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The Dow Jones Sustainability World Index comprises more than 300 companies around the world that represent the top 10% of leading companies committed to sustainability.



The Morningstar Socially Responsible Investment Index (MS-SRI), tracks the share performance of 150 selected Japanese companies based on their commitment to CSR. It is the first such index in Japan.

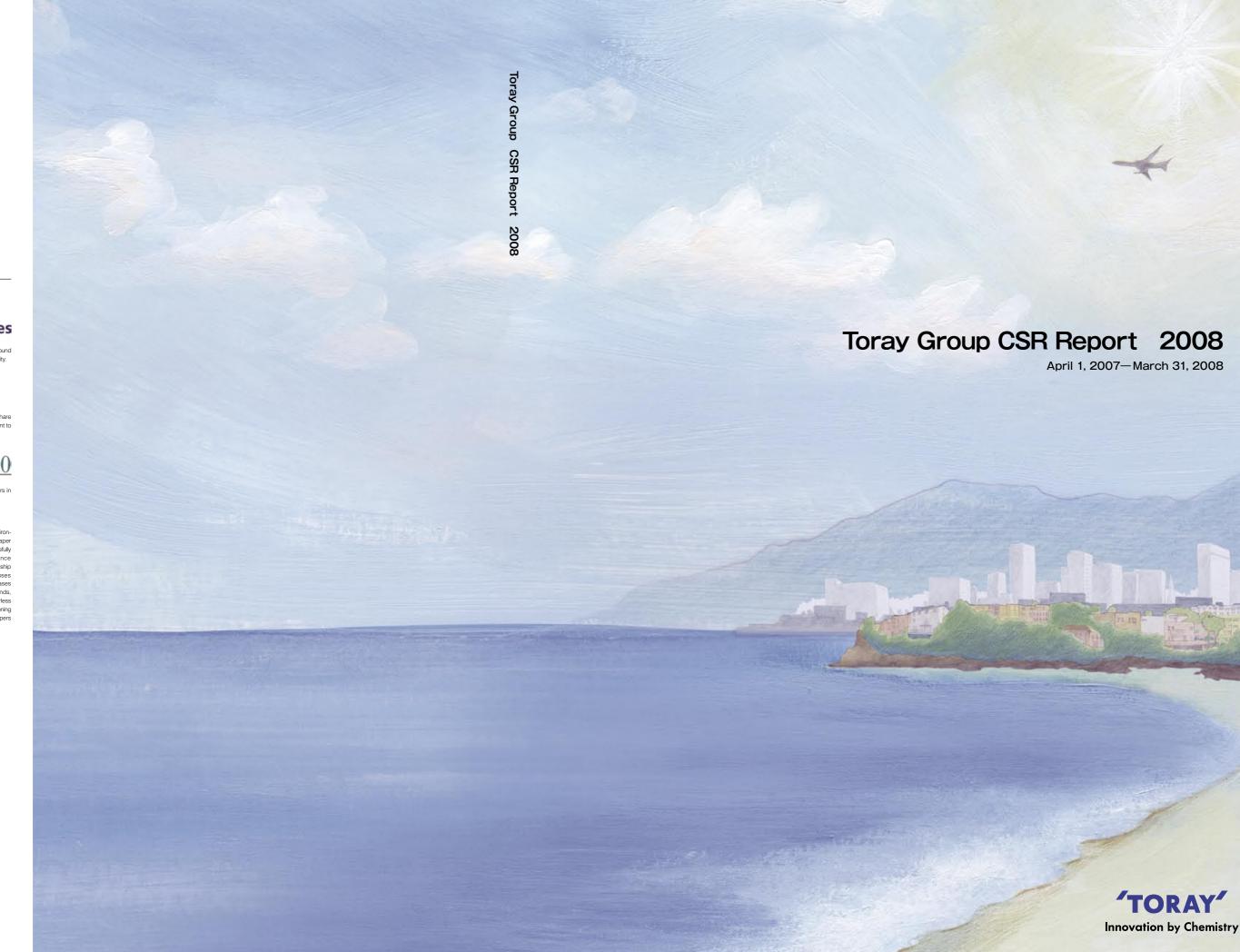


The KLD Global Climate 100SM Index is made up of companies that are leaders in providing solutions to global warming and offsetting its long-term effects.





ment, this report is printed on paper made from wood taken from carefully managed forests, in accordance with the FSC's (Forest Stewardship Council) regulations. It also uses plant-based soy ink which releases fewer volatile organic compounds, and is printed using Toray Waterless Plate\* which do not require dampening water containing alkaline developers or isopropyl alcohol.



## **Management Philosophy**

#### Corporate Philosophy

Contributing to society through the creation of new value with innovative ideas, technologies and products

#### Corporate Missions

To provide new value to our customers through high-quality products For our customers and superior services

To provide our employees with opportunities for self development For our employees in a challenging environment

To provide our shareholders with dependable For our shareholders and trustworthy management

> To establish ties and develop mutual trust as a responsible corporate citizen

#### **Corporate Guiding Principles**

**Safety and Environment** 

**Ethics and Fairness** 

**Customer-focus** 

Innovation

Fieldwork and Initiative

**Global Competitiveness** 

**Global Coalition** 

For society

Placing top priority on safety, accident prevention and environmental preservation, ensuring the safety and health of our employees, our customers and local communities, and actively promoting environmental preservation

Obtaining the trust of society and meeting the expectations by acting fairly while maintaining high ethical standards and a strong sense of responsibility and maintaining transparency in management

Providing customers with new values and solutions, and achieving sustainable growth together

Achieving continuous innovation in all corporate activities, and aiming for dynamic evolution and growth

Strengthening fieldwork abilities and initiative, the foundations of our corporate activities, through consistently learning from one another and constant self-driven efforts

Pursuing competitiveness through global top quality standards and cost management, and achieving growth and expansion in the global marketplace

Developing global coalition through integrated internal linkages and strategic alliances with external parties

Providing an environment where employees find value in their work, and build-**Emphasis on Human Resources** ing positive, energetic relationships between people and the organization

#### **Editorial Policy**

In this report, Toray Group outlines its CSR achievements and gives some examples of its CSR activities during FY 2007. The information is set out in a clear, easy-to-understand way in order that all stakeholders can appreciate the company's CSR activities.

#### Report coverage

#### **Environmental content:**

Toray, and the 53 manufacturing subsidiaries and affiliates below (total 54 companies), promote Safety, Health, Accident Prevention and Environmental Audits. (Note, safety content is from Toray as well as from 55 Japanese subsidiaries and affiliates and 55 overseas subsidiaries and affiliates, including those below and nonmanufacturing companies.

#### Japanese Subsidiaries and Affiliates 24 Companies

Du Pont-Toray Co., Ltd. Toray PEF Products Inc. Opelontex Co., Ltd. Toray Advanced Film Co., Ltd. Ogaki Fuso Spinning Co., Ltd. Dow Corning Toray Co., Ltd. Toray Textiles, Inc. Toray Fine Chemicals Co., Ltd. Toray Coatex Co., Ltd. Soda Aromatic Co. Ltd. Towa Orimono Co., Ltd. Toray ACE Co., Ltd. Toray Engineering Co., Ltd. Toray Monofilament Co., Ltd. Tovo Tire Cord Co., Ltd. Toray Precision Co., Ltd. Toyo Flocking Co., Ltd. Suido Kiko Kaisha, Ltd. Toray Medical Co., Ltd. Maruichi Fiber Co., Ltd. Sowa Textile Co., Ltd. Toray Research Center, Inc. Toyo Plastic Seiko Co., Ltd. Toyo Jitsugyo Co., Ltd.

