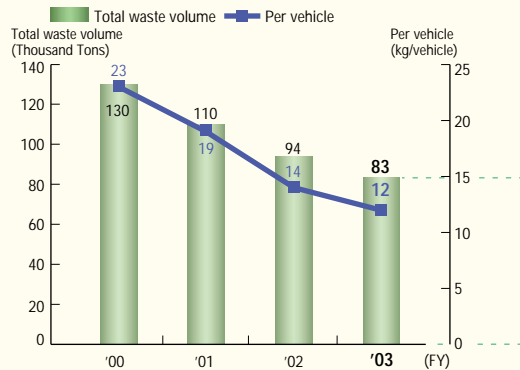
CO₂ Emissions Volume



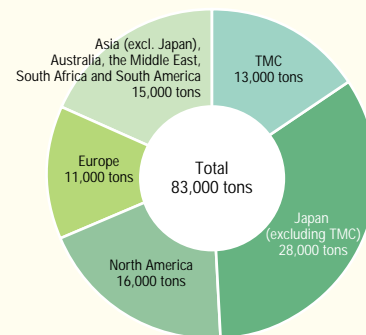
Breakdown of CO₂ emissions volume in FY2003



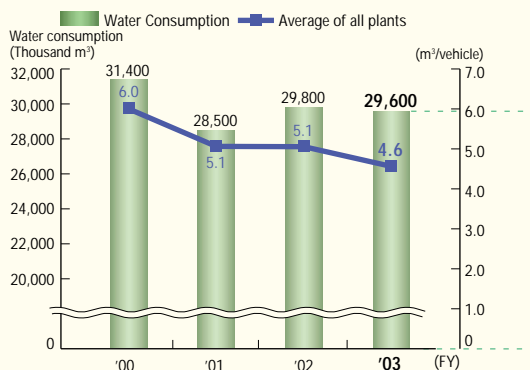
Volume of Waste Generated



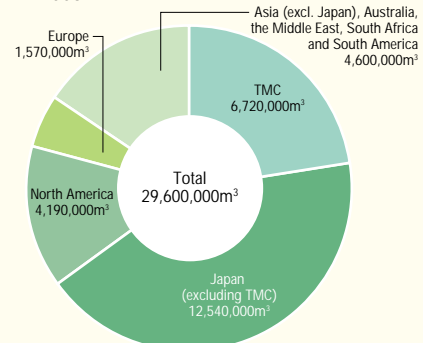
Breakdown of waste generated in FY2003



Water Consumption (Vehicle Assembly Plants)



Breakdown of water consumption (vehicle assembly plants) in FY2003



Note 1: The number of units produced increased by 8% compared to the previous year

Note 2: Data from production companies in China is not included above because they have just started operations

Note 3: For CO₂ emissions volumes overseas, the Japanese indicators are referenced and calculations are made from energy consumption volumes (CO₂ [Tons-CO₂] = energy [GJ] x 0.0767)

Central Motor Wheel Co., Ltd. (Anjo City, Japan)

Taking Global Environment Preservation Actions and Building Environment Management Structures at Overseas Bases

Central Motor Wheel Co., Ltd. (CMW) was established in 1939 in Anjo City, Aichi Prefecture, and currently has 1,100 employees. In 1942, the company began producing wheels for automobiles, and is now producing steel and aluminum automobile wheels, as well as LPG tanks. At present, CMW has its head office in Anjo City, two plants in Toyota City, and production bases in the U.S.A., Thailand, Indonesia, and Taiwan.



Central Motor Wheel Co., Ltd. head office

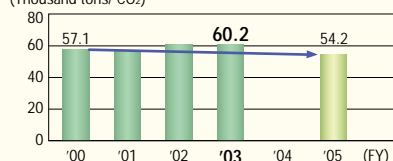
Environment Preservation Initiatives

Central Motor Wheel Co., Ltd. acquired ISO 14001 certification in September 2001. Company-wide goals have been set, including at plants for reducing environmental impact, such as the reduction of CO₂ emissions and the volume of waste generated, alongside the promotion of environment preservation

activities. In order to implement these actions and manage progress, an environment committee has been established at each plant in Japan and overseas. Working groups focused on individual goals have also been set up as sub-organizations. These working groups collaborate with various divisions to increase the level of environment improvement activities.

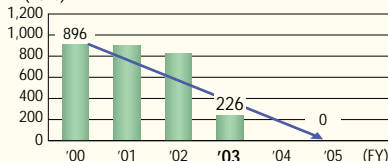
Reduction of CO₂ Emissions

(Thousand tons/CO₂)



Reduction of Landfill Waste

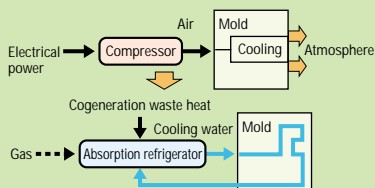
(Tons)



Environmental Initiatives in Japan

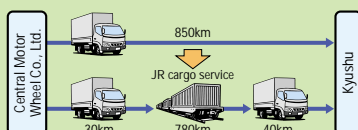
Modification of the Method Used for Cooling Aluminum Casting Molds

By switching the medium for cooling aluminum wheel casting molds from air to water cooled by the waste heat from cogeneration, electrical power needed by compressors was reduced, thus reducing CO₂ emissions by 80% from 325 tons a year to 60 tons a year.



Reduction of CO₂ Generated in Logistics through a Modal Shift

CMW had been using trucks for transporting products to Kyushu. However, by also using the Japanese Railway (JR) cargo service, CO₂ emissions were reduced by 80% from 96 tons a year to 19 tons a year.

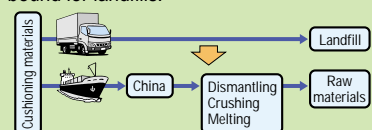


Sludge Volume Reduction through Dehydration and Recycling

Dehydrated sludge, which accounts for 60% of the landfill waste generated, still contains as much as 85% moisture and is difficult to process. Therefore, a dryer to reduce the moisture content to 30% was introduced, and as a result, it became possible to recycle the dried sludge as a raw material for cement. CMW is working toward completely eliminating the sludge bound for landfills by FY2005.

Recycling of Cushioning Materials

In the past, the cushioning materials used in product packaging had to be disposed of in landfills because they consisted of sponge and other material glued to PE resins, which were difficult to separate. After collecting information from around the world on ways to effectively recycle these materials, a company that separates and recycles them as raw materials for plastic was found in China, thereby completely eliminating these cushioning materials from the waste bound for landfills.



Environment Preservation Initiatives at Overseas Plants

An executive decision made in November 2000 mandated that all of CMW's overseas plants acquire ISO 14001 certification by December 2003. Environmental policies and environmental objectives/goals were established based on this decision. Beginning in FY2001, regular on-site meetings were held to help its overseas plants respond to various issues. As a result, all of them have successfully acquired ISO 14001 certification.

Environmental Actions at CMWI (Indonesia)

At CMWI, immediately following the completion of plant construction, initiatives to begin building an environment management system (EMS) were promoted and actions to limit CO₂ emissions and the volume of waste generated were vigorously advanced from the start of operations, based on close cooperation between the local employees and Japan. As a result, CMWI has been steadily achieving its goals in these two areas.



Scene from an environment committee meeting

Communication with Society

Trainees from Indonesia (CMWI) were invited as "regional teachers" to the Shiki Elementary School in Anjo City. After describing the environment preservation actions being taken overseas, they taught the students greeting words in the Indonesian language, and deepened cultural exchange by playing games from both countries.



Trainees answering questions



FTMS (Beijing, China)

Environmental Responses Laid Down as Core Management Issue Since Inception

FAW Toyota Motor Sales Co., Ltd., (FTMS) is a joint venture (49% of investment provided by Toyota) founded in September 2003 by TMC and a local Chinese partner China FAW Group Corporation (FAW). FTMS employs 360 employees and takes charge of the whole field of sales-related activities, including sales and after-sales service of Toyota brand vehicles and parts/accessories produced in China, leasing of vehicles, and operational guidance to dealers. Since its establishment, FTMS has positioned the environment as a major issue and is promoting environmental initiatives.

Active Introduction of Low-Emission Vehicles

When setting its policy on environmental response, FTMS positioned the environment as the most important issue in the establishment of its operations in China. Working together with staff on assignment from TMC's local partner FAW, which is China's largest automotive company, FTMS is taking active measures in the area of environmental response.

Vehicle series launched on the Chinese market are subject to environmental regulations. In specific terms, where legal requirements are for compliance with Euro 2 regulation levels, FTMS wherever possible launches vehicles with environmental performance on par with Euro 3 regulations. As an example, the environmental performance of the VIOS, Toyota's first passenger car to be manufactured in China, corresponds to the Euro 3 level.



VIOS

Environmental Response Incorporated in Selection of Dealers

FTMS is also devoting its energies to environmental responses in the area of sales, with a wide range of activities being rolled out. A survey of China's environment-related legislation was completed in December 2002, and compliance of Chinese environmental law is made a clear condition of dealer agreements.

In August 2003, on the basis of the survey of environmental legislation, the Toyota China Environmental Response Guidelines (draft) were formulated. In September of the same year, on the basis of these guidelines and with the cooperation of the State Environmental Protection Administration

of China, environmental education was provided for district managers in charge of sales and after-sales service who provide support and guidance to dealers. A questionnaire on the status of environmental initiatives at all dealers was also conducted. Currently, district managers are engaged in a survey of the practicality of the guidelines. As soon as this is confirmed, an official set of guidelines will be enacted.



Toyota China Environmental Response Guidelines (draft)

Strengthening Environmental Initiatives at Dealers

As well as the activities described above, support to dealers includes assistance in the purchase of CFCs/HFCs recovery equipment. Since September 2002, FTMS has participated in a related TMC assistance plan and 40 more dealers have been provided with CFCs/HFCs recovery equipment. As of May 2004, 127 dealers had been equipped,



Training for dealers in the use of CFCs/HFCs recovery equipment



FTMS management at Corolla press launch

accounting for 90% of all dealers.

Looking to the future, FTMS plans to establish an implementation structure for environmental activity in all divisions and to strengthen action in-house, and also to implement further support to dealers. To assist dealers, FTMS will select a model dealer for concentrated guidance and then roll out examples of best practices to other dealers. In this way, FTMS seeks to enhance the level of environmental response across all Toyota dealers in China.



Training for district managers in charge of providing guidance to dealers

Environment Month Events Coordinated with TMC

During a one-month period from September to October 2003, Environment Month activities were held in-house. These included in-house environmental education, office environmental response declarations, environmental knowledge contests, talks on eco-cars, screening of environmental films, and other events to raise employee environmental awareness.



Environment Month event (talk on eco-cars)

Example of Environmental Initiatives

TMI (Rome, Italy)

ISO 14001 Certification and Active Support to Dealers

Toyota Motor Italia SpA (TMI) has been a National Marketing and Sales Company of Toyota brand vehicles since 1993 and for Lexus brand vehicles since 1998. TMI currently employs some 190 people. Sales have increased steadily and in 2003 TMI sold over 125,000 vehicles accounting for 5.6% share of the Italian car market. The dealer network includes 115 Toyota dealers and 23 Lexus dealers. With 239 sales outlets and 216 service points, the sales network is expanding.

Establishment of an Environmental Management System

TMI is actively working to continually improve its environmental performance by undertaking the actions included in the environmental action plan issued in 2002.

Among the items covered in the TMI environmental action plan are the establishment of an Environmental Management System, enhancement of support to dealers to raise their environmental awareness, improvement of the environmental performance of dealers, and effective response to issues relating to the disposal of end-of-life vehicles.

In 2003, in order to properly control and continually reduce the environmental impact caused by its business activities, TMI acquired ISO 14001 certification. The certification covered the TMI Head Office, the Parts Warehouse, and the Training Center.



Presentation of ISO 14001 certification

Under ISO 14001, the environmental targets listed below were set. Activities aimed at achievement of the 2004 targets are now in progress.

- Introduction of low-consumption lighting systems and sensors to detect human presence to achieve a 2% reduction in consumption of electric power
- Increased communication via computer with dealers and promotion of re-use of office paper to achieve a 5% reduction in paper and toner usage

- Installation of rainwater collection tanks to reduce the amount of supplied water used for washing vehicles and watering gardens
- Introduction of waste sorting in offices, rest areas, and canteens, and sorting into a larger number of categories to increase the waste recycling rate by 20%



Installation of rainwater collection tanks to use rainwater for washing vehicles and watering plants

Support for Environmental Action by Dealers

In 2003, TMI issued the second version of its Dealer Environmental Guidelines. The guidelines were distributed to all TMI dealers with the aim of enhancing dealer awareness of the importance of environmental conservation and of providing dealers with strategic knowledge, particularly of waste management legislation.

In 2003, a program to support Toyota vehicle dealers in the introduction of environmental management systems was initiated. The ultimate goal is the acquisition of ISO 14001 certification by dealers. The first phase of the program, involving appointment at all dealers of staff with responsibility for the environment, is already complete. In 2004, as part of the dealer support strategy, the following items are planned:

- Training of staff with environmental management responsibility by an environmental consulting company
- Provision of funds and expertise for acquisition of ISO 14001 certification



TMI's new Head Office building completed in April 2002



Acquisition of ISO 14001 certification by dealers (Farcauto, the first Italian Toyota vehicle dealer to acquire joint ISO 9001 and 14001 certification)

Improvements at TMI Parts Warehouse Based on ISO 14001



New batteries storage area



Re-use of wooden pallets. Damaged pallets and wooden structure of carton boxes are recycled



Recycling of damaged carton boxes as filling material



Motivation and Enthusiasm of Women Involved in Toyota's Environmental Responses

Toyota has been advancing its environmental responses through the introduction of consolidated environmental management in Japan and overseas since 2000. Toyota's environmental responses have been bolstered by the enthusiasm and motivation of the environmental officers in each country, particularly the women involved, who engage in initiatives with a passion. Some of the female environmental officers active in countries and regions throughout the world are introduced below.

Women in Asia Work Energetically while Balancing Career and Family

The women involved in promoting Toyota's environmental improvements in the rapidly growing Asian market are always forward-looking and full of enthusiasm. Ms. Wu Chiu-lan, who works for Ho Tai Motor Co., Ltd., TMC's distributor in Taiwan, is involved in the acquisition of ISO 14001 certification. On her own initiative, Ms. Wu studied on weekends and during her summer vacation to receive qualification as an environmental auditor. She played a major role in the acquisition of ISO 14001 certification by the company's logistics center. Currently, she is actively involved



Ms. Wu Chiu-lan from Taiwan inspects wastewater treatment facilities at a dealer

in efforts to have all domestic dealers obtain ISO 14001 certification. When asked about who takes care of her child, since her husband also works, Ms. Wu smiles and says that her father-in-law is in charge of babysitting.

At the center of Toyota's Asian operations is Toyota Thailand Co., Ltd. (TMT), which possesses the dual functions of production and sales, and is applying to the logistics and sales areas the environmental improvement know-how developed in the production sector. Ms. Suvisar, who joined the company ten years ago, is in charge of promoting environmental management in the sales area. She even drives to dealers located some 400km from Bangkok to help with employee training and conduct internal audits, and is crisscrossing the country on a daily basis. Ms. Suvisar is also a mother, and support from her own mother makes it possible for her to continue working, but, just like any other loving mother, wherever she goes she keeps a photo of her beloved daughter near at hand.

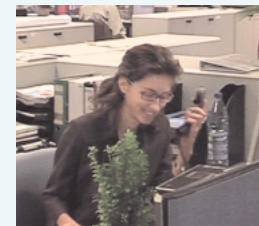


Ms. Suvisar (left) at the ceremony granting ISO 14001 certification for the first time to a Thai Toyota dealer

Ms. Liu Ying of FAW Toyota Motor Sales Co., Ltd., (FTMS) tries to balance life as a newlywed with her career, as she travels throughout the regions of China as part of her job. She is actively involved in persuading selected or newly established dealers to give due consideration to environmental aspects when they set up service shops for the first time. In the summer of 2003, she single-handedly put together the Toyota China Dealers Environmental Guidelines for dealers, which details such things as the steps involved in the appropriate disposal of waste oil.

Changing Not Only the Company but Society as Well

Women also play a prominent role in Toyota operations in North America and Europe. Ms. Manuela Ojan is an environmental manager in charge of analysis and strategy within the TME (Belgium) Environmental Affairs Division. In addition to directing reductions in substances of concern, she participates in international organizations such as the World Business Council for Sustainable Development (WBCSD) and in debates about climate change and energy, and studies the latest trends related to new environmental issues, which are then utilized to draft TME's environmental action plans. Ms. Ojan, who has a strong love of nature, joined TME after working as an environmental consultant for seven years, because she wanted to contribute to environmental improvements in the business world. At the EMS Liaison, she was thrilled to meet other highly motivated and skilled female Toyota employees in charge of environmental issues from various regions around the world.



Ms. Ojan works on the environmental report

Ms. Lori Sonnier, of the Environmental Department, Toyota Motor Sales (TMS), studied environmental management at graduate school. As a student, she did an internship in the United States Environmental Protection Agency (US EPA) and summer jobs at Toyota, which inspired her with a sense of the broad range of initiatives within the environmental field, and she subsequently entered TMS as an employee. She was involved in the implementation of the ISO 14001 program and drafting of the Environmental Action Plan. She is looking forward to visiting EXPO 2005 in Aichi Prefecture to see for herself the results of Toyota initiatives in the environmental field.