#### Overseas Subsidiaries and Affiliates 29 Companies

Toray Plastics (America), Inc.

Toray Resin Co. Toray Carbon Fibers America, Inc.

Toray Composites (America), Inc.

Toray Fluorofibers (America), Inc.

Toray Textiles Europe Ltd. Alcantara S.p.A

Toray Textiles Central Europe s.r.o.

Toray Plastics Europe S.A.S. Société des Fibres de Carbone S.A

P.T. Acryl Textile Mills

P.T. Century Textile Industry Tbk

P.T. Easterntex

PT Indonesia Synthetic Textile Mills P.T. Indonesia Toray Synthetics

Luckytex (Thailand) Public Company Limited

Thai Toray Textile Mills Public Company Limited

Thai Toray Synthetics Co., Ltd.

Penfabric Sdn. Berhad

Penfibre Sdn. Berhad

Toray Plastics (Malaysia) Sdn. Berhad

Toray Fibers (Nantong) Co., Ltd.

Toray Sakai Weaving & Dyeing (Nantong) Co., Ltd. Toray Fibers & Textiles Research Laboratories (China) Co., Ltd.

TALTEX (Zhuhai) Ltd.

Toray Plastics (Shenzhen) Ltd.

Toray Film Products (Zhongshan) Ltd.

Toray Sanko Precision (Zhongshan) Ltd.

Toray Saehan Inc

#### Social content:

Primarily Toray, with coverage of subsidiaries and affiliates according to the status of their initiatives in various areas

#### Economic content:

Toray and 238 consolidated companies (a total of 239

#### **Target period**

FY 2007 (April 1, 2007, to March 31, 2008) This report also includes more recent information up to June 2008.

This report complies with the Japan Responsible Care Council's Responsible Care Code.



In this document, the terms with an asterisk (\*) indicate Toray Group's registered trademarks or trademarks pending

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#### Introduction

Toray Industries, Inc. was founded in 1926, starting business as a manufacturer of the man-made fiber viscose rayon. The company has always shown an enterprising spirit. It harnessed this spirit to build on its core technologies in polymer chemistry, synthetic organic chemistry, biotechnology and nanotechnology, consistently taking up the challenge to develop new products and new technologies. A range of new business areas opened up from this development. In addition to increasing the sophistication of Toray's core technologies—with fibers and textiles, resins, films and chemical products—the company's enterprising spirit also provided the thrust behind its diversification into such areas as carbon fiber composite materials, IT-related products, pharmaceutical and medical products, and the water treatment business. Toray has also devoted considerable effort into attaining its goals of developing first-class production technologies and quality management systems, and the company

received the Deming Prize in 1954. Toray will continue to focus on the sustainable development of both its business and society, and strive to retain its high standing as a manufacturer of basic materials that offers high-quality products and services.

#### The Way Forward

Aiming for both sustainable development and to make a new leap into the future, Toray Group established a new long-term corporate vision "AP-Innovation TORAY 21" in April 2006. Looking towards the realization of this vision, the Group adopted the corporate slogan "Innovation by Chemistry," based on Toray's Corporate Philosophy of "Contributing to society through the creation of new value with innovative ideas, technologies and products." Through this approach, Toray Group aims to become one of the world's leading manufacturers of advanced materials, and it is dedicated to pursuing "Innovation" and innovative management, in all its corporate activities.

# The Business Environment and Toray Group's Response

In recent years, the social and economic environment has been changing very rapidly. These unprecedented and massive changes have led to more and more issues that humanity must respond to on a global scale: increasingly serious environmental issues, high oil prices and thus expensive other products; economic globalization, and limited resources and food supplies.

I believe that it is Toray Group's mission to see these changes in the global environment as both challenges and opportunities, and to respond promptly: taking the chance to leap forward and maintain growth. To do this, it is important to reinforce the Group's management foundations, and at the same time to consistently create new value through continuous innovation.

Chemical technology is making substantial contributions to the resolution of a variety of issues. Among these, the steep increase in the price of oil and the degradation of the global environment can provide the impetus for both a spurt in Toray Group's growth and the stimulation for the Group to play an active role in the ongoing development of society as a whole. I believe that this will allow Toray Group to retain its place as a high-value corporate group for all our stakeholders.

#### **Promotion of CSR Initiatives**

In light of issues such as these, Toray Group is aggressively implementing various CSR initiatives. The Group has always recognized safety, accident prevention and environmental conservation as priority management issues. Now, management is driven by an assessment of the impact of all the Group's activities on the global environment. Toray Group has been promoting its Ecodream\* Project, to expand the use of more environmentally friendly products and service business activities, as well as to increase recycling. In 2008, the Group began the Project EcoChallenge to further develop new environmental technologies, to improve the environmental friendliness of composite materials, and to reduce emissions of greenhouse gases (GHGs). Into the future, Toray will make even greater use of leading-edge technologies, accelerating its efforts as a diversified chemicals group to tackle environmental issues.

To emphasize safety, accident prevention, and environmental

preservation, all Group companies are working together towards achieving Zero Accident not only in plants, but in head office and at other business sites. The entire Group is also fully complying with the EU's Registration, Evaluation, Authorisation and Restriction of Chemical substances (REACH) Regulations.

Recent incidents concerning companies' falsely labeled products have caused Japanese customers some anxiety. In relation to efforts to ensure product safety and quality, Toray Group believes that product safety and quality assurance are a manufacturer's fundamental responsibility. The Group has been enhancing systems aimed at ensuring safety and consumer confidence, and improving product quality, as well as taking firm measures to further strengthen systems ensuring strict compliance with corporate ethics, company rules and regulations.

In implementing internal control systems, Toray will ensure even closer understanding of the need for observance of the law. For example, the company has responded to Japan's Corporate Law by implementing an enterprise risk management system and security trade administration. From the current fiscal year, Toray will respond to legal requirements of Japan's Financial Instruments and Exchange Act, setting up internal systems for Statutory Disclosure of Quarterly Financial Statements and Publication of Internal Control Reports.

The implementation of CSR should be an ongoing concern for any company. This CSR Report presents a summary of the results of Toray Group's CSR activities in FY 2007. I am confident that from this report the reader will be able to gain a good understanding of how active Toray is in its approach to and promotion of its CSR activities.

I look forward to your kind understanding and continued support for Toray Group's corporate activities into the future.

September 2008

President, CEO and COO, Representative Director Toray Industries, Inc.

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# **Toray Group Business Activities**

#### **Toray Group Current Status and Business Strategies**

Toray Group is engaged in a wide range of business activities. In its operations, the Group develops and cultivates markets by exploiting its core technologies: organic synthetic chemistry, polymer chemistry, biotechnology and nanotechnology; and it promotes the advanced materials developed by combining these technologies. Toray Group aspires to become a world leader in advanced materials, and is moving forward with the mid-term business strategies defined in the "Project Innovation TORAY 2010 (IT-2010)" to attain this goal, Global business development is a feature that distinguishes Toray Group.