Ms. Sonnier checks solar power generation at TMS

Ms. Sonnier points out that "Toyota's success in dealing with environmental issues, and my role in that, has the potential to impact the well being of society as a whole, so my job gives me a sense of fulfillment." Indeed, the women who support Toyota's environmental responses carry out their work with a strong feeling that their jobs are not only for the sake of the company, but for society as well. In addition to these five women, other female employees are also actively involved in the environmental divisions of Toyota's operations in Japan, Malaysia, the Philippines, France, Sweden, Brazil, Argentina, Venezuela, Australia, South Africa, Canada, and other countries.

Environment-related Awards Received by Toyota

FY2003 Results

Organization	Award title	Award for
Nikkei Business Publications, Inc.	Nikkei BP Technology Awards (Grand Prize)	Technology for integrated control of drive power, electric power and control that made fuel cell vehicles commercially viable
The Society of Automotive Engineers (SAE)	Harry L. Horning Memorial Award	Fuel characteristics and effects of diesel exhaust gases
The Materials Process Technology Center (Sokeizai Center)	The 41st Sokeizai Industry Employee Award	Productivity improvement
Japan Powder Metallurgy Association	"Recognition of Superior Employees" award	Productivity improvement
"The Conference for the Promotion of Reduce, Reuse and Recycling" (FY2003) Clean Japan Center Chairman's Award		Company-wide activities for zero landfill waste and reduction in combustible waste
The World Packaging Organization	WorldStar Packaging Award	Boat-shaped package of bumpers
Commendation of best practices in energy conservation (FY2003) Director General of Bureau of Economy, Trade and Industry Award		Promotion of energy conservation through in-house maintenance of cogeneration systems and improvements
Energy Conservation Center	Ministry of Economy, Trade and Industry Prize	Vitz U "Intelligent Package" Toyota Intelligent Idling Stop System
The Society of Automotive Engineers (SAE)	The 2002 Arch T. Colwell Merit Award	42V Power Control System for Mild Hybrid Vehicle (MHV)
The New Technology Development Foundation	The Ichimura Prizes in Industry-Contribution Prize	Development of a system that simultaneously reduces particulate matter (PM) and nitrogen oxides (NOx) in diesel vehicle exhaust gas
The Japan Industrial Journal	The Grand Prize for the Global Environment Award	Advanced, world-leading activities through the development and sales of hybrid vehicles. Highly evaluated for high awareness of and actual results regarding environmental preservation, including the establishment of the Toyota Recycle Vision, reduction of waste generated, and social contribution activities.
The Japan Society of Mechanical Engineers	JSME Medal for Distinguished Engineers (FY2003)	Research and development of direct-injection gasoline engines
	JSME Medal for New Technology (FY2003)	Development of fuel cell vehicles applying hybrid technology
	JSME Medal for New Technology (FY2003)	DPNR (Diesel Particulate Nox Reduction) System
Society of Automotive Engineers of Japan, Inc. (JSAE)	Technological Contribution Award (53rd)	Promotion of environmental technology, development of Specialty Car, and chassis technology
	Outstanding Technical Paper Award (54th)	Diesel Particulate Nox Reduction System
	Outstanding Technical Paper Award (54th)	Smokeless Low Temperature Diesel Combustion Concept (First Report, Second Report and Third Report)
	The Asahara Science Award (54th)	HCCI Combustion in DI Diesel Engine
	Technological Development Award (54th)	Development of TOYOTA Hybrid System II
	Technological Contribution Award (54th)	Promotion of engine, environmental and safety technology
The 7th Environmental Report Awards The 7th Green Reporting Award by Toyo Keizai Inc. Award for Excellence (second consecutive year)	Outstanding Technical Paper Award (54th)	Optimization of Diesel Engine Aftertreatment System with a Model of Hydrocarbon Selective Catalyst Reduction (HC-SCR) and Evolutionary Programming
	Meister Award	Environmental & Social Report 2003
		Environmental & Social Report 2003

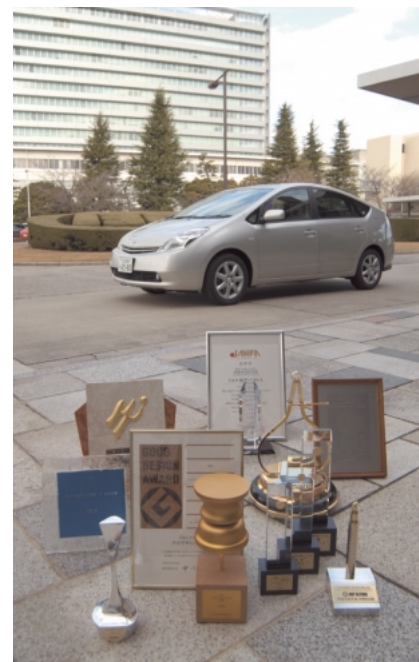
Important Awards Won by the New Prius

Japan

Award title	Organization	Category
Good Design Award 2003	Japan Industrial Design Promotion Organization	Grand Prize
Environmental Minister's Commendation for Activities to Prevent Global Warming	Ministry of the Environment	Minister's Award
Grand Prize for Energy Conservation FY2003	Energy Conservation Center	The Director General of the Agency of Natural Resources and Energy Award

Overseas

Award title	Award title	Category
2003-2004 North American Car of the Year	49 automotive journalists from the United States and Canada	Car of the Year
2003-2004 Motor Trend 2004 Car of the Year (U.S.A.)	Motor Trend magazine	Car of the Year
2003 Best of What's New Award (U.S.A.)	Popular Science magazine	Categories: Cars Grand Award
2003 Fortune The 25 Best Products of the Year (U.S.A.)	Fortune	On the road
Auto Car Technical Award (U.K.)	Auto Car	Technical Award
2004 International Engine of the Year Awards (U.K.)	Engine Technology International	Grand Prix "Best New Engine", "Best Fuel Economy" and "Best Engine 1.4-litre to 1.8-litre"
Autoreview Innovation Award (Austria)	Autoreview	Innovation Award

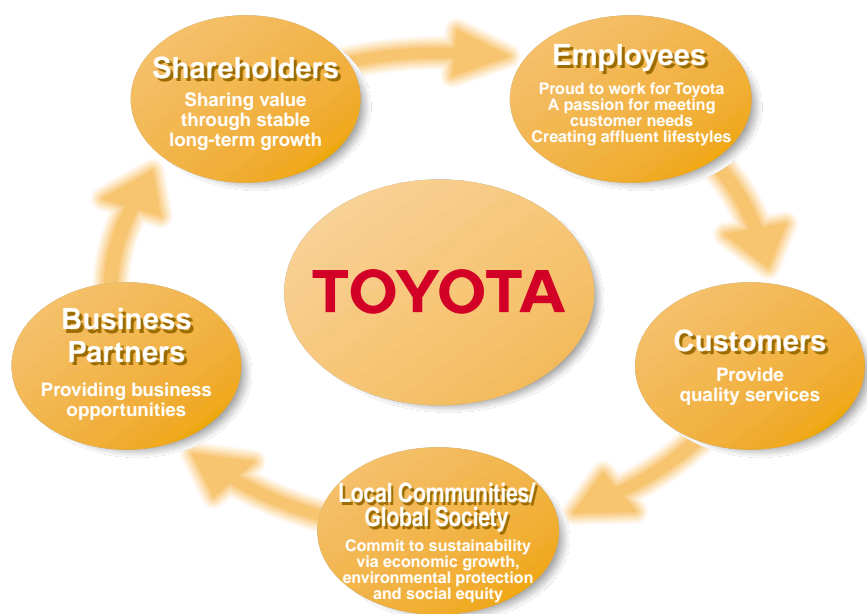


In order to realize the sustainable development of society and the world as a whole, Toyota believes that management emphasizing all stakeholders is of considerable importance, in addition to the promotion of environmental initiatives.

Respect for all People — This is one of the themes in the corporate image Toyota seeks to project in the future, described in the “Global Vision 2010.” Toyota seeks to become a truly global enterprise that is respected by all peoples around the world, and works conscientiously to provide value to stakeholders.

This section discloses various social and economic aspects of Toyota’s activities in terms of their relation with all of Toyota’s stakeholders, including customers, society, local communities, suppliers, dealers, and employees. Although this section focuses on the activities of Toyota Motor Corporation on an unconsolidated basis in Japan, it also introduces independent activities carried out by various overseas affiliates around the world. Readers will gain an understanding of Toyota’s thinking regarding its social responsibility with respect to global operations, and the concrete initiatives taken in order to fulfill this responsibility.

Global Vision 2010 Respect for all People



As a Good Corporate Citizen

Realizing the Guiding Principles at Toyota, and the Toyota Way

The Guiding Principles at Toyota are a commitment concerning the values that Toyota wishes to share with its stakeholders. The Toyota Way is positioned as conduct guidelines for carrying out these principles in Toyota's global corporate activities.

The rapid growth, diversification and globalization of Toyota in the past decade have increased the scope of its manufacturing and marketing presence throughout the world. Today, having invested authority and responsibility in a worldwide network of executives, Toyota is preparing to operate as a true global company guided by a common corporate culture. Toyota has identified and defined the company's fundamental DNA which summarizes the unique and outstanding elements of Toyota's company culture and success. These are the managerial values and business methods that are known collectively as the Toyota Way.

"The Toyota Way is supported by two main pillars. They are "Continuous Improvement" and "Respect for People." We are never satisfied with where we are and always improve our business by putting forth our best ideas and efforts. We respect the people, and believe the success of our business is created by individual efforts and good teamwork.

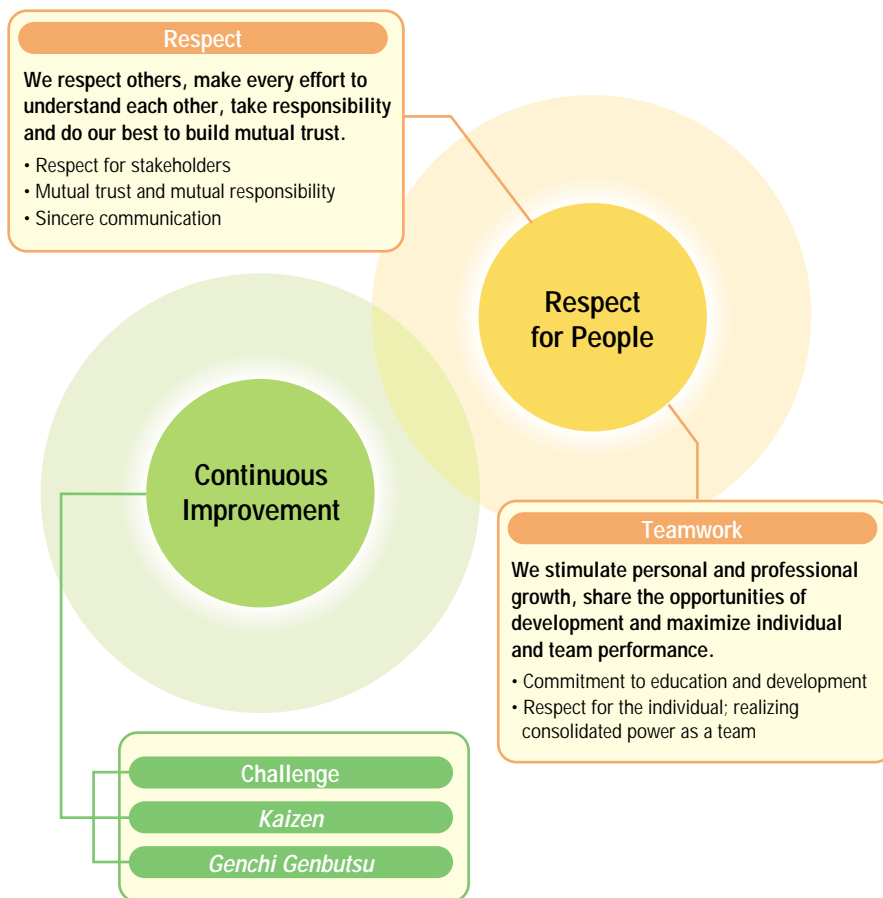
All Toyota team members, at every level, are expected to use these two values in their daily works and interactions."

Compliance

For Toyota, compliance does not mean simply observing laws; it means respecting social norms and corporate ethics, complying with the expectations of all stakeholders including customers, investors, business partners, employees, and all others who come into contact with the company, and engaging in fair corporate activities. The first clause of the Guiding Principles at Toyota, "Honor the language and spirit of the law of every nation and undertake open and fair corporate activities to be a good corporate citizen around the world," establishes compliance as one of Toyota's management principles.

Toyota believes it is essential that compliance permeates the entire company and executive management takes every opportunity to emphasize, both inside and outside the company, the importance of establishing compliance.

Toyota Way 2001



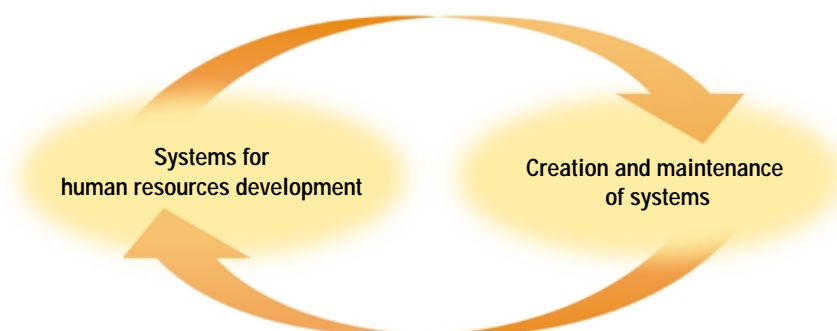
Human Resources Development and Creation of Systems

In establishing compliance, creating systems such as checking on legal compliance and developing employees whose awareness of compliance is high and who can effectively put those systems into practice are two inseparable elements.

Human Resources Development

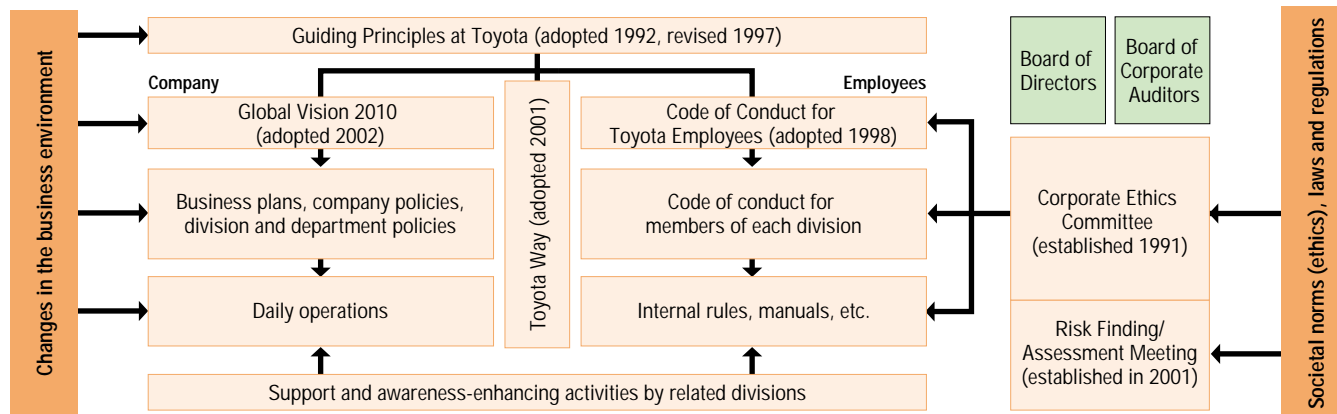
In order to raise and solidify the awareness of employees, Toyota promotes compliance through the development of human resources. Toyota conducts on-the-job training, training based on staff qualifications, including introductory training for newly-joined staff and management training, and specialist training for all employees.

The Essential Elements of Compliance



Basic Framework for Compliance

In order to effectively put into practice the Guiding Principles at Toyota, that emphasize the establishment of compliance, examples of specific company goals and employee conduct guidelines have been embodied in the Global Vision 2010 and the Code of Conduct for Toyota Employees.



Corporate Ethics Committee

The Corporate Ethics Committee, which includes all executive management from the executive vice president level and higher as well as corporate auditors (including outside auditors), discusses key matters relating to corporate ethics, compliance, risk management, and responses.

In FY2003, some of the issues addressed by the Corporate Ethics Committee included raising corporate ethics to even higher levels, responses to the United States Sarbanes-Oxley Act, and priority company-wide risks.

Records of proceedings are announced at management meetings and directors and managing officers disseminate information to the divisions they oversee when necessary.

Risk Management

Toyota established the Risk Finding/Assessment Meeting as a subsidiary organization under the Corporate Ethics Committee to determine and address internal compliance risks. In December 2003, however, an incident occurred where Toyota employees leaked proposed questions for a government-sponsored written examination for auto mechanics. Toyota treated this incident with utmost seriousness and is taking further measures to strengthen compliance activities and prevent reoccurrence.

As one aspect of those measures, in February 2004, the BR¹ Compliance Support Department was established to support checks on legal compliance at each division. This new division supports the checks implemented by each division and helps identify risks associated with legal non-compliance by adopting and implementing a company-wide promotion plan, and creating guidelines² regarding the

implementation of checks on a day-to-day basis.

1. BR: Business Reform
2. Relevant laws, key points in implementing checks and areas of particular concern in implementing business activities

The Code of Conduct for Toyota Employees

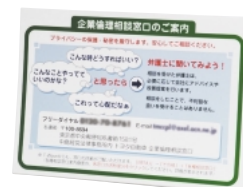
The Code of Conduct for Toyota Employees organizes the employees' basic attitudes necessary for putting the Guiding Principles at Toyota into practice. In January 2004, the Code of Conduct for Toyota Employees was condensed to create a pocket edition, which employees can carry with them and refer to at any time. The pocket edition was distributed to all employees along with a message from the president.



Code of Conduct for Toyota Employees and its pocket edition

The Compliance Hotline

Toyota contracted an outside law firm to establish a Compliance Hotline that allows employees to consult in private in the event they have any questions or doubts concerning issues of compliance. Toyota is working to increase awareness of this hotline among employees by including information in the pocket edition of the Code of Conduct for Toyota Employees and by the placement of boards promoting its use.



Information board promoting the Compliance Hotline

Toyota believes it is necessary to steadily and continually promote initiatives towards establishing compliance and will continue to put its efforts into strict observance of corporate ethics.

Nippon Keidanren Charter for Good Corporate Behavior

The Charter for Good Corporate Behavior adopted by the Nippon Keidanren (Japan Business Federation) was revised in May 2004. Against a backdrop of new issues such as heightened concerns about "human rights, child and forced labor, and poverty in a rapidly globalizing economy" and emerging issues such as "personal data protection in the information society," the Charter was reviewed with the objective of promoting voluntary initiatives in the area of corporate social responsibility (CSR). Various provisions

have been added including "respect for human rights," "measures to protect personal data and customer related information," and "member corporations must assume the responsibility for implementing this charter and for taking all necessary action in order to promote awareness within their corporation and inform their group companies and business partners of their responsibility," toward the creation of a sustainable society.

Toyota is committed to observing the spirit of the Charter for Good Corporate Behavior in its internal education and all its business activities.

Relations with Customers

Toyota's Customer First Policy

Since its founding, Toyota has carried out corporate activities based on the concept of "the customer always comes first." This concept was declared in "The Toyoda Precepts" (established in 1935) which has been handed down as the Toyota Group's guiding philosophy. Toyota makes a company-wide effort to build relations with its customers, and all employees keep the "customer first" policy in mind in all aspects of their jobs.

In addition, customer opinions sent directly to Toyota are received sincerely and Toyota responds to them in good faith. Valuable feedback is also provided to involved departments so that the information can be used in improving Toyota's corporate activities.

Please see p. 4 for details on "The Toyoda Precepts"

Customer Relations Division Initiatives

The Customer Relations Division is "the division within the company in direct contact with customer needs." The staff is striving to improve customer satisfaction by providing rapid, precise, and cordial responses to customer consultations so that customers feel a sense of security and confidence in Toyota, and by reflecting customer opinions in product development, sales, and after-sales activities so as to further enhance customer satisfaction.

Starting in January 2004, the Customer Assistance Center began operating 365 days a year to enhance convenience to customers and receive even more customer opinions. The Customer Relations Division makes direct proposals to or holds discussion meetings with the sales, research and development, and production divisions regarding opinions from customers so that they can be used in improving the company's products and corporate activities and in employee education.

Responses to Customers in Japan and Overseas

The Customer Assistance Center is not the only point of contact for customer consultations. In Japan, 295 car dealers have Customer Consultation Telephone Lines and about 70 distributors in North America, Europe, China and other countries have established customer relations organizations, making responses to customers possible all over the world. The Customer Relations Division is engaged in activities to ensure the satisfaction of customers around the globe. It collaborates with these organizations and provides support through the development of various tools, and by conducting training and holding conferences to strengthen and enhance customer response systems and capabilities.



TMC Customer Assistance Center



Customer Assistance Center in the U.S.A.

Ensuring High Quality

Basic Policy

Toyota places emphasis on making automobiles that reflect its policy of "customer first, quality first." The key to achieving this is through the control of quality functions. Divisions ranging from product planning, development, production engineering and manufacturing to purchasing and sales & marketing are responsible for maintaining high levels of quality in their

respective fields, and the leaders of each division draft annual policies regarding quality functions.

Toyota's efforts take the following three principal directions.

- (1) All Toyota products and services must meet customer expectations and comply with the laws of the particular country where business is conducted; and preventive action must be taken to ensure that quality issues do not arise.
- (2) If issues do arise, the causes should be swiftly elucidated and countermeasures initiated; appropriate action should be taken regarding products that have already been sold to enable early detection and early resolution of issues.
- (3) Conduct audits to confirm whether each division is taking appropriate action to maintain high quality levels; work on any areas that require improvement.

Providing Information to Customers

Toyota strives to provide information about the quality and safety of its products and services to customers in a timely fashion, employing the following methods.

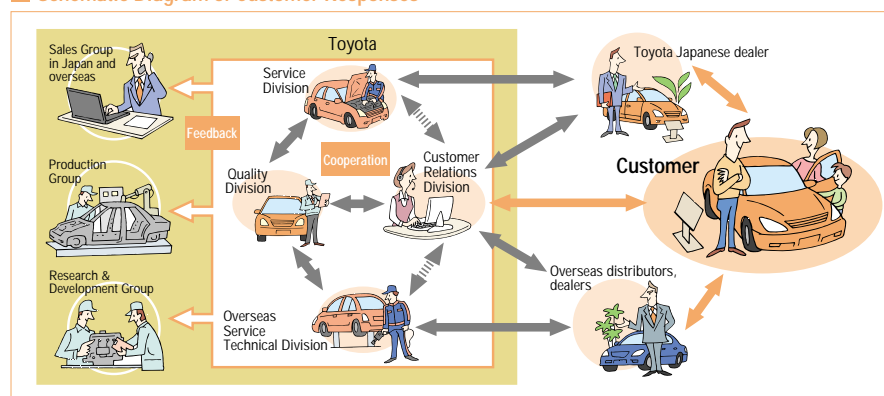
- (1) Explanations to customers by dealer staff
- (2) Labels attached to products and instruction manuals
- (3) Telephone consultation through the Customer Assistance Center
- (4) Disclosure of information on Toyota's website

Procedures and System for Recalls

In a case where product defects are discovered and it is deemed necessary to take measures to correct them, responses such as those below will be implemented.

- (1) Contacting the authorities in accordance with procedures stipulated by the laws of each country
- (2) Notifying customers through newspapers or by direct mail and providing explanations at the dealer
- (3) Placing a notice on the relevant website
- (4) Collecting products and repairing them free of charge

Schematic Diagram of Customer Responses



For the past several years, in conjunction with the increasing globalization of business, Toyota has been promoting activities to accelerate the implementation of measures to obtain information from markets quickly and convey it directly from the source to the relevant departments, and has been working to reinforce local structures in regions around the world. The Quality Division provides explanations to the relevant divisions, including executive management, regarding measures against product defects.



Universal Design

Toyota's Initiatives

Making User-friendly Vehicles

Toyota's universal design¹ is based on the idea of "diversifying needs and the vehicles to respond to them," and has been promoted within the framework of efforts to make user-friendly vehicles. Toyota's vehicle development hitherto has reflected ergonomic considerations and the scenarios in which vehicles are used, but in order to do this in a more systematic, objective, and universal way, in March 2003, Toyota announced original universal design evaluation indices.

The first index, Toyota's Ergo-index,² evaluates vehicle performance from an ergonomic viewpoint. It features 180 ergonomics-based evaluation items, which have been arrived at through the collective experience of developing numerous different vehicles, and are used to evaluate various vehicle attributes from the viewpoint of human characteristics. The second index, Toyota's Situational Suitability Index is used to quantify the degree to which a vehicle meets the customer's needs (how and in what situation a vehicle is used), for instance how easily the doors can be opened and closed with the hands full of baggage. The two indices will be applied from now on as Toyota works on its conception of a user-friendly vehicle.




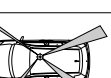

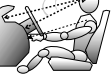
1. Universal design:

Universal design is the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.

2. Ergo-index:

Coined by Toyota from "ergonomics" and "index"

Examples of Ergo-index Evaluation Items

Category	Evaluation item (example)
Main driving instruments and devices	<ul style="list-style-type: none"> Ease of operation with regard to the location, angle, etc. Interference during operation, etc. 
Ease of ingress and egress	<ul style="list-style-type: none"> Feet: Ease of lifting feet, moving feet around Lower back: Ease of sitting down and getting up 
Posture and comfort	<ul style="list-style-type: none"> Amount of headroom (vertical and horizontal directions) Amount of legroom, etc. 
Field of view, maneuverability	<ul style="list-style-type: none"> Ease of judging position of front of vehicle Reduction of blind spots Width of mirror, etc. 
Range of meters, visibility	<ul style="list-style-type: none"> Ease of focus accommodation Visibility of characters, displayed contents, symbols, etc. 
Instrument panels, switches	<ul style="list-style-type: none"> Visibility of switch displays Ease of reach Layout with respect to importance and frequency of use, etc. 

Popularization of Welcab Vehicles

Toyota has been quick to undertake the development and popularization of Welcab vehicles (specially equipped vehicles with factory-installed features for disabled people), under the philosophy of offering all people easy mobility. Development is being promoted under five key points:

- (1) Communication and care
- (2) Friendliness to drivers and carers
- (3) Ease of ingress and egress
- (4) High levels of comfort
- (5) Reasonable pricing

As of the end of April 2004, there were 106 variations in 49 vehicle series.

Toyota has positioned the Welcab series as one form of universal design.

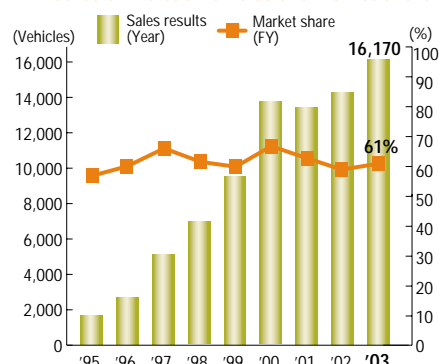
Against the social background of an aging society and the development of a welfare society, the need for vehicles for disabled people is growing every year. Between January and December 2003 the number of Welcab units sold was 16,170, a more than 10-fold increase compared to the figure ten years ago.

The first Welcab general display space—Toyota Heartful Plaza—was opened in Tokyo in July 1998. Since then, they have been expanded to other regions and with newly opened Toyota Heartful Plazas in Chiba Chuo and Sapporo in FY2003, the total number in Japan is now eight. Dedicated staff are on hand to consult on the right choice of vehicle for each individual and on customization. Together, the eight sites welcomed 23,000 visitors in 2003.



SIENTA wheelchair-adapted model that can accommodate five people and a wheelchair

Sales of Welcab Vehicles and Market Share



Universal Design Experience-based Display Space

Opening of TOYOTA Universal Design Showcase

In April 2004, at the MEGA WEB car theme park, which is situated in a waterfront area in Tokyo, Toyota opened a universal design information-exchange display facility called the TOYOTA Universal Design Showcase. In addition to displays covering Toyota activities, the facility will regularly exhibit more than 400 universal design items made by Japanese and overseas manufacturers spanning various industries. TOYOTA Universal Design Showcase is an experience-based display space that functions as a center for sharing a wide range of information about universal design. Within the facility, Toyota will display Welcab series vehicles which visitors can drive on a special test course. Both the display area and test course are among the largest in Japan for vehicles developed for people with disabilities. Many customers have already been able to experience the vehicles for ease of ingress/egress and operation.



Display of universal design items

Universal Design Houses in Atolis Park Kariya

Atolis Park Kariya was opened in April 2001 in Kariya, Aichi Prefecture, as Toyota Housing Corporation's general display site for houses. As well as residential displays, it features facilities such as the *Kurashi Taikenkan* and the *Sumai Taikan Museum*, where visitors can experience a range of residential options first hand. The *Kurashi Taikenkan*, a house equipped with universal design features, inspires customers with a wealth of ideas.



Kurashi Taikenkan in Atolis Park Kariya

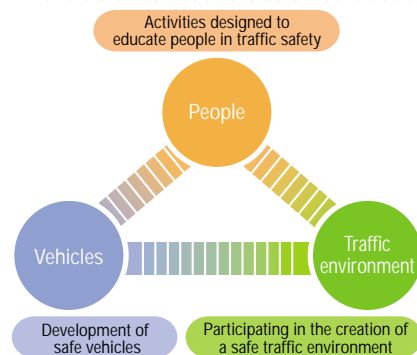
Contributing to the Complete Elimination of Traffic Casualties

Strengthening Initiatives toward Improving Traffic Safety

With the objective of contributing to the complete elimination of traffic casualties, which is one of the aims of a mobile society, Toyota considers it important to project what society will be like in the future, improve vehicle safety, educate people and participate in the creation of a safe traffic environment while taking a comprehensive approach in implementing traffic safety activities. In order to do this, Toyota is promoting wide-ranging initiatives, seeking to achieve "zero accidents," and "zero deaths and injuries" based on the following three concepts:

- 1) Contribution to an affluent mobile society
Toyota always focuses on "people" and on contributing to a mobile society without any traffic casualties via vehicles in which "people" are able to travel comfortably.
- 2) Cooperation with human society
As a member of our global society, Toyota strives to improve the traffic safety environment. We are safety conscious and willing to cooperate with various groups such as governments, local and national.
- 3) Development of safe vehicles
Taking accident analysis data into consideration, Toyota develops technologies for excellent "Preventive safety" and "Collision safety" to lead the world, and protect/assist consumers.

Comprehensive Measures Taken by Toyota Toward the Realization of a Safe Mobile Society



Preventive Safety and New Technologies to Foresee Collisions

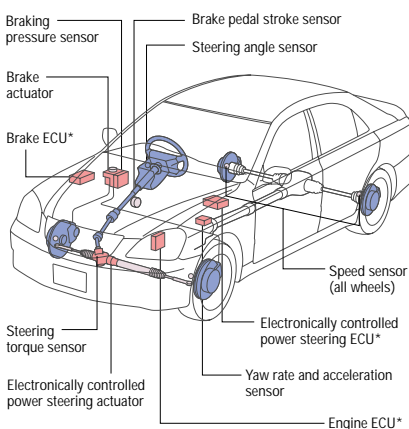
In vehicle safety, what comes first is the preventive safety approach, which makes vehicles less susceptible to accidents. Toyota is actively engaged in utilizing advanced technologies to develop new safety equipment and structures, and is working on incorporating them into as many cars as possible in order to allow the essential functions of the vehicle—running, turning, and stopping—to be executed in line with driver intentions.

Vehicle Dynamics Integrated Management

Toyota incorporated Vehicle Dynamics Integrated Management (VDIM), which integrates management of the engine, brakes, steering and other control systems that hitherto functioned independently, thereby achieving ideal vehicle kinetics, in the new Crown Majesta launched in July 2004.

Whereas conventional VSC (Vehicle Stability Control), TRC (Traction Control System) and ABS (Anti-lock Brake System) begin activating control when the vehicle's limit has been reached, VDIM seamlessly integrates the engine, brakes and steering control before the vehicle reaches its limits, closing the gap between how a driver intends the vehicle to perform and the vehicle's actual performance, based on data gleaned from various sensors related to running, turning and stopping, ensuring a high level of preventive safety and ideal driving performance.

VDIM System Structure



*ECU: Electronic Control Unit

Lane-keeping Assist System

Toyota adopted the Lane-keeping assist system that assists the driver's steering operation to keep the vehicle within its lane, thereby lessening the driving burden on the driver, in the new Crown Majesta.

The system has a lane-deviation alarm function and a lane-keeping assist function. When the vehicle is about to deviate from its lane, the lane-deviation alarm function indicates this with a buzzer and a display, and briefly applies a small steering force. This alerts the driver and hinders lane deviation. When the radar cruise control system is in operation, the lane-keeping assist function continuously controls a small steering force to keep the vehicle near the center of the lane, assisting the driver's steering operation.

Intelligent AFS

The Adaptive Front-Lighting System (Intelligent AFS), first adopted by Toyota for the Harrier in February 2003, has been employed in the Celsior, Crown and Crown Majesta. It automatically shifts the direction of the headlights left or right depending on vehicle speed and steering angle, enhancing visibility on curves and at intersections in dark driving conditions by illuminating the actual path the vehicle will take, delivering greater peace of mind to drivers at night.

"Pre-crash Safety" System (Radar system)

The "Pre-crash Safety" radar system, first developed by Toyota in February 2003 and adopted in the Harrier, has been evolved further in the Crown Majesta.

Adoption of a camera in the basic system, which assesses in advance when a collision is unavoidable and preemptively activates safety devices to help minimize damage, allows it to determine the size of an obstacle. This results in earlier collision prediction and higher injury-reduction performance.

Safety Measures to Protect Wheelchair Occupants during a Collision

In order to better protect a passenger who is in a wheelchair inside a vehicle, sled tests and collision tests for wheelchair-adapted Welcab vehicles were conducted. Toyota is currently involved in developing safety equipment with superior usability and a specialized wheelchair based on a design with due consideration to collision safety.





Evolving Collision Safety Performance

In order to reduce injury to vehicle occupants and pedestrians during a collision, Toyota is enhancing its technologies and equipment for improving collision safety. Specifically, Toyota is focusing on the following three areas in making vehicles with practical safety features: 1) By incorporating the concept of omni-directional compatibility, collision tests using a two-ton class vehicle as the other car to simulate the conditions of collision with a heavy vehicle will be carried out on all passenger vehicle series (including minivans and SUVs) to be launched in the future; 2) Toyota will install a seatbelt reminder system for the driver and the front passenger in all of its passenger vehicle series (including minivans and SUVs) by 2008; 3) All Toyota passenger vehicle series (including minivans and SUVs) to be introduced in the autumn of 2004 and beyond will feature a vehicle body structure designed to be the top level in its class in the world in reducing injury to a pedestrian's head in the event of a vehicle-to-person collision. The new Crown Majesta is equipped with many of these collision safety features, and also uses a larger bumper reinforcement for the front in order to lessen the vehicle's damage-inflicting capacity when involved in a collision with a lighter vehicle. In the body structure, various structural components have been optimized and the use of high tensile strength steel plates has been expanded. At the same time, the new Crown uses an Impact-absorbing Wave Hood in the aluminum hood. Should the vehicle strike a pedestrian, the hood's wavy structure would quickly disperse the impact energy in order to reduce the impact of the collision on the pedestrian.