While Toray Group's Foundation Businesses of Fibers & Textiles and Plastics & Chemicals continue to generate steady income, the Group has broadened its focus on what are termed Strategically Expanding Businesses, including IT-related Products and Carbon Fiber Composite Materials to improve earnings and profit. At the same time, the company is nurturing Strategically Developing Businesses such as Life Science, Water Treatment and Environmentally Friendly Products, which will form the cornerstone of the next generation of improved earnings, and of the company's sustainable development.

#### **Toray Group's Global Operations**

Toray Group is expanding its global operations. These now comprise operating bases in 21 countries and regions, including Japan. The Group has been manufacturing overseas in the Foundation Businesses for many years. This forms a basis to ensure stable earnings in global operations which leverage a worldwide network of manufacturing and sales facilities, with Asia as its hub.

The Group is also actively developing Strategically Expanding Businesses that focus on advanced materials, including IT-related Products in Japan and Korea. At the same time, the Group is expanding facilities for the Carbon Fiber Composite Materials business segment at the Ehime Plant, and constructing a new plant for the production of the intermediate material prepreg at the Ishikawa Plant. Toray Group is expanding its production capabilities in the carbon fiber composites business at 5 plants in the 3 key regions of Japan, Europe and the U.S., working closely with growing markets as it develops and expands operations globally. In addition, Toray Group is proceeding with development of operations all over the world for water treatment, a Strategically Developing Business. It is working toward solutions to issues related to water resources through operations principally in the 3 key regions of Japan, Europe and the U.S.

#### Main Countries and Regions with **Toray Group Subsidiaries and Affiliates**



#### Mid-term Business Strategies IT-2010

In FY 2007, Toray Group, aiming to make a significant leap, pressed on with its IT-2010 mid-term business strategies, which were formulated in October 2006. Under IT-2010 the Group set development of the "Five Innovations"—business structure, technologies, competitiveness, business-awareness and CSR—as key challenges, while the implementation of the "Eight Projects" dramatically shifted the management's priority to innovation. The basic IT-2010 strategies are described in the box below. The results of the efforts addressing "Expansion of advanced material business in four major growing fields" in FY 2007 are as follows:

- 1. In the field of information, telecommunications and electronics the Group boosted plant capacity for photosensitive polyimide coating material for semiconductors at Japanese facilities and optical film used in flat panels displays in Korea.
- 2. In the field of automobiles and aircraft, the Group decided to establish the Automotive & Aircraft Center, a dedicated combined-development facility for automobile and aircraft-related technologies at the Nagoya

Plant, and embarked on the construction of the Automotive Center, which opened in October 2008.

3. In the field of Life Science, Toray began to sell Careload\* LA, a drug for the treatment of pulmonary arterial hypertension. In the bio-tool business, Toray is



External view of Automotive Cente

developing a new set of DNA chips for use in environmental analysis. 4. In the fields of the Environment/Water-related/Energy, Toray Group is increasing the production capacity for reverse osmosis (RO) membranes and elements for water treatment in both the U.S. and Japan and is boosting its global sales framework.

According to the "Innovation of business awareness" initiatives, Toray Group is promoting a Corporate Brand Strengthening Project. This involved new advertisements on television and in newspapers. The Group succeeded in enhancing a corporate image of an innovative company at the cutting edge of the development of advanced materials in line with the company's long-term corporate vision, "AP-Innovation TORAY 21." Toray Group also made badges and published a brand handbook bearing the corporate slogan "Innovation by Chemistry" for its employees.

Toray Group is innovating throughout its fields of business activity, putting into action the Group principle of "Contributing to society

through the creation of new value with innovative ideas, technologies and products."



Nanotech TV commercial

#### **Overview of Toray Industries, Inc.** (As of March 31, 2008)

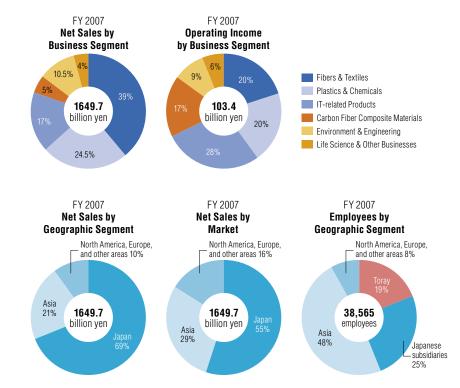
Established	January 1926
Paid-in capital	¥96,937,230,771
Number of employees	38,565 (consolidated)

#### **Number of Consolidated Companies** (as of March 31, 2008)

	Japan	Overseas	Total
Consolidated subsidiaries	66	78	144
Equity method subsidiaries	34	21	55
Equity method affiliates	12	27	39
Total	112	126	238

#### Consolidated Rusiness Results

(FY 2007)	(Million yen)
Net sales	1,649,670
Operating income	103,429
Ordinary income	91,471
Net income	48,069



#### "IT-2010" Basic Strategies

#### 1. Transformation to a highly profitable business group

#### (1) Transforming to a highly profitable business group

 Transform to a highly profitable usiness group while continuing business expansion

#### (2) Expanding Strategically Expanding Businesses (profit growth driver)

Increase profits by expanding Strategically Expanding Businesses while ensuring stable profit by Foundation Businesses

#### (3) Expanding Strategically Developing Businesses (next profit growth driver)

#### (4) Advancing business structure reform

Advance business structure reform by expanding Strategically Expanding Businesses and Strategically Developing Businesses

#### (5) Expanding advanced materials

Expand advanced material businesses in every segment and increase their net sales

#### 2. Expansion of advanced material business in four major growing fields

#### (1) Information / Telecommunications / Electronics

 Business expansion in the digital network-related product markets including flat panel display televisions, cellular phones and personal computers

#### (2) Automobiles / Aircraft

- Development of products to meet expanding markets in hybrid cars and car electronics
- Expansion of application parts by widening advanced functional availability of carbon fiber composite materials

#### (3) Life Science

Creation of innovative bio-tools through bio/nano-technological integration

#### (4) Environment / Water-related / Energy

- Development of new applications for fibers and textiles, plastic resins and films using non-petrochemical raw materials
- Global expansion of water treatment businesses with a core of high-performance separation membranes
- Development of new materials for next-generation energy systems, including solar cells, fuel cells, and wind power generation

#### **Five Innovations and Eight Projects**

Five Innovations	Eight Projects	Key Issues
	(1) Business Structure Innovation Project	Transformation to a highly profitable group by innovative business portfolio change
business structure	(2) Overseas Business Strengthening Project	Enhancement of overseas business profitability and expansion of business
	Advanced (3) Material Businesses Expansion Project	Rapid commercialization of new advanced materials
	(4) R&D Capabilities Innovation Project	Continuous generation of large-scale R&D themes
	Manufacturing (5) Technology Innovation Project	Generation of world-leading quality at lowest cost
	(6) Cost Innovation Project	Cost reduction for intensified profitability
	(7) Marketing and Sales Innovation Project	Thorough implementation of customer-oriented, proactive marketing and sales
Innovation of business-awareness	(8) Corporate Brand Strengthening Project	Increase the value of the corporate brand
5 CSR Innovation		ies, strengthening security trade g and using internal control systems

# **Environmentally Friendly Products and Technologies**

Toray Group pursues environmental design practices in an effort to contribute to environmental preservation by reducing the environmental impact of its products.