Start of a New Collision Testing Center

In October 2003, Toyota began operating a new collision testing center in the Vehicle Safety Research Laboratory inside the Higashi-Fuji Technical Center. This all-weather indoor testing center has a maximum linear track length of approximately 280m, and enables frontal offset collisions at 15-degree increments, as well as other detailed tests by varying the collision point and speed. Many accident modes, such as high-speed collisions and rollovers caused by curbs or sandy areas, can be reproduced at the new center, resulting in more accurate test results than ever before.

Activities Designed to Educate People in Traffic Safety

Toyota has been actively engaged in wide-ranging activities designed to educate people in traffic safety. Centering on the "Toyota Traffic Safety Campaign" which it has continued for over 35 years since being initiated in 1969, Toyota has been distributing materials for child traffic safety education and has held Toyota Driver Communication safe driving courses.

Toyota Traffic Safety Campaign

A total of 447 companies, including car dealers, logistics systems and forklift dealers, parts distributors and rental/lease dealers, conduct the Toyota Traffic Safety Campaign every spring and autumn to coincide with Japan's Nationwide Traffic Safety Campaign. Toyota has been actively engaged in initiatives related to traffic safety education for children and promotion of proper use of seatbelts and child restraint systems.

In FY2003, Toyota donated 44,000 storytelling cards and 2.63 million picture books as educational materials about traffic safety to new kindergarten and nursery school students nationwide with a cumulative total of approximately 100 million picture books distributed so far. For educational activities related to the use of seatbelts and child restraint systems, Toyota distributed educational leaflets explaining the importance and benefits of seatbelts and child restraint systems and their proper use.



Safe Driving Courses

Since 1987, Toyota has held Toyota Driver Communication safe driving courses that allow drivers to experience the performance of cars at the limits of breaking and cornering, and study the effects and proper usage of ABS and other safety technologies. In FY2003, about 600 people attended the courses, with a cumulative total of 8,400 drivers having attended the courses to date.

In the spring of 2005, Toyota will open a facility to regularly offer Toyota Driver Communication safe driving courses at

Fuji Speedway. The existing program for driving techniques will be expanded to provide a complete course, drawing on Toyota's extensive experience in vehicle development to teach safe driving and offer a wide range of options that match the needs and driving skills of participants.

Child Restraint System Usage Awareness Activities

Toyota offers a Toyota Child Safety Communication course intended to further popularize the use of child restraint systems and prevent accidents resulting from their improper use. The course is geared to mothers and caregivers, and has been held in conjunction with the NPO, Safe Kids Network Japan* and other organizations since 2000. In FY2003, approximately 400 people attended the course.

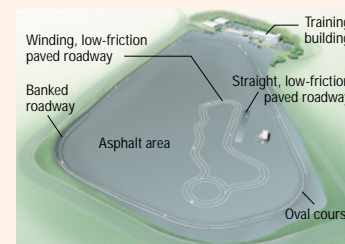
*Safe Kids Network Japan:

A nationwide organization of obstetricians and pediatricians which promotes educational activities for preventing accidents involving children

Toyota Safety School

As a community-based activity, Toyota has since 1975 invited children from kindergartens and nursery schools in the area of Toyota City, where its head office is located, to take part in the Toyota Safety School activities intended to increase their awareness of traffic safety. In FY2003, about 11,500 children participated, bringing the cumulative number of participants to over 170,000.

The New Toyota Safety Driving Training Facility Scheduled to Open in Spring of 2005



- Location: Oyama-cho, Sunto-gun, Shizuoka Prefecture (within Fuji Speedway)
- Total area: 130,000m²
- Course overview: Asphalted areas (approximately 100,000m²), winding, low-friction paved roadway (490m), straight, low-friction paved roadway (75m), oval course (approximately 1,150m, bank 35 degrees)
- Training building: Total floor area of approximately 1,900m²; classrooms (3), faculty room, control room, lounge, vehicle maintenance shop, etc.



http://www.toyota.co.jp/en/safety_presen/index.html

Cooperation with Business Partners

Relations with Japanese Dealers

Implementing a New Product and Distribution Strategy

Toyota is implementing a new product and distribution strategy that outlines the reorganization of Toyota-brand sales channels to adequately respond to future changes in consumer values and in the structure of Japan's highly competitive automobile market.

The new product and distribution strategy calls for the introduction of the Lexus brand to Japan and the reorganization of Toyota's Japanese-market Toyota-brand sales channels into four channels from the previous five. The Netz and Vista sales channels merged to form a new Netz channel that started operations in May 2004. The new Netz channel is intended as a pillar of this new strategy that can strike a chord with "new value" customers, while keeping in mind the needs of current customers. The Lexus brand to be created in Japan will be established in August 2005 as "a truly global premium brand for the 21st century," in order to respond to new consumer values that increasingly emphasize a "sense of the best," as well as individuality, within Japan's highly competitive luxury vehicle market.

Fulfilling Responsibilities in a System of Mutual Trust

Toyota sells automobiles and provides after-sales service to customers in Japan through a network of 295 car dealers and approximately 5,750 vehicle sales outlets.

Since the establishment of a Toyota dealer in 1935 through the use of local capital, Toyota has developed a sales structure for Toyota vehicles based on the principles of independence and responsibility, that emphasizes local capital, and has made every effort to fulfill its responsibilities in a system of mutual trust. Also, in order to build trusting relationships between Toyota as a manufacturer and dealers based on mutual benefit, Toyota engages in extensive communications.

Based on the spirit of mutual trust, Toyota concludes a Toyota Dealer Agreement once every three years with each of its dealers. This agreement specifies the mutual rights, obligations and responsibilities of both Toyota and the dealer. For example, in its 2001 revision, provisions concerning consideration for the global environment, and in the 2004 revision provisions concerning legal compliance were clarified in the items for mutual responsibility.

Recent examples include Toyota's efforts to promote initiatives together with its dealers in response to the Automobile Recycling Law scheduled to come into effect in January 2005. In response to the Personal Data Protection Law to be enacted in April 2005, Toyota adopted the Personal Information Protection Guidelines in June 2003 as policy guidelines for all dealer personnel from staff to management.



Personal Information Protection Guidelines

Relations with Overseas Distributors

Creation of The TOYOTA WAY in Sales and Marketing

Based on The Toyota Way 2001 compiled in April 2001, the Overseas Marketing Division created The TOYOTA WAY in Sales and Marketing (TWSM) in October 2001 to systematize and organize the experience, insights and know-how in the sales and marketing areas. The TWSM emphasizes the principle of putting the "customer first" and the importance of integrated action by dealers, distributors, and Toyota.



The TOYOTA WAY in Sales and Marketing and TOYOTA VALUE

Please see p. 64 for details on the Toyota Way 2001

Establishment of Specialized Organization to Share Sales and Marketing Knowledge Worldwide

In April 2002, distributors from various regions of the globe met in Los Angeles to



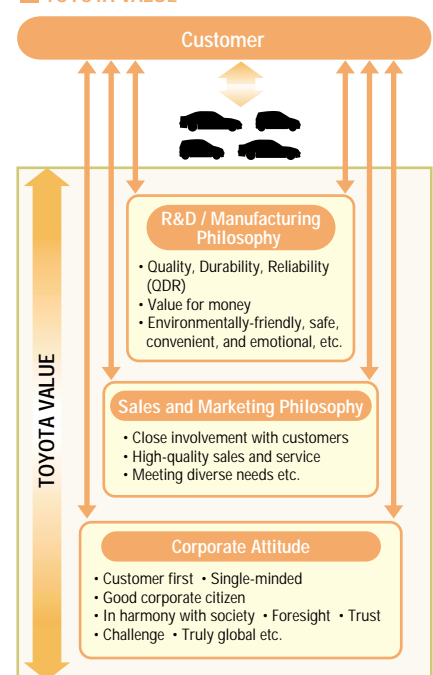
"The Toyota Way in Sales and Marketing Forum" held in April 2002 in Los Angeles

discuss the possibilities of implementing the key TWSM principles around the world.

As a result of various discussions, a decision was made to establish the Global Knowledge Center (GKC) as a forum for learning and sharing best practices from various countries and regions. The GKC was established within Toyota Motor Sales, U.S.A., Inc. in July 2002. Its objective is to assist distributors in the development of personnel and in the engagement to continuously improve the sales and marketing methods around the world, while respecting local values, cultural diversity and the traditions of each country and region. The GKC has gathered information on examples of best practices in various countries and regions and summarizes them into a case study, which is sent to distributors in approximately 160 countries.

In order to promote widespread understanding of the TWSM, Toyota has started producing and distributing a magazine called "team TOYOTA" that introduces TWSM related activities from various countries. Also, in October 2003, TOYOTA VALUE, a statement of shared values that the Toyota brand seeks to convey to customers throughout the world was created and distributed. TOYOTA VALUE includes those fundamental philosophies found in the TWSM that relate to the value provided to customers, such as safety, care for the environment, and good faith towards society.

TOYOTA VALUE



Sources: *The Toyota Precepts, Guiding Principles at Toyota, The Toyota Way 2001, TWSM, etc.*



Relations with Suppliers

The Mission of Purchasing

Toyota seeks to contribute to the "creation of a prosperous society through automobiles." Toyota also seeks to contribute to society by providing customers with the most attractive products in the most timely manner. In order to achieve these objectives, the task of Purchasing is to ensure "long-term and stable procurement of the best products at the lowest price in the most speedy and timely manner." To do this efficiently, Purchasing needs to build the world's No.1 supply base. This is achieved by cultivating and deepening ties with suppliers who share the commitment for creating quality products for customers.

Toyota's Basic Purchasing Policy

The first policy is "Fair competition based on an open door policy." Toyota is open to any and all suppliers, regardless of nationality, size, or whether they have done business with Toyota before. Toyota's choice of suppliers is on the basis of purely business considerations. Toyota evaluates the overall strengths of prospective suppliers, including their quality, cost, technological capabilities, and reliability in delivering the required quantities on time, as well as their potential strengths, as evidenced in such ways as their amenability to continuing *kaizen* (improvements).

The second policy is "Mutual benefit based on mutual trust." Toyota believes in developing mutually beneficial, long-term relationships based on mutual trust. To foster that trust, Toyota pursues close and wide-ranging communication with suppliers.

The third policy is "Contribution to local economic vitality through localization: good corporate citizenship." As Toyota moves to globalize its operations, production outside Japan is increasing rapidly. Toyota will work to make an economic and industrial contribution that is fully commensurate with its market presence in each region. That includes purchasing parts and materials from local suppliers.

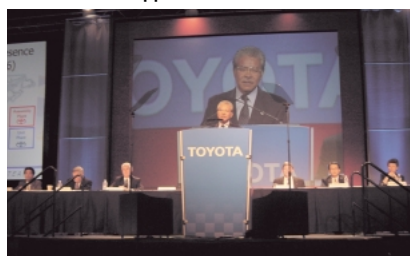
2004 Toyota Global Suppliers Convention



Toyota Global Suppliers Convention held in Japan in February 2004

Toyota Global Suppliers Convention is held every year to convey its priority purchasing policies to its suppliers. 400 suppliers, including 67 overseas companies, attended the convention held in Japan in February 2004. Toyota presented three priority purchasing policies: "Safety, Environment and Compliance." Awards were also given to the suppliers who displayed significant achievements in quality, cost, technological development, etc.

Overseas Suppliers Convention



TMMNA (North America) Suppliers Convention (March 2004)

Affiliates in various countries also held Suppliers Conventions from February to April. At the conferences, they presented Toyota's priority purchasing policies in the respective country and awards to outstanding suppliers.



TMEM (Europe) Suppliers Convention (March 2004)

Supplier's Guide Revised for the First Time in Seven Years

In order for the suppliers who do not engage in business with Toyota to understand Toyota's purchasing policies as well as its development and processes, a practical handbook, Supplier's Guide, is issued. In March 2004, Toyota revised the Supplier's Guide for the first time in seven years.



Supplier's Guide

In order for suppliers to understand Toyota's way of thinking, environment and safety as well as corporate social responsibility were also mentioned in the introduction.

Excerpt from the Introduction to the Supplier's Guide:

Toyota has worked since its founding in 1937 to contribute to the quality of life through well-made automobiles. That commitment has earned a valued place for Toyota vehicles in markets worldwide.

We at Toyota are committed to fulfilling our corporate social responsibility. We strive to be a good corporate citizen that will earn people's trust in the global community. We pursue stable, long-term growth by offering safe and environmentally friendly products to customers. In all our activities, we strive to operate in harmony with the global environment, with the world economy, with local communities, and with individuals.

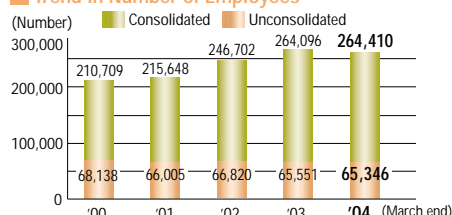
Creating Safe and Good Workplace Environments

Employment and Labor-Management Relations

Although the number of Toyota employees on an unconsolidated basis has essentially remained unchanged, it is increasing on a consolidated basis. The rate of growth is high in regions other than Japan and North America. Within Japan, almost all employees of TMC and its subsidiaries, excluding management, are members of the Toyota Motor Workers' Union.

Note: Approximately 89% of TMC employees are members of the Union (as of the end of March 2004)

Trend in Number of Employees



Number of Employees by Region on a Consolidated Basis

Region	March 2002	March 2003	March 2004
Japan	180,273	179,039	175,096
North America	27,721	30,775	30,806
Europe	11,894	14,418	17,349
Other	26,814	39,864	41,159
Total	246,702	264,096	264,410

Labor-Management Relations Based on Mutual Trust and Respect

Mutual trust and respect between labor and management is a fundamental principle of Toyota's employee relations as stated in Item 5 of the Guiding Principles at Toyota Motor Corporation. Following a labor dispute in 1950, mutual trust between labor and management was adopted in the joint labor and management declaration concluded in 1962. In the Labor and Management Resolutions for the 21st Century signed by labor and management representatives in 1996, mutual respect was added to mutual trust as a foundation of labor-management relations. Since then, Toyota has worked to strengthen its labor-management relations through active dialogue.

Labor and Management Resolutions for the 21st Century (Summary)

- (1) As a global company, we will endeavor for the progress of the world economy, and at the same time contribute to international society.
- (2) The relationship between labor and management shall be based upon mutual trust and respect.
- (3) In order to create a company environment in which workers can fully utilize their potential and additional value can be obtained, we, labor and management will endeavor to faithfully perform the roles entrusted to us, while standing on common ground.
- (4) We will contribute to the realization of a truly affluent society and life for working people, taking into consideration the future of Japan as a whole.

In order to achieve this fundamental principle in labor-management relations, personnel management is conducted in accordance with four basic principles:

Basic Principles of Personnel Management

- (1) **Creating a workplace environment where employees can work with their trust in the company**
 - Stable employment where layoffs and dismissals are not readily made
 - Steadily maintain and improve working conditions from a medium to long-term perspective
 - Ensure fairness and consistency
- (2) **Creating a mechanism for promoting constant and voluntary initiatives in continuous improvements**
 - Share the management mindset and sense of critical urgency through thorough communication
 - Reflect business results in working conditions
- (3) **Fully committed and thorough human resources development**
 - Promote personal growth through work
 - Communication of the Toyota Way/role
- (4) **Promoting teamwork aimed at pursuit of individual roles and optimization of the entire team**
 - Thorough consensus building and achievement in single thrust
 - Team results and creating a sense of unity

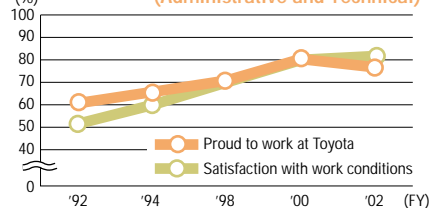
Stable Employment

Stable employment that avoids simple layoffs and terminations is a key pillar in the relationship of mutual trust between labor and management. In addition, the Toyota management system is based largely on bringing out to the greatest extent employee abilities, reasoning skills and creativity. Consequently, the simple disposal of human resources, a major management asset, not only damages the relationship of trust, but also hinders the spontaneous display of ability by employees. Accordingly, Toyota always takes a medium- to long-term management perspective and has made the realization and continuation of stable employment through all possible employment policies the fundamental basis of its management philosophy.

Creating Good Workplace Environments

Toyota has established a number of hotlines for the fast and fair resolution of issues related to compliance, gender harassment, mental health and working conditions. Further, Toyota implements employee awareness surveys, and monitors employee job satisfaction, etc.

Employee Awareness (Administrative and Technical)



*Surveys are implemented every other year depending on job type

Safety and Health

Safety, along with quality and the environment, is an important topic relating to the very foundation of a corporation. Based on the philosophy of "Respect for People," and the fundamental policy that "Safety is management itself" and "it is everyone's responsibility, from senior executives to every employee at the workplace, to place safety first," Toyota is making an effort to create a safe and energetic work environment.