Toray Group's advanced materials and technologies are used in many everyday situations, affecting the lives of everyone. As technology is continually advancing, and products are evolving,

it is vital to focus on the impact on people and the environment, and not allow these to become overlooked.

In considering the future, Toray works toward the preservation and improvement of the environment, as well as technological innovation.

#### [1] Water treatment membranes



Helping to use water resources effectively by desalination of seawater and recycling of waste water (Photograph: water treatment facility at Kinuta Water Purification Plant, Tokyo).

#### [2] Parts to reduce the weight of cars



Automobile parts using engineering plastics instead of metal.

#### [3] Plant-based materials for clothing



SOTAKE\* made from renewable and non-petrochemical raw materials.

#### [4] Biodegradable fishing line



The world's first biodegradable fishing line Fieldmate\*.

#### [8] Environmentally friendly cellular phone parts



Cellular phones made using Toptical\*, a color filter for liquid crystal displays that eliminates use of environmentally harmful heavy metals.

#### [9] Computers using plant-based resin



Plant-based resin Ecodear\* is used in computer cases.

#### [10] Non-halogen fire-retardant plastic resin components

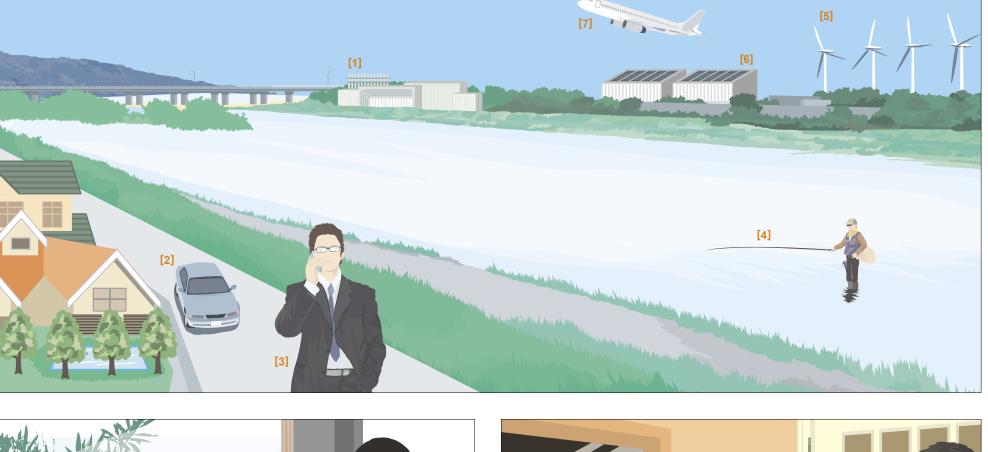


Electric and electronic connectors using engineering plastic, highly heat resistant and halogen-free.

#### [11] Printing materials which do not generate liquid waste



Toray Waterless Plate\* improves printing efficiency and helps to conserve the environment as it does not generate liquid waste during the printing process.





#### [5] Materials for power-generating windmills



Blades on power-generating windmills made using Torayca\* carbon fiber.

#### [6] Film for solar power



A billboard with solar cells using Lumirror\* polyester film (Photograph shows the Mishima Plant).

#### [7] Aircraft materials for lighter aircraft bodies



New generation aircraft, Boeing 787 constructed with materials using Torayca\* carbon fiber.

#### [12] Plant-based packaging materials



Containers and packing film using plant-based plastic and film made using Ecodear\*.

#### [13] Household water purifier



Torayvino\*, the household water purifier that eliminates chlorine residue, and general bacteria.

#### [14] Cellulose sponge



Environmentally friendly cellulose sponge made with nonpetroleum natural pulp.

#### [15] Material for thermal clothing



Innerwear made using 'HEAT TECH'\* material with a high heat retention.

\*'HEATTECH' is a registered trademark of FAST RETAILING CO., LTD.

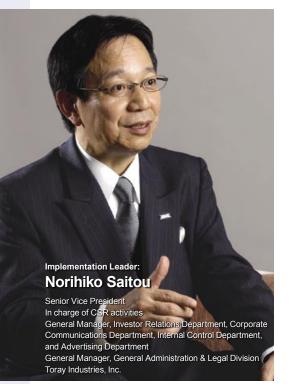
#### [16] Plant-based wadding



Blankets made with Ecodear\* fiber filling.

# Toray Group's Corporate Social Responsibility

# As the director responsible for Toray Group's CSR, I undertake to ensure that the Group is positioned as a world leader in implementing CSR by 2010.



Toray has always given priority to tackling a wide variety of management issues in the areas of safety, accident prevention, and environmental preservation, as well as to upholding corporate ethics and complying with laws and regulations. In recent years, however, demands made by society, affecting corporate responsibility have been on the increase, and Toray Group believes that is important that it should further deepen its awareness of CSR-related issues and contribute to the betterment of the global environment through an expansion of its advanced materials business. At the same time, Toray Group should more actively engage in efforts to address a range of social issues.

A unique strength of Toray Group's approach to CSR lies in its 2 sets of systematic activities: "CSR guideline activities" and "CSR line activities." CSR guideline activities take place within the comprehensive set of 10 CSR Guidelines that the entire Group should address: action programs are implemented and followed up. Along with this, the company implements CSR line activities that are undertaken by every department in all Group companies, based on the CSR Guidelines, and all employees take part. I believe that these 2 systematic activities generate synergistic effects that help the Group fulfill its corporate social responsibility.

Under the mid-term business strategies "Project Innovation TORAY 2010 (IT-2010)" that were launched in October 2006, "Five Innovations" were adopted. One of these is "CSR Innovation," and, toward this goal, Toray Group is developing the abovementioned "CSR line activities." The Group is also implementing line activities designed to ensure absolute adherence to the requirements of security trade administration, the implementation of internal control, etc. The directors and employees of Toray Group are united in their firm resolve and determination to build on the results of their daily efforts, and not to waver in taking up the challenge of CSR Innovation into the future.

#### **Toray Group's Corporate Philosophy and CSR**

Since its founding, Toray Group has focused on the goal of "contributing to society through the creation of new value with innovative ideas, technologies and products," as stated in its Corporate Philosophy.

"Corporate Missions" clearly states the relationship with the Group's stakeholders; "Corporate Guiding Principles" lists the objectives that should guide the actions of every employee, and "Corporate Ethics and Legal Compliance Code of Conduct" sets out concrete examples for these actions.

For Toray, the implementation of CSR activities is nothing other than putting its Management Philosophy into practice.

To ensure that CSR activities based on this way of thinking are adopted by all Toray Group companies and employees, a CSR Committee was established in November 2003 and the First Road Map was drawn up as a 3 year plan. The CSR Guidelines and Action Program were formulated in 2004.

The CSR Guidelines include environmental initiatives that were already being undertaken by Toray Group, based on the Ten Basic Environmental Rules, and key issues concerning social responsibility were added. This formulates a unique set of CSR guidelines.

## ■ A Conceptual Diagram of Toray's Management Philosophy and Code of Conduct



The complete text of Toray Group's Management Philosophy can be found on page 2. See page 11 for the complete text of the Corporate Ethics and Legal Compliance Code of Conduct, the Ten Basic Environmental Rules and the CSR Guidelines.

#### Corporate Ethics and Legal Compliance Code of Conduct

#### 1. Contribute to society

Adopted October 2003

As a company aspiring to be a New Value Creator, provide trustworthy products and services that satisfy our customers.

#### 2. Communicate with society

Communicate with the various parties associated with the company, including its customers and shareholders as well as members of the local community. Actively and fairly disclose pertinent information about the company.

#### 3. Behave as a good corporate citizen

Comply with laws and regulations, respect human rights, and actively contribute to society as a good corporate citizen.

#### 4. Play an active role in preserving the global environment

Recognize that playing an active role in preserving the global environment is an important management issue, and strive to coexist with the environment in all corporate activities by conserving energy, reducing emissions and waste, promoting recycling, and so forth.

#### 5. Prioritize fairness and trust in corporate activities

Engage in proper trade based on free, fair, and transparent market competition, and conduct corporate activities that earn the deep trust of society.

#### 6. Comply with national laws and regulations

Pursue management reform from a global perspective, comply with the respective national laws and regulations in overseas operations, and be self-disciplined with high ethical standards. Conduct corporate activities with respect to the culture and customs of each country and contribute to the advancement of local communities.

## 7. Raise motivation and create a corporate culture that lets employees demonstrate their ability

Strive to create a corporate environment that allows each and every employee to be motivated to demonstrate their ability, respect individual human rights, character, and personality, and maximize creativity and professionalism.

#### 8. Break off relations with antisocial forces

Always work for the good of society, break off relations with antisocial forces that threaten the order and safety of civil society, and take a resolute stand as a unified company.

#### **Ten Basic Environmental Rules**

(Adopted January 2000)

1. Environmental preservation is the top priority
We shall follow laws, regulations and agreements in all our business activities, and conduct manufacturing, handling, use, sale, transport and waste disposal while placing the highest priority on environmental protection.

#### 2. Prevention of global warming

We shall promote energy conservation, and work to reduce energy unit costs, and to control the amount of carbon dioxide discharged.

#### 3. Zero discharge of environmental pollutants

Our final target is to achieve zero discharge of hazardous chemical substances and wastes into the environment, and we shall continuously work toward reduction.

#### 4. Use of safer chemicals

We shall collect, consolidate and furnish information on the effects of handled chemicals on health and the environment, and shall work toward the use of safer chemicals.

#### 5. Promotion of recycling

We shall develop recycling technology for products, containers and packaging, and work with the society to promote recovery and remerchandising.

#### 6. Improvement of the level of environmental management

We shall improve environmental management technology and skills, conduct autonomous auditing, and work to maintain and improve the level of our environmental management.

#### 7. Contributing to society through

environmentally improved technologies and products
We shall meet the challenge of new technology development, and contribute to society through
environmentally improved technologies, and products with a lower environmental load.

# 8. Improvement of environment management in overseas business We shall place top priority on obeying local laws and regulations in overseas business activities, and shall conduct further management in accordance with the autonomous management standards of Toray Group.

# 9. Improvement of employee awareness of the environment We shall strive to improve employee awareness of environmental issues, through efforts like environmental education, social action and in-house PR activities.

#### 10. Sharing of environmental information with the society We shall deepen mutual understanding by widely publicizing our environmental protection efforts and their results. This PR shall be based on documents like environmental reports, and shall be directed at local communities, investors and the mass media.

#### Toray CSR Guidelines

(Adopted December 2004 and revised July 2007)

# Basic Policy & Enhance Corporate Governance and Management Transparency

Fulfill and realize the Corporate Philosophy, Corporate Missions, Corporate Guiding Principles, and CSR Guidelines to help create a sustainable society, while sincerely pursue CSR activities and strive to enhance corporate governance and management transparency.

# Uphold Corporate Ethics and Comply with Laws and Regulations

Earn the trust of society by all executives and employees upholding our Corporate Ethics and Legal Compliance Code of Conduct and acting with fairness, high ethical standards, and a sense of responsibility.

# Emphasize Safety, Accident Prevention, and Environmental Preservation

Give safety, accident prevention, and environmental preservation top priority above all other management issues, and work to ensure the safety and health of society and employees while protecting the environment in all of our business activities, from procuring raw materials to manufacturing, supplying, and disposing of products.

#### 4 Ensure Product Safety and Quality

Recognize the importance of product safety and quality assurance in supplying safe and highly reliable products, and strive to enhance management systems and disclose appropriate information.

#### **5** Perform Risk Management

Seek to reduce potential risk, develop a system capable of responding quickly to unexpected circumstances and disclosing accurate information, and work to inform all employees about this system.

#### **Promote Dialogue with Stakeholders**

Encourage dialogue and cooperation with employees, stockholders, investors, business partners, consumers, local communities, non-profit organizations, government and administrative agencies, mass media, analysts, and other parties.

#### Step up Environmental and Recycling Efforts

Pursue research and technological development related to environmentally friendly products and recycling, and contribute to improving the global environment by developing and expanding business in the areas of the "environment, water, and energy."

# Secure and Train Personnel and Promote Human Rights

Secure and train personnel and diversify employment while striving to protect employee jobs, respect human rights, and continuously improve workplace environments.

## 9 Cooperate with Suppliers in their Environmental and Social Initiatives

Cooperate with suppliers in promoting CSR activities, including environmental consideration, compliance with laws and regulations, and promotion of human rights.

#### Pursue Social Initiatives

Voluntarily conduct promotional programs for science and technology, arts and culture, social welfare, sports, and other activities by allocating an appropriate amount of resources as a good corporate citizen.

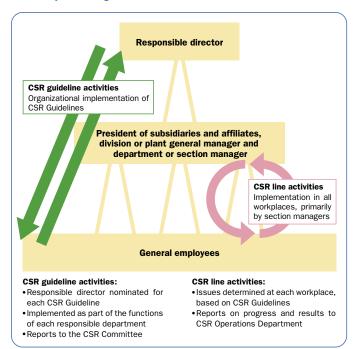
#### **Special Features of Toray Group's CSR Activities**

Toray Group implements 2 sets of CSR activities in parallel, both based on its unique CSR Guidelines. The 2 are "CSR guideline activities," which are implemented on an organizational basis and "CSR line activities," which are implemented by each division.

The CSR Guidelines categorize the important issues that Toray Group should address. For each guideline, a director has been nominated as the person responsible for implementation, and the responsible department draws up an action program and implements CSR guideline activities. The Companywide CSR Committee makes regular reports on the outcomes of all activities, and publishes this information externally, in CSR Reports, for example.

CSR line activities, on the other hand, are activities in which all employees participate. The activities are implemented by all departments at head office and at all subsidiaries and affiliates, in and outside Japan. At Toray, CSR line activities commenced in FY 2005, with section managers being nominated as implementation leaders, and at each workplace, the aim is to resolve issues from a CSR standpoint. Subsidiaries and affiliates in Japan and elsewhere began implementation in FY 2006, and this was extended to all overseas regions in FY 2007. Toray Group aims to promote these Group-wide activities, and ensure that they are well established.