5-Year Policy (2000 - 2004)

1. Zero STOP6¹-type accidents and designated occupational diseases² by reinforcing the proactive prevention system and structure
2. Building a workplace environment which is healthy for the mind and body

Safety and Health

Main Action Taken in FY2003

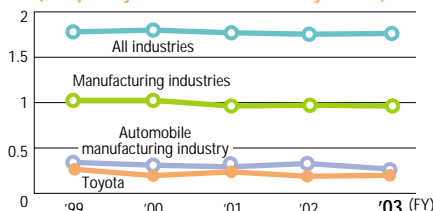
1. Continued and ensured thorough implementation of Full Observation Activities (Focus for the last two years of the 5-Year Policy: STOP6+ accidents which occur in each shop)
2. Pursuit of inherent safety³ of equipment based on risk assessment (safety and health)
3. Further expansion of measures for ergonomic (musculoskeletal) disorders
4. Promotion of measures against noise and dust
5. Management and guidance for construction work by contracted companies on Toyota's premises

Beginning with the thorough implementation and development of Full Observation Activities to reduce the risk of workplace accidents, Toyota has developed a range of voluntary accident prevention activities. Although the number of STOP6-type accidents in 2003 represents the fewest to date, the rate of reduction has slowed down, the number of designated occupational diseases increased from last year and the goal of zero STOP6-type accidents and designated occupational diseases was not reached. Toyota is, however, raising health and safety levels by repeatedly implementing the P (plan), D (do), C (check), and A (act) management cycle. Toyota also has internal assessors perform workplace evaluations from a third-party perspective and regularly confirms that the management cycle is operating correctly.

1. **STOP6: Safety Toyota 0 (zero accidents) Project 6** Activities to prevent six types of accidents which may cause death or disability (caught in machines, contact with heavy objects, contact with vehicles, falls, electric shocks, and contact with heated objects)
2. **Designated occupational diseases:** Occupational diseases from dust and noise, or musculoskeletal disorders
3. **Inherent safety:** Completely eliminate or reduce the risk of accidents associated with work or equipment so as to pursue intrinsic safety at the workplace at the equipment design stage



Industrial Accident Frequency (Frequency Rate of Lost Workday Cases)



*The figures for all industries, manufacturing industries and the automobile industry for 2003 are preliminary

Building Good Health

Managers and supervisors worked to create a healthy workplace, mainly by engaging in activities to develop better lifestyles and held health seminars as a follow-up to health checks, but in FY2003, the percentage of completely healthy Toyota employees¹ was the same as in FY2002, falling short of the goal of 70%. Participation in health seminars, one measure toward early recovery, and the ratio of Toyota employees whose health-related work restrictions were lifted² to those who participated in the health seminars also showed no change. In the future, Toyota will actively work to improve the awareness and practices of each employee, through approaches tailored to individual understanding and action levels.

1. Completely healthy Toyota employees:

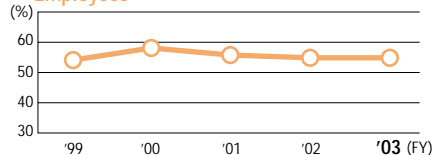
Employees with no problems found during health checks, and not receiving medical treatment

2. The ratio of Toyota employees whose health-related work restrictions were lifted:

Number of employees whose health-related work restrictions were lifted / Number of participants in health seminars x 100

("Work restrictions" refers to work-related restrictions imposed by an industrial physician, based on the results of a health check, in order to maintain or improve the health of an individual.)

Trend in Percentage of Completely Healthy Employees



Mental Health Care

Regarding mental health at the workplace, all of the newly appointed managers and supervisors undergo active listening courses³ that are effective in the prevention and early detection of mental problems. In FY2003, 2,235 newly appointed managers and supervisors at Toyota received this training and 95% of them evaluated it highly.

Regarding individual mental health care, by strengthening ties among industrial physicians, the workplace, and workers' families, Toyota is improving its follow-up system for people who are on leave, resulting in a positive effect on the return to work of such people.

Through these activities, Toyota aims to create a workplace with better communication in the future.

3. Active listening courses:

Experiential training in methods of building good communication through understanding and sympathy for others' feelings and emotions; a technique of active listening

Global Health and Safety Initiatives

With the aim of achieving the highest levels of health and safety at Toyota's 41 production-related overseas affiliates, relevant departments at TMC and mother plants are collaborating based on action items proposed by Toyota to implement health and safety activities adapted to conditions in each country and region.

In addition, employees who are assigned overseas and families accompanying them undergo physical examinations before, during, and after being sent overseas. Doctors and other specialist personnel conduct surveys of local medical facilities, and consult with employees and their families to alleviate concerns about living overseas.

TSAM (South Africa) AIDS Countermeasures for Employees

As one part of its employee health management program, TSAM (South Africa) is putting particular efforts into AIDS countermeasures. The good health and well-being of all employees is of vital importance to TSAM. TSAM is committed to providing an efficient health care service to all its employees. The health services on offer to employees include HIV/AIDS support programs.

The impact of HIV/AIDS on employees, their families and the community is of great concern to TSAM. In recent years extensive voluntary HIV testing and counseling services have been offered to employees. This program is supported by employees as it enables them to determine their status and act accordingly to ensure a healthy lifestyle.

TSAM provides immune boosting, opportunistic infection treatment, and chronic condition management through its on-site clinics, Occupational Health Division, and Employee Assistance Department. TSAM is also engaged in a range of internal and community outreach programs aimed at increasing awareness and education via posters, e-mails, industrial theatre, individual counseling and distribution of condoms.

Safety & Health Education Center Improved

The Safety & Health Education Center, established in July 1977, is the largest corporate-owned facility in Japan dedicated to health and safety training. The Center conducts numerous technical courses such as forklift and sling operation, and safety and health classes for managers.

In March 2004, the North Training Wing was constructed and machines/equipment which are used in typical automobile manufacturing processes were installed so that health and safety training in conditions that are as close as possible to those at actual work sites can be conducted.



Exterior of the North Training Wing



Welding process in the first floor of the North Training Wing



On-site clinic

Equal Opportunities & Respect for Diversity

Leveraging Diversity

With the on-going changes in the labor market environment due to such factors as the globalization of business and social advances of women, one major task for increasing a company's competitiveness is to cultivate management that can leverage human resource diversity. Based on the concept expressed in Toyota's Global Vision 2010 of "promoting the creation of environments featuring people from around the world with various abilities and values who are given the opportunity to experience self-realization as individuals", Toyota aims to increase its employees' motivation and optimize the value of its human resources.

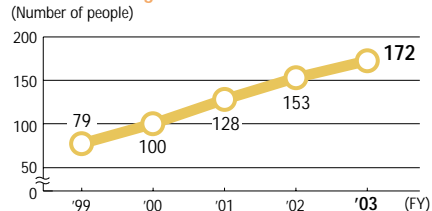
Family-friendly Policies

In the framework of a personnel policy that respects diversity, Toyota is also taking positive action to implement family-friendly policies. As a strategy to increase support for staff combining work with childrearing, an on-site childcare facility was set up in FY2002. In March 2004, another childcare facility was opened, and its range of use expanded. Toyota is also working to enhance communication with employees' families. These initiatives are based on the idea that encouraging a better understanding of the company and the workplace among families is important in helping employees create a better work-life balance. For example, in specific terms, in 2002, the Heartful Net e-club, an advice service that employees and their families can turn to confidentially, should the need arise, was created. In FY2003, workplace visits for families were held, and a family-oriented website known as Toyota Fami-net was introduced.

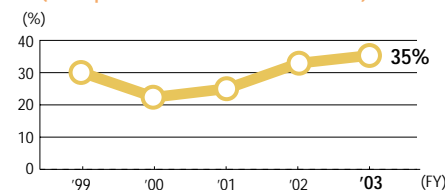
With various programs taking effect, the number of employees taking child rearing leave is trending upward. At the same time, as the proportion of women in our workforce grows year by year, more

and more people are joining the company after being impressed by the respect for diversity shown in Toyota's personnel policies.

Trends in Number of Employees Taking Child Rearing Leave



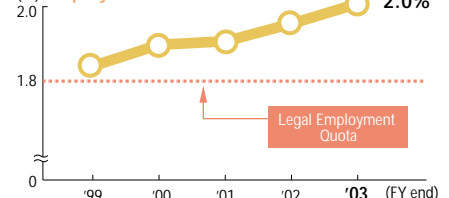
Trends in Ratio of Female Employees (Example of Administrative Positions)



Employment of Disabled People

As of March 2004, Toyota employed about 800 disabled people in many kinds of positions at various workplaces. Toyota believes in helping disabled people achieve autonomy within society, and makes it a basic rule to have them work together with other employees. Human consideration is given to the conditions of their disability at the business sites and ways are devised to accommodate them in workplace facilities so as to create a workplace environment that is safe and easy to work in. As of the end of March 2004, Toyota's disabled employees ratio was 2%, exceeding the 1.8% Legal Employment Quota.

Trends in Toyota's Disabled People Employment Ratio



Best Practice

North American Diversity Advisory Board

With the aim of assisting the senior management of Toyota's North American affiliates by making proposals for the Toyota Diversity Strategy (employment of women and people belonging to minority ethnic groups, and initiatives on relations with minority dealers and suppliers, etc.), a North American Diversity Advisory Board has been instituted. In April 2003, Diversity Board members visited Toyota Head Office in Japan and met informally with senior management. At a lecture given for young employees by the Board Chair, Former Secretary

of Labor Alexis M. Herman, those attending the lecture were keen to ask questions on policies to promote women in North America and other issues.



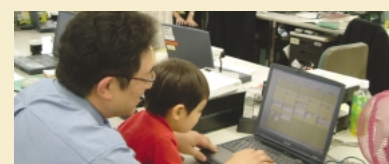
Senior management of TMA (USA) with Diversity Board members

Best Practice

Workplace Visits for Families

To encourage active communication between the workplace and home, workplace visits for families are organized at various work locations. The visits consist mainly of explanations about the company and work duties, informal meetings with managers and colleagues, and eating at the employee cafeteria. Thanks to creatively devised plans at individual workplaces, a total of 8,000 family members have taken part in the visits. In a questionnaire conducted after the visits, employees said they were pleased to have been

able to show their workplace to their children, while families said that they felt reassured after meeting managers and other people at the workplace and eating the cafeteria meals.



Workplace visits



Toyota Fami-net flyer



Human Resources Development

"Because people make our automobiles, nothing gets started until we train and educate our people." As seen in these words, which were expressed by Honorary Advisor Eiji Toyoda, Toyota seeks to develop human resources through the activity of making things. Toyota believes that the development of human resources requires the handing down of values and perspectives. In conjunction with the geographic expansion of business and the growth of business areas, undertaking global actions for the development of human resources has become a priority issue. Toyota is building both tangible (a new learning facility) and intangible (course content) structures relating to team member development that ensures a secure and steady flow of qualified human resources to conduct Toyota's global business in the 21st century.

Fully Committed and Thorough Human Resources Development

Toyota conducts systematic company-wide and divisional training and assignments for training purposes with an emphasis on on-the-job training (OJT) to ensure that associates can fully utilize their abilities.

In 2001, for the first time since the company was founded, human resources development was declared a company-wide strategic task and the whole company united in action to reinforce human resource development. By 2003, a fundamental review and enhancement of the human resources development system had been carried out, embracing all levels from young employees to managerial staff.

Toyota has defined the required qualifications of "professional staff" for office and engineering positions, and "T shaped human resources"² who are able to perform day-to-day activities and expand their skills in technical positions. Company-wide training is conducted based on employee qualifications, as well as specialized training for individual divisions, language training, and special knowledge and skill training.

1. Professional Staff:

Associates who can create added value on their own and contribute to society, as well as utilize their strengths and exercise teamwork

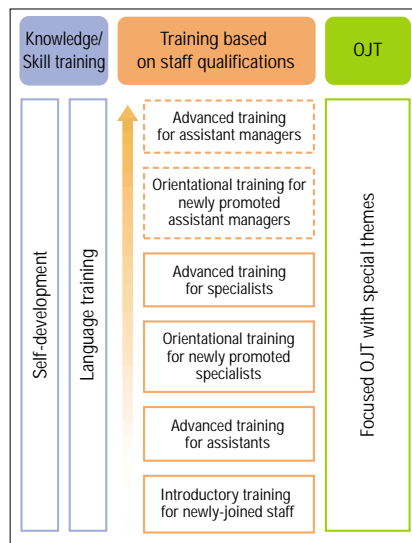
2. T Shaped Human Resources:

Team members with a broad range of skills, such as English language skills and operational knowledge (the crossbar of the "T") as well as highly specialized knowledge and experience in a particular field (the vertical bar of the "T")



"Toyota — Developing People" booklet

Company-wide Training to Support Professional Staff

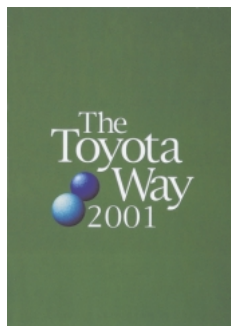


* [Dashed box] Under consideration

A Shared Toyota Way

In order to carry out the Guiding Principles at Toyota Motor Corporation, in April 2001 Toyota adopted the Toyota Way 2001, an expression of the values and conduct guidelines that all employees should embrace. In order to promote the development of Global Toyota and the transfer of authority to local entities, Toyota's management philosophies, values and business methods, that previously had been implicit in Toyota's tradition, were codified. Based on the dual pillars of "Respect for People" and "Continuous Improvement," the following five key principles sum up the Toyota employee conduct guidelines: Challenge, *Kaizen* (improvement), *Genchi Genbutsu* (go and see), Respect, and Teamwork.

Since 2002, Toyota has adopted the Toyota Way for individual functions including human resources, accounting, and overseas sales, and has been working on ensuring thorough implementation. The formulation of a Toyota Way for other individual functions is also being addressed now.



The Toyota Way 2001

Toyota Institute

In January 2002, the Toyota Institute was established as an internal human resource development organization that aims to reinforce the organic integration of global Toyota companies by way of sharing the Toyota Way as well as to promote self-sufficiency. The purpose behind the Toyota Institute's establishment is to promote the human resources development of Global Toyota in order to promote true globalization and to realize the advancement of Toyota's core values. TMC President Fujio Cho is the Toyota Institute's first president with associates managing the business.

Regarding specific programs, the Global Leadership School and the Management Development School constitute a part of the training programs within the Toyota Institute. From its establishment up to the end of FY2003, more than 750 employees have received training at the Institute, including approximately 320 from overseas affiliates.

In order to create a global human network, the Toyota Institute conducts training programs to enhance understanding of the Toyota Way, enable best practice sharing and drafting of action plans.

Outline of Training Programs

Global Leadership School	
Objective	Development of executive human resources capable of showing leadership from a global perspective
Content	<ul style="list-style-type: none"> Enhanced leadership ability based on the Toyota Way Reinforced business management knowledge and skills Global human networking
Attendants	Future global leaders from around the world

Management Development School	
Objective	Training of management to systematically understand and implement the Toyota Way as it relates to each core business area (production, sales, etc.)
Content	Production: Understanding of the Toyota Way at various functions at Toyota's manufacturing companies Sales: Understanding of the latest marketing methods, etc., based on The TOYOTA WAY in Sales and Marketing
Attendants	Middle management from around the world

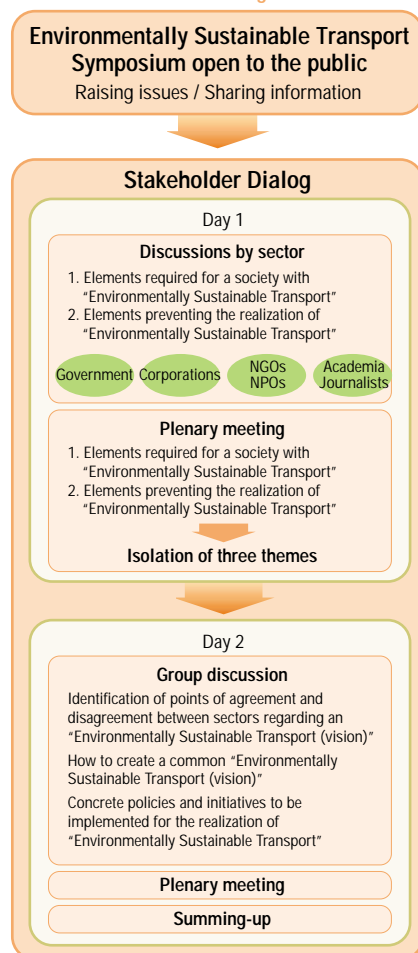
Dialog with Stakeholders

Third Toyota Stakeholder Dialog

The Toyota senior management believes that "In the business management of the 21st century, the views of all stakeholders, including NGOs, consumers, government, industry and academia, need to be considered." Based on this recognition of issues, the Toyota Stakeholder Dialog has been held yearly since FY2001. To ensure the neutrality of the Dialog, Professor Masaharu Yagishita of the Nagoya University Graduate School of Environmental Studies, is charged with the coordination and the Institute for Global Environmental Strategies (IGES) with the running of the Dialog secretariat.

The first Dialog was held under the theme "The Role of Corporations in Sustainable Development" and the second under the theme "Is it Possible to Achieve a Green Market?" Both the process and results of the Dialogs were highly instructive for those concerned with environmental management.

Flow Chart of Third Dialog



For the Third Dialog, held in November 2003, the theme was "Environmentally Sustainable Transport." The Toyota management team was represented by Senior Managing Director Hiroyuki Watanabe and Managing Officer Shin Kanada.