#### **■** Conceptual Diagram of CSR Activities



# Progress on Implementation of the Second CSR Road Map

In June 2007, the position of overall supervisor for CSR and for a dedicated CSR Operations Department were newly established. Also in FY 2007, systems for the deployment of CSR across the entire Group were put in place, and CSR guideline activities were steadily implemented. The expanded implementation of CSR line activities in Japanese and overseas subsidiaries and affiliates proceeded according to plan, and progress is being made engendering interest in the CSR perspective in all Group companies. Chosen companies for CSR promotion overseas were designated in all regions in which Toray has a base (including the ASEAN region, the United States, Europe, China, etc.) and implementation commenced in those companies.

To further spread CSR awareness, Toray made progress in incorporating CSR issues into Group-wide training systems. As planned, responses to the requirements of Japan's Corporate Law and Financial Instruments and Exchange Act were further developed in the company's internal control systems.

Following due consideration, however, implementation of Group-wide self-assessment and self-audit targets corresponding to PDCA\* check items was not proceeded with. It had been envisaged that each Group company would conduct self-assessments with check lists, etc., but Toray Group decided that it would not be effective to introduce common self-assessment standards as the Group encompasses such a wide variety of business activities.

#### **Formulation of Third CSR Road Map**

Based on the direction taken following 2 to 3 years' debate of CSR issues, Toray decided to formulate a Third CSR Road Map. The Second CSR Road Map was brought to an end at the end of FY 2007.

One factor behind the decision to formulate the Third CSR Road Map was the intention to enhance Toray Group's CSR activities. When the Second CSR Road Map was being planned, as CSR guideline activities and CSR line activities moved from the planning to the implementation phase, a new Road Map was required.

Taking this situation into account, Toray formulated the Third CSR Road Map, by incorporating CSR guideline activities and CSR line activities into plans that can be promulgated even more effectively. In addition, the company aims to establish a system for enterprise risk management by 2010, for which development commenced in earnest in FY 2008.

To put "CSR Innovation" in practice—1 of the 5 goals of Toray Group's mid-term business strategies IT-2010—it is Toray's intention to further boost CSR activities in accordance with the goals stated in the Third Road Map.

\* The management cycle that follows the order of Plan, Do, Check and Act.

#### ■ CSR Road Map (Revised in FY 2008)

#### Second CSR Road Map (FY 2006-2008)

	Group-wide CSR issues		How well achieved in FY 2007	Current situation	
Establishment of CSR promotion system	1. Reorganization of committee system and establishment of CSR Operations Department			CSR Operations Department established in June 2007 as a dedicated organization within the General Administration & Legal Division	
Plan-Act	2. Review of CSR Guidelines and Action Programs			FY 2007 edition produced and put into effect	
	3-1. Deploy CSR Line Activities at	Japanese subsidiaries and affiliates			
	Japanese and overseas subsidiaries and affiliates	Overseas subsidiaries and affiliates	©	Deployment in all subsidiaries and affiliates completed	
Do	3-2. Implement dialogue with st	akeholders	Δ	Using CSR line activities, communication with regions strengthened	
	3-3. Establish CSR data manag	ement system	0	Integration with legal compliance database complete	
	3-4. Develop and implement me spreading and promoting C		0	CSR lecture in manager training commenced. Planning for e-learning program on-going.	
	4-1. Formulate CSR self-evaluat	ion standards	Δ	Third party evaluation under consideration	
Check	4-2. Implement CSR audits			Third party evaluation under consideration	
	4-3. Fixed-point observation (CSR awareness surveys)		Δ	Under consideration	
	5. New Corporate Law: Responses to  Internal control system		0	Commencement of enterprise risk management system that will include a response to Japan's Corporate Law	· ·
other	"Basic Policy for Internal Control Systems"	Compliance with J-SOX regulations	0	Establishment of systems in anticipation of the April 2008 commencement of the J-SOX regulations, centered on the Internal Control Department	

© Completed ○ On schedule △ Some delay × Plan suspended/abolished

#### Third CSR Road Map (FY 2008-2010)

	Third CSR Road Map	(FT 2008–2010)			
		Group-wide CSR issues	FY 2008	FY 2009	FY 2010
	Establishment of CSR promotion system	Establishment of Company-wide Committees and implementing organizations relating to CSR		$\rightarrow$	
	Plan-Act	2-1. Formulation and review of CSR Guidelines and Action Programs			$\rightarrow$
	rian-Act	2-2. Establishment and review of CSR line activity issues			<b>—</b>
		3-1. Implementation of CSR Guidelines and Action Programs			<b>—</b>
	Do	3-2. Deployment of CSR line activities throughout the Group			<b>-</b>
		3-3. Development of a enterprise risk management system			<b>—</b>
		3-4. Implementation of CSR training and dissemination strategies			<b>—</b>
******		3-5. Promotion of CSR-related communications within the Group and externally			<b>—</b>
		4-1. Promotion of stakeholder engagement			<b>—</b>
	Check	4-2. Consideration on industry standards and international code of conduct			<b>—</b>
******		4-3. Consideration on the use of third party audits			<b>—</b>

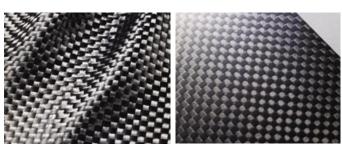


# Reducing the environmental impact of a wide range of products with Toray's high-strength and light-weight materials

# CFRP Means Outstanding Weight Reductions in Finished Products

Toray pioneered mass production of carbon fiber in 1971. Carbon Fiber Reinforced Plastics (CFRPs) are made by impregnating and hardening resins in carbon fiber, which is made by baking and carbonizing acrylic fibers. CFRP offers superlative strength and elasticity. It's superiority stems from the fact that, in comparison with metals such as steel or aluminum, it offers the same degree of strength and rigidity at much less weight. CFRP was first used in sports and leisure goods such as golf clubs, tennis rackets and fishing rods, and applications expanded into the aerospace industry for materials used in aircraft and satellites. In the 1990s, CFRP began to be widely used in industrial applications, such as pressure vessels, industrial machinery and civil engineering construction materials.

The use of CFRP in automobiles and aircraft offers dramatic weight reductions in the finished product, and this lowers fuel con-



Carbon fiber fabric (left) and in a resin-hardened CFRP sheet (right)

sumption. As a result, the demand for CFRP has been growing at an unprecedented rate, particularly in response to the urgent need to combat climate change.

#### **Key Characteristics of CFRP**

- Light-weight: 25% the weight of steel
- Strength: 10 times stronger than steel (tensile strength, weight for weight)
- Does not corrode

#### Reduction of CO<sub>2</sub> Emissions over the Product Life Cycle

At first sight, CFRP appears to present an issue in that higher levels of CO<sub>2</sub> are emitted in its production, when compared with traditional materials such as steel. However, over a product's life cycle, the CO<sub>2</sub> emissions occurring during the production of raw materials and intermediate materials, or at the time of its eventual disposal are comparatively low, as nearly all of the CO<sub>2</sub> emissions occur during the actual use of the automobile or aircraft. CFRP, with its significant effect on weight reduction, makes it possible to achieve a huge reduction in CO<sub>2</sub> emissions over the product's life cycle. The charts on the following page depict life cycle assessments (LCAs) for the full-scale adoption of CFRP as a material in automobiles and aircraft.