Special features of the Third Dialog were as follows:

1. As a way of allowing participants to share information on "Environmentally Sustainable Transport," ahead of the Dialog itself a symposium open to the general public on "Environmentally Sustainable Transport" was held.
2. A total of 30 people — selected from societal segments and areas with some link to transport and environmental issues — were invited to participate: seven from government bodies, seven from industry, eight from NGOs, NPOs, and other citizens' groups, 6 academics and 2 from the mass media (journalists).
3. The progression of the meeting was placed in the care of highly experienced facilitators and, to ensure lively debate, the discussions were based on groups of no more than 10 people.

For the first day of the Dialog, participants were divided by sector and discussed the elements required for a society with "Environmentally Sustainable Transport" and the elements preventing the realization of such a society.

For the second day, the discussions proceeded in sub-groups under three themes isolated on the previous day: 1) Identification of points of agreement and disagreement between sectors regarding an "Environmentally Sustainable Transport (Vision)"; 2) Tasks to be addressed in the creation of a common "Environmentally

Sustainable Transport (Vision)"; and 3) Concrete policies and initiatives to be taken for the realization of "Environmentally Sustainable Transport." After this, each group reported on the main points of its discussion to a plenary session, and, following a summing-up by the coordinator, the Dialog was brought to a close.

This year's Dialog did not go as far as setting the creation of an action plan for the target vision, but it did succeed in identifying a large number of issues where effort towards agreement needs to be applied. The main issues included:

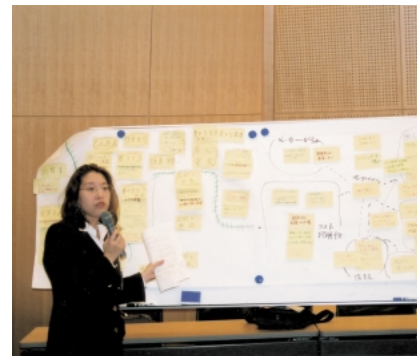
1. Consensus building on equality of mobility;
2. Approaches to transport policy brought down to a more concrete level and based on individual regions;
3. Appropriate division of roles between, and combined provision of, public and private transport;
4. Discussion of options for tax systems and fiscal measures to help realize sustainable transport;
5. Future advances in automotive technology.

In order to deepen the debate on these issues and find answers, it was agreed that the establishment of a system for sharing information was essential based on transparent and accurate information.

The third Dialog was not merely a forum where opinions could be gathered from stakeholders for future reference in business management; rather it showed its potential to develop as a space in which to build to a partnership whereby corporations can raise issues of deep relevance to them and, together with stakeholders, exchange information and opinions, think, seek solutions, understand each other's roles, and bring the issues to the attention of society.



At the symposium open to the public



A summary of the sector-by-sector discussions is presented



Toward Sustainable Mobility

Sustainable Mobility Project



World Business Council for Sustainable Development

Participation in WBCSD

Toyota has been a member of The World Business Council for Sustainable Development (WBCSD) since its founding. WBCSD is a coalition of 170 international companies from more than 30 countries united by shared commitment to sustainable development via the three pillars of economic growth, ecological balance and social progress. The organization participates in policy development and contributes to a sustainable future from a global perspective. Honorary Chairman Shoichiro Toyoda serves as Vice Chairman of the organization and has served as co-chair of the Sustainable Mobility Project (SMP), which is a sector project organized under the aegis of the Council.



<http://www.sustainablemobility.org/>

Essential to economic development is active movement of people and goods. If the mobility divide could be removed so that all people enjoyed equal mobility and could freely exchange information and goods, it would lead to greater mutual respect and understanding. However, such an increase in mobility would increase environmental impact and the consumption of non-renewable resources, notably energy sources. Therefore the positive aspects of mobility need to be reinforced and the negative aspects resolved. This is the major task society now faces.

Final Report Completed

The SMP was initiated in 2000 by 12 global automotive and energy companies who have worked together under the sponsorship of the WBCSD in order to present a vision of sustainable mobility and ways to achieve it. In July 2004, after four years, it completed its report "Mobility 2030: Meeting the Challenges to Sustainability."

SMP defines sustainable mobility as "the ability to meet the needs of society to move freely, gain access, communicate, trade, and establish relationships without sacrificing other essential human or ecological values today or in the future." On this basis, it lays down 12 "indicators" for sustainable mobility such as accessibility, environmental impact, safety, prospective

Mobility 2030:
Meeting the Challenges
to Sustainability
Overview



rates of return to private business, etc.

Analysis based on these criteria led to the finding that "the present system of mobility is not sustainable, nor is it likely to become so if present trends continue." Additionally, it appears that "not all the indicators point to a worsening of the situation. But enough do for the SMP to conclude that societies need to act to alter their direction."

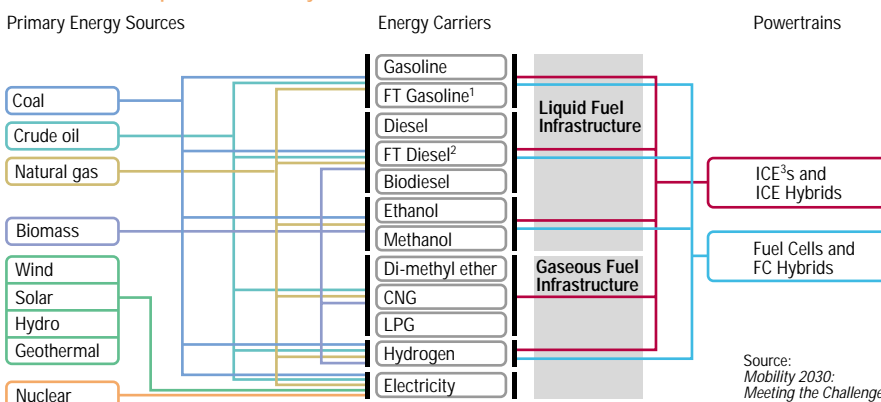
In addition, under the heading "building blocks" of sustainable mobility, the SMP examines a wide range of factors, including the potential of powertrain technologies and fuels and vehicle technologies other than propulsion systems. To actually contribute to sustainable mobility, technologies employing the right materials for the right application need to be incorporated into actual transport systems and these systems then need to be used widely. They must be affordable, accessible, safe, secure and reliable. A society with transport systems featuring these characteristics can be said to be sustainable.

Goal 1	Reduce transport-related conventional emissions to levels such that they cannot be considered a serious public health concern anywhere in the world
Goal 2	Limit transport-related GHG emissions to sustainable levels
Goal 3	Significantly reduce the number of transport related deaths and serious injuries worldwide
Goal 4	Reduce transport-related noise
Goal 5	Mitigate transport-related congestion
Goal 6	Narrow the mobility opportunity "divides" that exist between the world's poorest and richest countries and within most countries
Goal 7	Preserve and enhance the mobility opportunities available to the general population

The SMP has produced a vision based on seven goals which also addresses the need to remove the mobility opportunities divide that affects poor communities and people with poor transport access. However, this will require a great effort. In order to make it possible for all people in the world to enjoy the free mobility that allows them to travel with comfort and convenience when they need to, there is a need for the provision of transport systems in excess of current projections, and sustainable mobility should be applied to this provision.

In response to the report, the SMP is currently in the process of discussing action plans to be worked out with the cooperation of all member companies.

Possible Transport Fuel Pathways



Source:
Mobility 2030:
Meeting the Challenges
to Sustainability

1. FT gasoline:
A gas-to-liquid product produced from natural gas by Fischer-Tropsch processing. Used in spark ignition engines.
2. FT diesel:
A gas-to-liquid product produced from natural gas by Fischer-Tropsch processing. Used in compressed self ignition engines.
3. ICE:
Internal combustion engine

Philanthropic Activities — Partnership with Society

Basic Policy

Since its foundation, Toyota has been engaged in various philanthropic activities with the goal of becoming “a good corporate citizen.” Seeking to contribute toward a prosperous society and harmoniously coexist with society, Toyota plans to continue its vigorous philanthropic activities.

Philanthropic Activities Policy

Guiding Principles at Toyota Motor Corporation (excerpt)

1. Honor the language and spirit of the law of every nation and undertake open and fair corporate activities to be a good corporate citizen around the world
2. Respect the culture and customs of every nation and contribute to economic and social development through corporate activities in local communities



Philanthropy Principles

1. Actively develop corporate philanthropy based on “Research & Creation” and “For a Prosperous Society.”
2. Foster corporate culture among all employees to be able to proactively practice activities as a corporate citizen.

Corporate Philanthropy Committee

Under the direction of the Corporate Philanthropy Committee, chaired by the company president and comprised of relevant directors, Toyota's various departments are carrying out philanthropic activities together. Also, as a member of the Nippon Keidanren (Japan Business Federation) “One-Percent Club” since 1990, Toyota has contributed more than 1% of its ordinary income on an unconsolidated basis to its philanthropic activities.

Areas of Activity in Japan and Overseas

In Japan, Toyota is engaged in activities in three major areas: the promotion of science and technology, promotion of arts and culture, and conservation of the environment. Overseas, Toyota is focusing on the environment and education, and Toyota employees themselves participate in various programs in cooperation with local communities, municipalities, and NPOs, etc. Toyota is also finding ways to contribute toward a prosperous society by supporting employee volunteer activities, donations, and other initiatives.



http://www.toyota.co.jp/en/community_care/index.html

Promotion of Science and Technology

Toyota is utilizing its know-how in supporting activities that help promote science and pass on the culture of making superior products.

Scientific Jack-in-the-Box! The Why/What Lecture

To help elementary and middle school students regain an interest in science, Toyota has been running a program called “Scientific Jack-in-the-Box! The Why/What Lecture” since 1996, which helps students appreciate the mystery of science and the joy of making things.

With the Why/What Lecture, Toyota sends employee volunteer lecturers who belong to the Toyota Engineering Society, comprised mostly of Toyota engineers, to science museums and scientific events all over Japan. Science and engineering classes targeted at elementary and middle school students are held in each community. Through classes with original titles such as “Building a safe vehicle body,” “Let's run a wind tunnel experiment!,” and “Let's build a hovercraft!,” the volunteers help the students gain a proper understanding of science and physics principles and teach them the joy of making things. Since the start of the program in 1996, a total of approximately 14,000 students have participated in this program.

In FY2003, a total of approximately 1,467 students participated in 28 science and engineering classes held at science museums all over Japan, such as in Hokkaido, Fukushima, Aichi, Ehime, and Fukuoka prefectures, including an event held in cooperation with the National Science Museum, Tokyo, which was attended by approximately 360 students.



The Why/What Lecture

Other Programs

- Investigation and research on Toyota Collection
- Operation of the Toyota Commemorative Museum of Industry and Technology

Promotion of Arts and Culture

In the area of arts and culture, Toyota is supporting activities that are related to “education and fostering of talent,” “expansion of cultural activities and people involved in such activities” and “revitalization of local culture.”

TOYOTA Art Management Seminar

In order to foster art advocates who will help revitalize local communities through art-related activities, Toyota, in cooperation with the Association for Corporate Support of the Arts, Japan, has been conducting seminars on music, fine arts, and performance arts. Since it was started in 1996, this program has been held 53 times in 32 locations nationwide, attended by a cumulative total of approximately 10,000 people. A general symposium was held in March 2004 to mark the end of activities.



FY2003 Art Management Seminar

Toyota's Encounter between Children and Artists Program

To nurture children's sensitivity and their rich sense of value, Toyota has been involved in promoting workshop-type classes in art and developing young artists, in cooperation with an NPO called “Artists and Children.” Begun in 2003, the classes are held by artists at schools and children's facilities.

TOYOTA Choreography Award

Discovering Choreographers who will be the Driving Force Behind the Next Generation

In order to discover and foster choreographers who will be the driving force behind the next generation of dance, Toyota has been presenting awards in the realm of dance since 2001, in cooperation with the Setagaya Public Theatre in Tokyo. Applicants to the awards are asked to submit videos of their choreographed dance performances, from which eight finalists are chosen by a selection committee. These eight finalists then demonstrate their work at an open screening panel. Winners are awarded the “Next Age Choreographer Award” and the “Audience Award,” as well as the opportunity to present their work at the theatre in the following year with Toyota shouldering part of the cost of their production.

Other programs

- TOYOTA Master Players, Wien
- TOYOTA Community Concert (TCC)
- TOYOTA Youth Orchestra Camp (TYOC)



Conservation of the Global Environment

Toyota has been engaged in tree-planting activities and different forms of environmental education to help prevent global warming and conserve the global environment.

Term 1 of Reforestation Activities to Prevent Desertification in China Completed

Toyota completed according to schedule a three-year reforestation project which was initiated in 2001 as part of its social contribution program in the Fengning Man Autonomous County of Hebei Province, China, reforesting a total of 1,500ha. Toyota provided the necessary funds for the reforestation, and together with the relevant Chinese bodies, monitored the resulting restoration of the environment, undertook the selection of drought-resistant tree species, and initiated the cultivation of pasture grass and medicinal plants. The project's three-year second term began in 2004.

Toyota Environmental Activities Grant Program

In commemoration of Toyota winning the United Nations Environment Programme (UNEP) Global 500 Award in 1999, the "Toyota Environmental Activities Grant Program" was started in 2000. Under the key theme of "Social Investment for Sustainable Development" the grant supports practical projects rooted in local communities both in Japan and overseas, in the fields of environmental technology and environmental education. In FY2003, the fourth year, the grant program received 96 applications covering a wide range of activities from domestic and foreign research institutes as well as non-governmental organizations engaged in civic and environmental activities. The selection committee, consisting of a group of experts from Japan and abroad, based its selections on considerations including the business feasibility of the projects and the prospects of such activities for future development. A total of 170 million yen was awarded in grants to 10 organizations for projects such as "Environmental Education, Making Energy-saving Life an Entry Point, for the Youth and Elementary and Junior-high School Students" (Kenya) and "Environmental Education in an Indigenous Region of Tropical Mexico: Recovering Biodiversity, Local Knowledge and Culture." Over the previous four years, the program has funded a total of 730 million yen, supporting a total of 48 projects.

For further details on the Toyota Environmental Activities Grant Program:
E-mail: toyota-ecogrant@mri.co.jp

Environmental Partnership Organizing Club Activities

In February 2000, Toyota and other environmental opinion leaders from industries in the Chubu region of central Japan joined together and established the Environmental Partnership Organizing Club (EPOC). EPOC intends to pursue 'eco-efficiency' and to establish an environmentally advanced 'recycling-oriented economic society' in the Chubu region which will serve as a model throughout the world. By forming links between residents living in regional communities and government etc., and between different corporations EPOC is promoting the spread of environmental action throughout society and the creation of a social climate informed by an 'environmental consciousness.' Toyota is participating in various activities as one of the club members.

In FY2003, to help citizens learn about the present state as well as the future of eco cars, Toyota held the Environment-friendly Car Forum in Colorful town Gifu, a Toyota shopping mall in the Chubu region. Toyota exhibited its eco cars, including fuel cell vehicles and electric vehicles, and provided the visitors with opportunities to test drive the vehicles. Approximately 40,000 people attended this event. Additionally, with the appointment of Toyota Vice Chairman Kosuke Ikebuchi as chairman of EPOC in FY2004, Toyota plans to continue participating in establishing environmental actions throughout society.



<http://www.epoc.gr.jp/index-e.html>



Environment-friendly Car Forum

Environmental Education Program for Local Elementary School Students

Since FY2001, Toyota has offered an experimental forest near Toyota City, under the Forest of Toyota project, located in the suburb of Toyota City, Aichi Prefecture, as a site for environmental learning for local school children. The Forest of Toyota project provides a comprehensive learning experience through hands-on activities with two interpreters who possess abundant experience and knowledge in environmental issues. In FY2003, a total of 3,130 pupils from 90 classes at Toyota City elementary schools participated.

Other programs

- Tree planting activities in the Forest of Toyota
- Environmental Education Programs
- Eco-no-Mori Seminars

Volunteer Activities

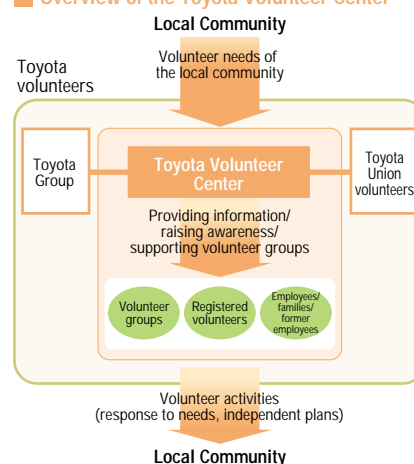
In order to harmoniously coexist with the local communities and ensure their healthy development, Toyota is engaged in various activities that include employee volunteer activities.

Toyota Volunteer Center

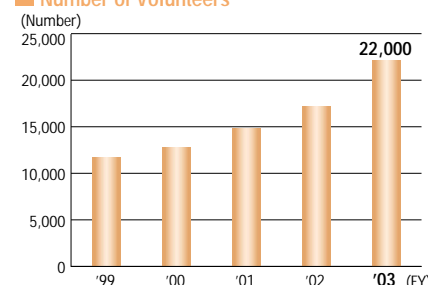
The Toyota Volunteer Center was established in 1993 to aid employees, their families, and former employees interested in volunteer activities. The Center supports the expansion of activities and self-reliance in volunteers by providing information and raising awareness to enable them to work enjoyably and safely. In FY2003, Toyota carried out a variety of activities, including forest maintenance, holding a study meeting for volunteers involved in disaster response, holding social activities with an organization of handicapped citizens and driving shuttle buses for regional festivals.

Through the steady accumulation of activities—from independently planned activities to those that meet the needs of local communities—Toyota is aiming to forge links with local communities and society at large. In FY2003, a total of about 22,000 people participated in these activities.