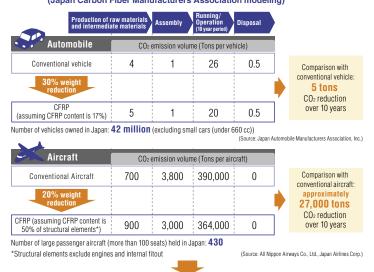
If we compare the volume of CO<sub>2</sub> emissions of a car that uses CFRP and those of a conventional vehicle, over a typical 10 year period, it is possible to achieve a reduction of approximately 5 tons with a CFRP-based car. In comparison with a conventional aircraft, one that uses CFRP materials can offer a reduction of approximately 27,000 tons

of CO<sub>2</sub> emissions over a 10 year operational period (Chart 1).

Calculations show that if CFRP was used in all the 42 million privately owned automobiles and 430 large passenger aircraft owned in Japan, it would be possible to achieve an annual reduction of approximately 1.5% in Japan's total CO<sub>2</sub> emissions of 1.3 billion tons.

If we look at the effect on the reduction of CO<sub>2</sub> emissions per ton

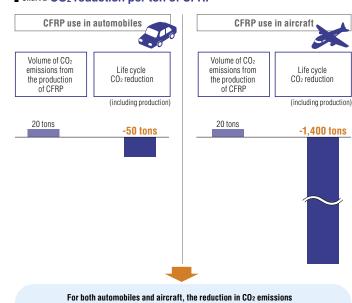
#### Chart 1 CO<sub>2</sub> reduction effect from the use of CFRP (LCA)



If all 42 million privately owned automobiles, and 430 large passenger aircraft used CFRP the annual reduction in domestic CO<sub>2</sub> emissions would be approximately

of CFRP used over a product's life cycle, calculations show a reduction of 50 tons of CO<sub>2</sub> for automobiles, and 1,400 tons in an aircraft. This means that the reduction of emissions over the life cycle would greatly exceed the additional CO<sub>2</sub> emissions that arise during production (Chart 2).

#### Chart 2 CO<sub>2</sub> reduction per ton of CFRP



from the use of CFRP exceeds the additional emissions arising from their productio

15

Calculation parameters for these charts are based on the following modeling supplied by the Japan Carbon Fiber Manufacturers Association:

mobile: Unladen weight 1,380 kg\*1 (gasoline engine, 4 door, front-engine, front-wheel drive layout) Actual fuel consumption 9.8km//\*1

Lifetime distance travelled: 94,000 km (Average number of years use [10.1 years] multiplied by number of kilometers travelled per year [9,300 km]\*2)

Route: Japanese domestic route between Haneda (Tokyo) and Chitose (Sapporo) - 500 miles, 2,000 flights per year for 10 years (Source: All Nippon Airways Co., Ltd.)

(Sources: \*1: Japan Automobile Manufacturers Association; \*2: Ministry of Land, Infrastructure, Transport and Tourism in Japan)

Aircraft: Mid-size passenger aircraft (B767) with Japanese domestic flight specifications. 280 seats.

Highlight 1 Tackling Climate Change

#### Use of CFRP for Key Structural Components of Aircraft (Fuselage, Wings, etc.)



Tetsuyuki Kyono Senior Manager, Aerospace ACM Technology Department Toray Industries, Inc.

The aircraft industry, which is struggling to cope with steep rises in fuel costs, has already made progress towards the fullscale adoption of CFRP. The Airbus A380, a jumbo jet that has been in service since 2007, uses around 35 tons of CFRP per plane, and the Boeing 787, a mid-size model that is expected to go into service in 2009, will also use around 35 tons per plane. (Amounts of CFRP used are Toray estimates.)

Tetsuyuki Kyono, the Senior Manager of Aerospace Technology Section, Advanced Composite Material (ACM) Technology Department, which has been engaged in

collaborative development with Boeing, explains: "The development of a new material that has excellent impact durability, and is composed of high-strength carbon fiber and extremely tough resin was a technological milestone. This material was adopted in 1997 for use in the empennage and floor beams of the Boeing 777, and this signaled the beginning of a new age for the adoption of CFRP in aircraft. The material received excellent feedback in actual use, and Toray's CFRP was also adopted for use in the Boeing 787 for that aircraft's fuselage, wings and other key structural elements."

#### Reduction in Environmental Impact in Production and Development of Recycling Technologies

Adoption of CFRP significantly altered the aircraft design and manufacturing processes. Whereas in conventional methods, the fuselage's metal parts had to be welded and riveted together, the new methods allow tubular molding of the entire fuselage as a single unit.

"Materials used in aircraft must be of the highest possible specifications in all aspects, such as in strength and durability, and the technologies used in production too are highly refined. As efforts proceeded towards the practical application of CFRP in aircraft, the development of the technical processes for integral molding proceeded swiftly, and as a result Toray succeeded in greatly reducing the environmental impact at the time of production. This led to a further boost in the performance of CFRP and in its environmental credibility, and we now expect that the market for CFRP will expand across all types of industry," says Kyono, and his office is receiving increasing numbers of inquiries in the field of space technology development.

The recycling of CFRP remains a challenge, and several technologies are being investigated. Technologies for the production of recycled milled carbon fiber are being developed, and these will

> allow recycling of more than 90% of the recovered product, with an environmental burden of just one twentieth that of non-recycled carbon fiber. The demand for carbon fiber is growing at a rate of 15% annually, and Toray is actively engaged in efforts to develop recycling technologies in response to anticipated growth in the amount of CFRP that will need to be disposed of.



The Boeing 787, which uses CFRP for its structural parts







Use of CFRP in the Boeing 787

Since 2003, joint development of CFRP has been under way at Toray and other parts and material manufacturers. Our greatest challenge was to develop low-cost manufacturing technologies based on integrated molding. The success of CFRP has fully satisfied our expectations.

CFRP has many advantages. In the build of the aircraft, we see significantly less waste, fewer hazardous materials and shorter cycle times. In operation, the structure is more durable and does not corrode or fatigue like metals. Passengers will be able to enjoy greater comfort from lower altitudes and higher humidity in the cabin. Airlines will be able to save on lower landing fees that correspond to aircraft body weight, in addition to fewer repairs.

In the future, we expect to see Toray take further steps in cutting down the environmental impact from material manufacturing. We use composites from Toray to improve structural efficiency of our aircrafts which results in significant reductions in life cycle fuel consumption and in overall emissions.

Alan G. Miller Manager, B787 Technology Integration Boeing Company

#### Ongoing Technical Innovation in the Automobile Industry

Now that legal frameworks for environmental responsiveness are about to be implemented in the automotive field, CFRP is being increasingly adopted for use in vehicles.

Hidehiro Takemoto of Toray's Advanced Composites Development Center says: "Many countries are on course to implement tough regulations on automobiles. For example, in Japan, passenger vehicles will have to achieve an average fuel consumption of 16.8 km/l or more by 2015, and in the EU, CO2 emissions must be less than 130 g/km by 2012. In order to meet the requirements of such regulations, vehicles will have to be much lighter. Toray aims to have CFRP used in automotive components, and it is proceeding with collaborative development in partnership with automakers and major parts manufacturers."