Overview of the Toyota Volunteer Center



Number of Volunteers



Toyota Clean Net

In June 2002, Toyota initiated the "Toyota Clean Net" campaign, unifying road beautification activities that were previously conducted on an individual plant or housing works basis, with the Ministry of Land, Infrastructure and Transport's Volunteer Support Program with the aim of establishing and expanding road beautification activities. Activities organized by employee volunteers are also intended to enhance the environmental-consciousness of the general public for the success of the 2005 World Exposition, Aichi, Japan (EXPO 2005) to be held in Aichi Prefecture from March 2005. Under the slogan "Let's clean up local roads, let's expand our circle of activity," these activities are being held with the additional purpose of cleaning up the area around the expo site. From November 2003, clean-up activities, previously held once every two months, are held on the 25th of every month (designated EXPO Day), in an effort to further beautify the surrounding town areas.

In FY2003, a total of about 10,000 people participated in activities held nine times during the year and collected about 4,000 bags of trash.



Toyota Clean Net activities

Disaster Volunteer Net

In April 2003, Toyota initiated the "Toyota Group Disaster V (Volunteer) Net" for the purpose of aiding the recovery of disaster victims and areas stricken by natural disasters. In the case of natural disasters occurring in Aichi Prefecture, volunteers are well prepared to make a quick response to emergencies. When disasters occur, Toyota will cooperate with the government's regional volunteer support headquarters to gather information on the disaster areas and on the needs of the disaster victims. The information will be sent out to the registered members from headquarters via a network, and will become the basis for action.

Other Programs

- Volunteer Plaza
- Donation of proceeds from a charity bazaar
- Toyota Summer School



http://www.toyota.co.jp/en/community_care/index.html

Cooperation with NPOs

In promoting philanthropic activities through programs, such as the Eco-no-Mori seminars and the Toyota's Encounter between Children and Artists Program, Toyota employees work with NPOs that possess highly specialized expertise.

Toyota is also supporting NPOs that are

Participation in the 2005 World Exposition, Aichi, Japan to be held from March 2005

From March 25 through September 25, 2005, the 2005 World Exposition, Aichi, Japan (EXPO 2005) will be held under the themes of "Nature's Wisdom" and "Grand Intercultural Symphony" in Nagoya Eastern Hills (Nagakute Town, Toyota City and Seto City). Toyota Motor Corporation, together with 16 of its group companies, will participate in EXPO 2005 under the theme "The Dream, Joy and Inspiration of Mobility in the 21st Century." With the hope of facilitating new directions for a brighter and more prosperous future society in which "all people throughout the world can benefit from mobility, and in which people, nature and the planet can live together in harmony," Toyota intends to incorporate the following five challenges into its technological exhibits:

- 1) The natural-cycle earth society
- 2) A revolution in motive power sources
- 3) Optimum mobility
- 4) Harmony with society
- 5) Meeting the needs of individuals

The pavilion will be constructed and operated based on the concept of a "Natural-Cycle Earth Pavilion," utilizing the earth's renewable mechanisms. Through its pavilion, Toyota will demonstrate its proposal of a society that is committed to the thorough implementation of renewable energy, the use of reusable resources, and the concepts of reuse and recycle. Toyota will propose a society that intelligently utilizes a variety of methods for mobility based on specific needs, for example, a hydrogen society that utilizes hydrogen energy (the next-generation fuel) through the use of Fuel Cell Hybrid Buses that carry visitors between the EXPO 2005 areas; and a next-generation Intelligent Multimode Transit System (IMTS) for on-site transportation that uses CNG

trying to solve social problems, such as the Emergency Medical Network of Helicopter and Hospital (HEM-Net), which provides helicopter transportation for medical emergencies, and St. John Ambulance, Japan, which trains people to offer necessary emergency medical treatment during natural disasters and accidents.

(compressed natural gas) as its fuel. Additionally, through the use of performance shows involving the i-units, which are future-concept vehicles, as well as Toyota Partner Robots, Toyota will propose a society free from traffic accidents, and in which the elderly and those with disabilities can achieve independent mobility. It will also demonstrate possible future technologies and vehicles with the potential to respond to the hopes of each individual to move more freely and to experience mobility as they desire.

Toyota's participation in EXPO 2005 is focused on finding ways to solve environmental and resource issues. The building itself will utilize easily dismantled and reused steel frame building materials. Lightweight steel frame materials, of the type frequently used in building projects, have been selected based on the flexibility with which they can be reused. A newly developed friction joining construction method will be used to raise the building, allowing for a minimum use of bolt holes and welding, and rendering the materials reusable after dismantling. With the intention of utilizing recyclable materials as far as possible, the exterior walls will be constructed from a recyclable material manufactured from post-consumer waste paper. The interior will partially use kenaf, a material being commercialized by the Toyota Group. Once EXPO 2005 closes, Toyota plans to reuse or recycle all building materials so that the pavilion's construction materials waste emission is zero. Energy for the pavilion will be generated by wind power. The wind power generator to be built offsite, at Tahara City in Aichi Prefecture will produce an equivalent amount of electricity to that consumed by the pavilion, reducing total CO₂ emissions to zero.



Please see p. 44 for details on IMTS

Support of Local Community Projects

Toyota supports projects that lead to the development and revitalization of the local communities. For the Central Japan International Airport, which will open in 2005, Toyota is providing various kinds of support as one of the local investing corporations, while also offering support in terms of human resources. Once the airport opens, Toyota expects it to become a major driving force

behind the development of the Chubu region as a key site for international cultural and commercial exchange. In Toyota City, where Toyota's head office is located, Toyota participates in the Toyota City ITS Promotion Council which consists of representatives from industry, local government, academia, and the private sector, and makes available its know-how on ITS to help improve the City of Cars — Toyota City.



Highlight

TOYOTA Shirakawa-Go Eco-Institute to Open in April 2005

Aiming to be Japan's finest nature school, located in the country's most beautiful village

For Environmental Education in the 21st Century

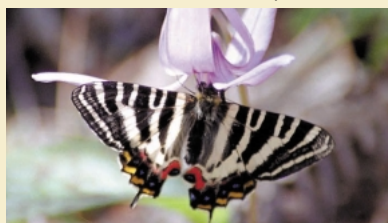
In April 2005, the TOYOTA Shirakawa-Go Eco-Institute will open in the Magari district of the village of Shirakawa in Gifu Prefecture, aiming to be Japan's finest nature school, located in the country's most beautiful village. The facility will make use of the culture of Shirakawa-Go—a village of houses with thatched roofs built in the style of traditional Japanese *gassho* architecture—which is registered as a world heritage site, and the abundant natural environment at the foot of Mt. Hakusan to educate children, who will play an important role in the realization of sustainable development, as well as tourists and other groups visiting Shirakawa-Go through hands-on experiences with nature.



Artist's rendition of facilities upon completion

Advance Surveys to Investigate the Forest Ecosystem

Before proceeding with the school plan, an advance environmental impact survey was carried out. The survey indicated the existence of 1,295 species of living organisms in the area including the Gifu swallowtail butterfly and the Japanese mountain peony (*paeonia obovata*), which are threatened with extinction. To protect these precious plants and animals, the Eco-Institute site was limited to land previously used for housing or agriculture and the area of the site to be developed was reduced to 2.6% of the entire site. Additionally, the layout of the structure was adapted to the sloping land by restricting height and arranging the facility in a number of separate buildings. In this way, efforts were made to ensure environmental protection and minimal alteration of the natural landscape.



The endangered Gifu swallowtail butterfly poised on a dogtooth lily

New NPO to Operate Eco-Institute

Starting in 2001, the project was taken forward from the planning stage through three-way cooperation between the Shirakawa municipality, the Japan Environmental Education Forum, and Toyota. In June 2003, the Shirakawa-Go Eco-Institute Steering Committee was set up to look into the specifics of the Eco-Institute's operation. Currently, preparation is in progress toward the establishment (planned for October 2004) of a new environmental NPO based around the Steering Committee. As well as running the Eco-Institute, the activities of the new organization will include environmental preservation projects in the region. In order to encourage interaction with NPOs and nature schools in Japan and overseas, an NPO Room will be established in the study building to engage in active exchange of information and to jointly develop high-quality programs. The proposed principal of the school is Tadashi Inamoto, a managing director of the Japan Environmental Education Forum.



The Three Pillars of the Environmental Education Program

The environmental education program is based around three types of hands-on learning: experiencing nature, experiencing traditional culture, and experiencing environmental technology. Its base concept is for students to learn the importance of nature through practical activity and direct encounters.

The section on experiencing nature will include planting and nurturing trees as part of the forest ecosystem revitalization program. In the section on experiencing traditional culture, the programs will involve learning



Local elementary and junior high school students take part in a course to make miniature hydroelectric power generators

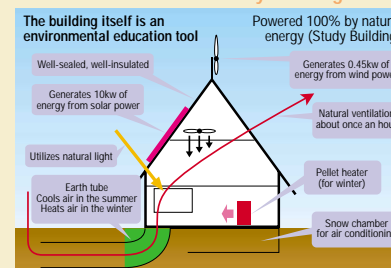


about the construction techniques of traditional Japanese *gassho* architecture and the traditions and culture of Shirakawa. In the section on experiencing environmental technology, programs will be based on cutting edge environmental technology and on "making things," and will look at energy issues. In October 2003, some 50 local elementary and junior high school students took part in a course to make miniature hydroelectric power generators.

Environmental Technology that Utilizes Natural Energy

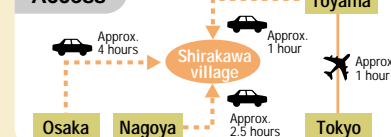
The facility, which can provide accommodation and study facilities for 100 people, consists of five buildings including a main building and lodging facilities. The study building is itself designed to act as a living environmental education tool, integrating in its design wind-powered electricity generation (0.45kw), solar-powered electricity generation (10kw), use of natural ventilation and natural light, a pellet heater¹ and an earth tube, and also a snow chamber² for air conditioning which is a local feature of the village of Shirakawa. The application of these and other environmentally adapted technologies is an attempt to use 100% natural energy sources.

Environmentally-adapted Technologies to be Introduced in the Study Building



1. Pellet heater: Heated by burning waste material
2. Snow chamber for air conditioning: Snow is collected and stored in a chamber until the summer, when it is used for air conditioning

Access



http://www.toyota.co.jp/en/community_care/sirakawa-go/index.html

Examples of Initiatives

In addition to philanthropic activities carried out by TMC, affiliates in countries and regions around the world are also contributing to the development of local communities by partnering with other organizations, such as NPOs, in order to carry out a wider range of activities with a greater focus on matching the needs and situations of the particular countries and regions.

Initiatives in Africa

Improving the Basic Scholastic Abilities of Children through a Training Program for Teachers

In 1992, to improve the basic scholastic abilities of elementary and junior high school children, TSAM (South Africa) began the Toyota Teach educational program, which is aimed at teachers and provides training in the teaching of english, mathematics and science and in methods of school operation and management. A fund has been set up with the Toyota South Africa Foundation, established in 1989, to provide ongoing support.

Improving Teacher Skills to Improve Basic Scholastic Abilities of Children

"I used to have a problem with teaching mathematics and sometimes I even got other teachers to stand in for me. Since I took part in Toyota Teach, I feel confident about teaching mathematics and now I want to teach it to all grades." This is the comment of one teacher who joined the program.

Toyota Teach is a program which has been run by the Toyota South Africa Foundation for over ten years. Training is offered to elementary school teachers in the Umlazi and Umbumbulu areas of South Africa, where many TSAM employees live. By strengthening teacher skills, the program aims to improve the basic scholastic abilities of children.

The Toyota South Africa Foundation was established in 1989 and is jointly funded by Toyota and TSAM. One of its founding objectives was to address the issue of social upliftment by providing better opportunities in education and thereby provide a platform for growth in the future and have a greater long term impact on socio-political imbalances. A survey carried out to find out what kind of projects were required to realize these goals revealed that students, even when they had advanced into vocational schools and universities, were not able to fully benefit from a tertiary education as their basic education was of a very poor standard. In response, it was decided to undertake a program of teacher training in order to effectively improve the basic scholastic abilities of elementary and junior high school children.

Training is provided in teaching methods for the three subjects of English, Mathematics, and Science and in methods of school operation and management. In the initial stages

of the program, funds were also provided for the purchase of teaching materials, laboratory equipment, and similar items.



Children in the third grade of elementary school learning arithmetic using teaching materials

Establishment of Qualification for Teachers Completing Training

A special feature of the program is that six local NGOs and educational institutions participate and work together to create the content of the program. These six bodies have cooperated in setting a uniform training method and have established a qualification for teachers completing the training.

Teachers participating in the program complete ten modules in two years. For example, there are modules in science and mathematics teaching, language learning, environmental education, and classroom management, and the content of each module provides both practical and theoretical exposure to these topics. Between 1996 and 2003, 298 teachers received training and the qualification was awarded to the 131 who completed the necessary units.

The education that Toyota Teach aims to realize is teaching methodologies which will ensure meaningful learning and thinking; a quality understanding of language, mathematics, science and technology; ways of moving from

authoritarian teaching to meditative practices that foster interactive learning; and the capacity to change and develop. As an example, one teacher who took part in the program devised a worksheet for the arithmetic lesson showing the birthday months of different children in a class; then he asked the pupils questions such as "which months have more than two birthdays," "which months have the same number of birthdays," and "how many students are there in the class." This was designed to stimulate interest by dealing with topics relevant to the students' own lives and thereby encouraging them to discover new things for themselves. This is just the kind of education that Toyota Teach aims for.

Through continued support to the Toyota South Africa Foundation, TSAM plans to go on spreading the Toyota Teach program, but will also use a range of other methods to widen the educational opportunities of children in Africa and improve education for them.



Teachers studying under the Toyota Teach program



Initiatives in Asia

Character Building through Environmental Improvement Activity in the Toyota Eco Youth Program

UMWT (Malaysia) conducts an environmental improvement program called the Toyota Eco Youth Program for secondary school students aged 13 to 17. The aim of the program is to raise the environmental awareness of the students and at the same time to build character by using the Problem Solving Methodology. Staff of the Environmental, Safety and Health Division at UMWT give direct guidance to the students in methods of environmental improvement.

Open to Secondary Schools in All States and Federal Territories of Malaysia

With compulsory education up to the age of 17, Malaysia is a society with a great enthusiasm for education, especially in practical subjects. The upgrading in March 2004 of the Department of Environment—which had until then been a department within the Ministry of Science Technology and Environment—to become the Ministry of Natural Resources and Environment is one indication of the increased interest in environmental improvement. Responding to this background situation, UMWT declared the implementation of the Toyota Eco Youth Program as part of its Environmental Action Plan up to the year 2005, initiating the program in 2001.

To begin with, the program was implemented in eight schools in the suburbs of Kuala Lumpur, but was later extended to cover more schools. With the cooperation of the Malaysian Ministry of Education, the program is now implemented in 15 schools each year, one in each of the 15 states, including the states of Sabah and Sarawak on the island of Borneo.

UMWT Staff Visit all Schools to Give Guidance on Methods of Environmental Improvement

The Toyota Eco Youth Program is conducted as follows. First the education ministries of the states select the 15 schools to participate. A team of two teachers and eight students from each selected school is sent to Kuala Lumpur, where they are given an outline explanation of the program by UMWT. This takes the form of a three-day workshop consisting of basic training in problem solving skills.

Next, each school chooses and registers an improvement topic relevant to

its own situation which it wants to take action on, selected from a range of topics including energy-consumption, waste, water quality, conservation of water resources, odor pollution, etc. UMWT Environmental, Safety and Health Division staff evaluate and check the suitability of the environmental improvement topic from the viewpoint of its scope, importance, efficiency, sustainability, and other considerations. In FY2003, the varied range of topics chosen by schools included the reduction of solid waste from classrooms, reduction of water consumption in the student hostel, and control of unpleasant odor in the boys' water closet.



Each school chooses its own action topic

UMWT staff visit all the participating schools and teach the students the basics of problem solving skills. The content of their teaching covers quality control circles, task-setting, topic-specific solution methods, the significance of data-centered action, the importance of on-site hands-on action, how to operate PDCA cycles and other techniques from the environmental improvement activity of business.

In response, each school forms action teams, with the eight pupils sent to Kuala Lumpur as team leaders, and sets to work on the improvement activity. Three months

after the start of activity, the staff of UMWT visit all the schools again. As well as checking on the degree of progress, they also give advice where necessary.



UMWT staff visit the school to check progress

In August, when the 7-month action period is over, representatives from the 15 schools gather again in Kuala Lumpur, where they hold a contest consisting of presentations and exhibitions. The contest is judged by the Malaysian Ministry of Education and UMWT, and outstanding schools receive an award in September. In FY2003, awards were given to five schools, including one from the state of Sabah on Borneo for action to reduce and recycle wastewater.



Award ceremony for outstanding schools

"The program allowed us to expand our knowledge of the environment and taught us how it should be managed. The method of step-by-step problem-solving through quality control activity was very useful too," said one student who took part in the program.

Initiatives in North America

Support for Family Literacy Program

In 1991, TMA (North America) began its longstanding partnership with the National Center for Family Literacy (NCFL). NCFL is an organization that has pioneered the concept of family literacy, to establish model programs throughout the country.

Improving the Ability of Parents and Children through Family-based Education

NCFL is a non-profit organization which provides educational and social services for families in the United States. TMA has supported NCFL since 1991, in which time it has provided more than US\$19 million in funding.

Family literacy integrates adult education, children's education and parent training into one comprehensive program. In family literacy programs, parents and children work and learn together, giving parents an opportunity to actively participate in their children's educational development, improving their own skills at the same time.

TMA's core values and those of NCFL are very compatible. TMA believes in NCFL's philosophy that parents play an important role in their children's education. To break the vicious circle whereby children in households where parents have poor literacy skills also have difficulties with reading and writing and to improve children's capacity for learning, the skills of the parents must first be improved. The partnership has been marked by groundbreaking innovation in program design, significant legislative influence, and an increase in public awareness of the important roles parents play in their child's education.



Parents and children learn together

Implementation of Programs Designed for Hispanics

In March 2003, the Toyota Family Literacy Program (TFLP), designed for Hispanic/Latino and other immigrant families, was begun with a US\$3.2 million contribution from TMA. The program was initiated in five cities across the nation in the same year — Chicago, Los Angeles, New York, Washington DC and Providence.

Hispanics are America's most rapidly growing population. Parents in many recently immigrated Hispanic families speak little to no English, possess low literacy skills in their native language due to limited education, and frequently struggle to assist their children's English language development.

Family literacy programs that serve immigrant families provide a venue where the home culture and language are respected and continue to develop. The family learns reading strategies in their native language, which assists the process of learning a second language. The TFLP also addresses the concern that there has been a decrease in contact that immigrant parents have with their children's school. Involving parents in these programs helps connect the family to the school. The goal of TFLP is to develop models that can be replicated nationwide.

"The partnership between Toyota and NCFL has been the catalyst for more than 5,000 family literacy programs which have benefited hundreds of thousands of families throughout America," said Sharon Darling, NCFL's president and founder. "We're pleased that Toyota is taking the next step along with us in providing family literacy opportunities to the growing Hispanic population in this country."

"To approach literacy through the family is the most effective way to increase education levels of adults and children," continued Ms. Darling. "Increased education levels lead to a better future for families and the NCFL/TMA partnership provides a link in building stronger communities where schools encourage parents to become active participants in their children's learning."



Participants improve their English ability by first tackling their native language



National Center
for Family Literacy



Initiatives in South America

Support for the Sustainable Galapagos Project

The Galapagos Islands in the South American country of Ecuador are known as a natural treasury of rich biodiversity. At the same time, the ecosystem is fragile and has in the past suffered great damage from an oil spillage after a tanker ran aground. The Galapagos Sustainable Energy Initiative (Sustainable Galapagos) project was initiated to prevent a recurrence of such an incident. The ultimate aim of the project is to develop a renewable non-polluting energy supply for the islands. The project, in which Toyota Motor Sales (TMS) participated, was set up by the World Wildlife Fund.

The Energy Blueprint for the Galapagos Islands (Blueprint) is the

basis of the Sustainable Galapagos project. The Blueprint is a 10-year plan dealing with the islands' power supply, fishing, tourism, and transportation sectors and was formulated jointly by TMS' Advanced Technologies Group and the University of Colorado.

So far, the plan has formed the basis of activities including support for ISO 14001 certification of the main fuel-receiving ports, development of an appropriate process for oil collection and recycling, and a Renewable Energy Education Campaign to train teachers how to teach their students about renewable energy. TMS has provided support in the areas of both technology and funding.



The Galapagos Islands were the inspiration for Darwin's theory of evolution

Initiatives in Europe

Support for European Red Cross Road Safety Campaign

Since 2002, Toyota Europe has implemented philanthropic projects across the whole of Europe focusing on the fields of environmental education and road safety. In 2003, one of these projects involved a 10-month campaign of support for educational campaigns on road safety and life-saving and first-aid organized by the National Red Cross Societies for children in 26 European countries. Some 750,000 elementary schoolchildren aged 7 to 10 learned about road safety and what to do in the event of an accident.

Toyota Europe did not only provide financial support. In more than ten countries, including Denmark, the Czech Republic, and Finland, distributors and dealers participated in campaigns in cooperation with the local Red Cross, giving first-aid demonstrations in urban locations such as shopping centers and fairgrounds and distributing pamphlets and fluorescent reflectors to be attached

to bags and clothing. Toyota Europe also provided vehicles for the campaign.


At the closing ceremony of the campaign, held in April 2004 in Berlin, Germany, a collection of successful examples of road safety and first-aid awareness activities was launched in the form of a Good Practice Guide. This guide has been translated into 13 languages and distributed to schools and educational organizations in the 26 countries, and can also be viewed on websites. Taking advantage of the partnership with the European Red Cross that arose from these campaigns, Toyota Europe plans to continue to provide support and cooperation to a variety of road safety and first-aid educational projects.



First-aid demonstration with participation of young volunteers



Good Practice Guide

 <http://www.1-life.info/guide/english/index.htm>

Continued Reporting

Due to editorial policy or space limitations, some features included in the Environmental & Social Report 2003 could not be included in this year's report. In the interest of continued reporting, major developments in these areas are reported below.

	Area	Details	Page no. in 2003 report	Current status
Environmental Aspects	Procurement Production Logistics	Audits at waste collection and removal companies	28	Continued to carry out audits in FY2003.
	Recycling and Sales/After Sales	Recycling of process remnant materials through initiatives taken in the production stage	37	In FY2003, 275 tons of weather stripping rubber, 353 tons of remnant cloth from airbags, and 25 tons of triple-layer surface remnant material for instrument panels were recycled.
		Information support for dealers	42	Focus on disseminating information related to the Recycling Law.
	Consolidated Environmental Management	Holding of Toyota Global EMS Liaison	55	The next EMS Liaison, held every other year, is scheduled for the spring of 2005.
Social Aspects	Relations with Employees	Safety and Health Utilization of the Meal Check System to prevent lifestyle-related diseases	79	<p>The Meal Check System, which was implemented throughout the entire company in October 2003, is currently available to approximately 35,000 employees. Between 350 and 400 employees a day are using this system in order to improve their eating habits. Accumulated data is also analyzed for trends, which are then being utilized in health seminars, etc. to increase awareness.</p> <p>*Meal Check System: A system for confirming and evaluating individuals' food consumption patterns, using accumulated data on their cafeteria food and drink choices</p>

CO₂ Conversion Coefficients to Calculate CO₂ Emissions Volume

(1) Toyota's Automobile Production Process

Electricity	0.3817 kg-CO ₂ /kWh	Butane gas	3.0094 kg-CO ₂ /kg
A-type heavy oil	2.7000 kg-CO ₂ /l	City gas	2.3576 kg-CO ₂ /m ³
C-type heavy oil	2.9419 kg-CO ₂ /l	Coke	3.2502 kg-CO ₂ /kg
Kerosene	2.5308 kg-CO ₂ /l	Coal	2.3536 kg-CO ₂ /kg

CO₂ conversion coefficient source:
Japan Automobile Manufacturers Association, Inc.

(2) Logistics

Truck (standard commercial truck)	177.3 g-CO ₂ /ton-kilometer
Railway (Japan Railways Cargo)	21.7 g-CO ₂ /ton-kilometer
Ship (coastal service)	35.6 g-CO ₂ /ton-kilometer

CO₂ conversion coefficient source:
The Environment, Traffic and Transport, Institution For Transport Policy Studies

Websites

Company outline:

http://www.toyota.co.jp/en/about_toyota/index.html

Investor relations:

<http://www.toyota.co.jp/en/ir/index.html>

Press releases:

<http://www.toyota.co.jp/en/news/index.html>

Environment initiatives:

<http://www.toyota.co.jp/en/environment/index.html>

Technologies:

<http://www.toyota.co.jp/en/tech/index.html>

Safety technologies:

<http://www.toyota.co.jp/en/tech/safety/index.html>

Philanthropy:

http://www.toyota.co.jp/en/community_care/index.html

Economic Performance

In order to achieve "compatibility between the environment and the economy," "fulfill responsibility towards society," and gain the trust of all stakeholders, including shareholders, local communities, customers, suppliers and employees, long-term

stable growth is an indispensable factor. Representative economic performance indicators for Toyota are shown below. For further details, please visit the website below.



<http://www.toyota.co.jp/en/ir/index.html>

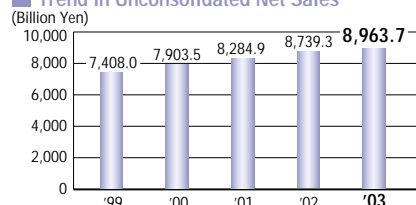
Sales Status (April 2003 - March 2004)

(rounded to the nearest 100 million yen)

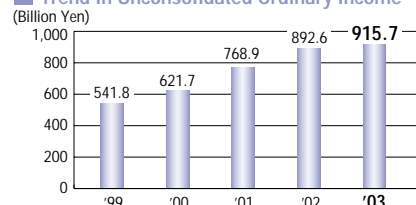
	Unconsolidated Base	Financially Consolidated Base
Net sales	8,963.7 billion yen	17,294.7 billion yen
Operating income	833.7 billion yen	1,666.8 billion yen
Ordinary income	915.7 billion yen	1,765.7 billion yen*
Net income	581.4 billion yen	1,162.0 billion yen
Total assets	8,817.1 billion yen	22,040.2 billion yen
Shareholders' equity	5,984.6 billion yen	8,178.5 billion yen
Return on equity (ROE)	9.9%	15.2%
Net income per share	171.08 yen	342.90 yen
Net equity per share	1,796.75 yen	2,456.08 yen
Capital investment	266.4 billion yen	957.7 billion yen
R&D expenses	591.2 billion yen	682.2 billion yen
Number of vehicles produced	3,558,239 vehicles	6,513,791 vehicles
Number of vehicles sold	3,625,006 vehicles	6,719,363 vehicles
Number of employees	65,346	264,410

*Income before income taxes

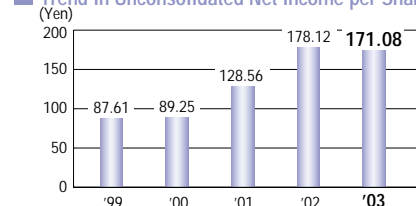
Trend in Unconsolidated Net Sales



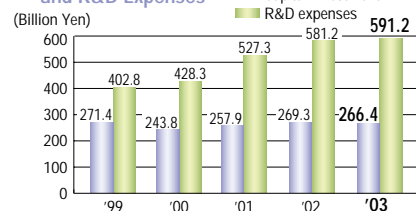
Trend in Unconsolidated Ordinary Income



Trend in Unconsolidated Net Income per Share



Trend in Unconsolidated Capital Investment and R&D Expenses



Company Outline

Name	TOYOTA MOTOR CORPORATION
Date of establishment	August 28, 1937
Principal operations	Manufacturing and sales of automobiles and housing
Capital	397.0 billion yen

Number of shareholders	339,549
Total number of shares issued	3,609,997,000
Stock exchanges on which the shares are listed	Japan: Tokyo, Nagoya, Osaka, Fukuoka and Sapporo Stock Exchanges Overseas: New York and London Stock Exchanges

*Capital and number of shareholders are as of the end of March 2004.
Capital is rounded to the nearest 100 million yen.

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112-8701, Japan
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Major production bases in Japan

Automobile:

Honsha Plant, Motomachi Plant, Kamigo Plant, Takaoka Plant, Miyoshi Plant, Tsutsumi Plant, Miyochi Plant, Shimoyama Plant, Kinuura Plant, Tahara Plant, Teiho Plant, Hirose Plant

Housing:

Kasugai Housing Works, Tochigi Housing Works, Yamanashi Housing Works



For an overview of the above plants and housing works and details on their environmental activities, please visit the website below.

<http://www.toyota.co.jp/en/envrep04/plantdata/>

Other major operations bases

Nagoya Office

23-22, Izumi 1-chome, Higashi-ku, Nagoya, Aichi Prefecture
TEL: 81-52-952-2111

Osaka Office

3-11 Minami-Semba 4-chome, Chuo-ku, Osaka City, Osaka
TEL: 81-6-6251-3300

Higashi-Fuji Technical Center

1200 Mishuku, Susono City, Shizuoka Prefecture
TEL: 81-55-997-2121

Independent Report on Environmental & Social Report 2004

Independent Report

Toyota believes a third-party review is very important to improve accuracy and objectivity of the Environmental & Social Report 2004.

To achieve this, information contained in the Environmental & Social Report 2004 has undergone a third-party review conducted

by Tohatsu Environmental Research Institute Ltd, a member firm of Deloitte Touche Tohmatsu, following the process diagrammed on the next page.



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Independent Report

To the Board of Directors of Toyota Motor Corporation

Our Objective

We have reviewed certain aspects of the Environmental & Social Report 2004 (the "Report") of Toyota Motor Corporation (the "Company") in accordance with the procedures discussed and agreed with the Company's management, referring to Management Research Committee Study Report Issue 13 "Guidelines for Environmental Report Assurance Engagements (Interim Report)" published by the Japanese Institute of Certified Public Accountants. The report is the responsibility of the Company's management.

Our objective is to express an opinion regarding primarily the accuracy of material information contained in the Report, based on our independent review and to the extent of the procedures performed.

Our procedures

We performed the following procedures with respect to the Report:

- (1) Concerning the information contained in the Report, consideration of the reasonableness and accuracy of collection and methods for compiling the information, by means of comparison of compiled data with source information, and by means of discussions with, and inquiries to the Company's persons collecting and/or compiling the information, and
 - (2) Concerning the information contained in the Report, discussions with, and inquiries to the Company's persons preparing the information and their supervisors, reading of the relevant minutes of the meetings of the Company as well as the Company's regulations, comparison of related documents regarding ISO, site visits, and check and/or comparison of the information contained in the Report with other available internal and external materials
- Concerning the information of the companies subject to Company's consolidated environmental management in "Global Environmental Data" under the heading of "Consolidated Environmental Management," reading and comparison of related records submitted by the said companies and inquiries to the Company's persons responsible for the preparation of the information.

Our conclusions

Based on our review, our conclusions are as follows:

- (1) The information contained in the Report and subject to our review is properly compiled from the data prepared by the Company and the companies subject to its consolidated environmental management in relation to their daily operations,
- (2) The information contained in the Report and subject to our review is consistent with the supporting data obtained during our review.

Tohatsu Environmental Research Institute Ltd.
July 8, 2004

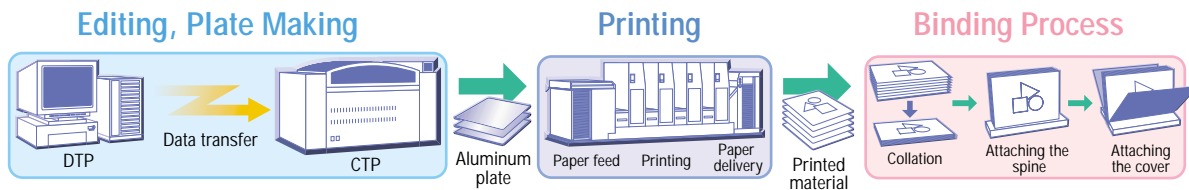
Member of
Deloitte Touche Tohmatsu

Supplementary Explanation on the Procedure for Preparation of the Independent Report

An overview of the procedure for the third-party review is provided below as supplementary information.



The following environmental considerations have been made for the printing of this report.



▶ Editing, Plate Making

For the editing and plate making, photo-composition, block copy, and typesetting are computerized (DTP: Desk Top Publishing). CTP (Computer to Plate) is employed to directly transfer information onto the aluminum plate (plate for use in printing). This means that the photographic printing paper and paper previously used for the block copy, and the film used for printing as well as the developing solutions and fixing solutions, are not needed.

▶ Printing

A waterless process is employed for printing. Dampening water containing isopropyl alcohol is not used. Also, environmentally-considerate recycled paper is used. For the ink, petroleum based solvents have been replaced with soybean oil based solvents, and a VOC-FREE, water-less ink for printing has been developed.

▶ Binding Process

In the binding process of the printed sheets, a polyurethane-type adhesive is used that is easy to separate and remove for paper recycling. Also, the blank sheets generated from sheet cutting during processing are sent to a paper manufacturing company where they are used as recycled paper.

All the printing is done at an ISO 14001 certified printing company.



[Editing, Plate making]

This report is compiled using the Computer to Plate (CTP) system, resulting in the total elimination of polyester acetate film during the plate making process. This also means that alkaline developing solutions and acid fixing solutions are not required during the developing stage.

[Printing]

For the printing, no alkaline developing solutions or acid fixing solutions are used during the plate development and damping water containing elements such as isopropyl alcohol is not used in ink transfer; instead, a waterless process is employed.

Paper: The report's cover is made from 100% post-consumer recycled paper, and the paper used in the report consists of 10% pulp from thinned wood, which contributes to the health of forests (by improving sunlight and air circulation), and 90% post-consumer recycled paper. The paper has a whiteness level of 70%, and no chlorine is used for bleaching and no surface processing or special coating is applied.

Ink: VOC (volatile organic compounds) free ink is used, in which petroleum-based solvents (approx. 1.48g per booklet) are replaced by vegetable oil based solvents, principally soybean oil. Furthermore, the ink contains no lead, mercury, cadmium, hexavalent chromium, or other heavy metals.

[Processing]

The adhesive for the binding is a polyurethane-type adhesive that is easy to separate and remove for paper recycling. Also, the 753kg of blank sheets generated from sheet cutting during processing is sent to a paper manufacturing company, and this is used as raw material for recycled paper.

This report utilizes materials (paper, ink, plate and adhesives) that were produced by ISO 14001 certified companies and plants. The editing and printing was also done by an ISO 14001 certified company.



Published by: TOYOTA MOTOR CORPORATION
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Published: August 2004
(based on Japanese version issued in July 2004)
Next scheduled report: Autumn 2005

You can download this report in PDF format at the Toyota website.

<http://www.toyota.co.jp/en/envrep04>