As part of a national project known as the "Automotive Light Weight Structural Elements of CFRP Composites" supported by Japan's New Energy and Industrial Technology Development Organization and the Ministry of Economy, Trade and Industry, since 2003, Toray has been conducting research and development together with Nissan Motor Co., Ltd. that addresses concrete technical matters of relevance to the adoption of CFRP for automotive components.

Takemoto continues: "We carried out a major reworking of molding processes for CFRP components, which used to be more



Automotive components is another field where CFRP is being adopted

complex and time-consuming than the processes used for metal components. As a result, the molding process for a vehicle platform that had taken 160 minutes using the old technologies was shortened to just 10 minutes. This means that there is now the potential to use CFRP for major components in vehicles with annual production of tens of thousands. Furthermore, this improvement results in a reduction of the amount of energy needed for the operation Hidehiro Takemoto of production machinery, and a consequent Composites Development Center reduction in CO<sub>2</sub> emissions during production—something that had been an issue."



Senior Staff, Advanced Toray Industries, Inc.

Toray continues to work towards reducing the environmental impact during production, and it is making ongoing contributions to the efforts to combat climate change by furthering the use of CFRP as an environmentally friendly material.



For more information on Toray's efforts in response to global warming, see page 28.

#### **Toray Receives the Ecological Business Award** from "eco japan cup" 2007

At "eco japan cup" 2007, jointly organized by the Ministry of Environment in Japan, Sumitomo Mitsui Banking Corporation and Environmental Business Women, Toray received the Environmental Business Award for its advanced "environmental business model" for the development of CFRP, an example for the industry. The award was in recognition of Toray's efforts, which, through the use of CFRP, are expected to cut fuel consumption and reduce the weight of automobiles and aircraft, and of the company's contribution to lessen global environmental impact by reducing CO<sub>2</sub> emissions.

#### **High Expectations from Airlines**



Tomonohu Matsumura Director CSR Promotion Environment and Social Affairs All Nippon Airways Co., Ltd

#### CFRP Offers Great Advances in Fuel Efficiency and Aircraft Life Expectancy

Some 98% of all CO<sub>2</sub> emitted during the course of the All Nippon Airways Co., Ltd. (ANA) Group's business is generated by the aircraft that it operates. ANA, as a company operating in the air transportation sector, which sustains itself at the expense of high CO<sub>2</sub> emissions, is doing its best in every possible area towards improving fuel consumption efficiency, including the introduction of energy-efficient aircraft. The company's introduction of the Boeing 787, which is expected to improve fuel efficiency by 20% in comparison with current aircraft, is a major environmental protection initiative. Aircraft that use CFRP will not only offer a great reduction in CO2 emissions over their lifecycle, they will also allow reduced maintenance workloads in comparison with metal-based airframes and make possible a longer operational life.

ANA has high expectations for Toray to continue to supply its high quality CFRP. We are also relying on Toray to help further develop the Boeing 787 as an aircraft with even more outstanding maintenance characteristics. ANA is always pursuing safety and customer comfort, and we have great expectations pinned on advanced materials such as CFRP which could lead to improved safety.

# Delivering safe and reliable water for people around the world

Rapid population increases and economic development around the world are having a negative impact on the world's water environment and causing water resource shortages. Some 97.5% of the world's water is in the oceans. Most of the remaining 2.5% is freshwater and exists as glaciers or underground water. Only 0.01% is readily available for human use. At the moment, around 1.1 billion people do not have access to safe drinking water. Toray Group has developed seawater desalination and wastewater reclamation systems based on high-performance membrane and water treatment technologies, which have been refined over many years, and has been providing such water treatment systems for large plants around the world. The Group has been meeting the challenges of water resource problems by utilizing water treatment technologies to meet the various requirements for water quality.

## **Effective Use of Global Water Resources with Minimal Energy Input**

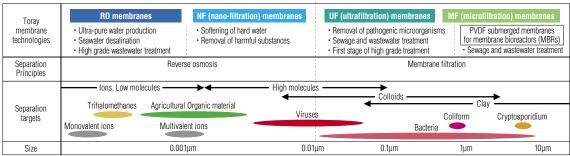
#### Supplying Water for Various Purposes Using Efficient, Energy-saving Water Treatment Technologies

Toray started research and development of membranes for seawater desalination in 1968. In 1980, the company developed and marketed reverse osmosis (RO) membranes for ultra-pure water for semiconductor production. After that, a variety of separation membranes were developed, utilizing Toray's core technologies—organic synthetic chemistry, polymer chemistry, biotechnology and nanotechnology. In addition, Integrated Membrane Systems (IMS) were developed to achieve optimized water treatment applying Toray's proprietary

membrane technologies for uses such as in industry and municipal water supply.

An RO seawater desalination system can produce drinking water at a lower cost than conventional thermal desalination systems. Toray's membrane and water treatment technologies enable more efficient desalination with lower energy consumption. Also, plants employing Toray's membranes and technologies can be operated easily and do not require experienced engineers, and given the high cost performance of membranes, these technologies have enabled the efficient use of water all over the world not just in developed countries.

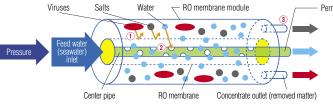
#### Toray Membrane Technologies and Their Functions





Examples of membrane

#### A Water Treatment Setup Using RO Membranes



When seawater passes through an RO membrane, ① all matter except water is blocked, ② water is allowed to penetrate the membrane interior, and ③ seawater is separated into pure water and concentrate (brine).

Water treatments using RO and NF membranes are advanced separation processes in which a pressure greater than osmotic pressure is applied to force the water through the membrane. In the case of seawater desalination, the advantages of the RO membrane process over the conventional thermal process are:

Recovery ratio:

4 times greater than thermal process

• Low energy requirements:

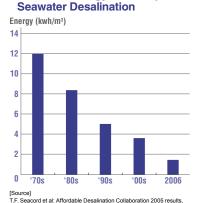
less than 20% of thermal process

Low plant cost:

50 to 90% of thermal process

#### 10µm

Trends of Energy Consumption for



d. & Water Reuse, Vol.16 (2), 10-22, 2006

Toray's Technology Supports Water Resources in Singapore



Khoo Teng Chye Chief Executive Public Utilities Board Singapore

"In a small country with a large population like Singapore, water resource management is a serious problem to be solved. To ensure that the country maintains a robust and sustainable water supply for years to come, we, the Public Utilities Board of Singapore (PUB), have been investing in R&D and technologies to find innovative and more cost-effective systems for water treatment." (Mr. Khoo Teng Chye, Chief Executive, Public Utilities Board of Singapore)

Singapore's long-term water supply strategy is known as the Four National Taps: (1) storage rainwater at the local catchment, (2) import from Malaysia, (3) NEWater (ultra-

clean, high-grade reclaimed water) and (4) seawater desalination. For more than 10 years, Toray has been working with PUB and supplying proprietary membrane technology for PUB's water projects.

"Toray's involvement in such projects in Singapore in 2004 began with its supply of RO membranes to the NEWater plant in Seletar; a water treatment plant is capable of treating 24,000m³ per day. In 2005, Toray's seawater desalination technology was adopted for the Pacific Rim's largest desalination plant, built in the Tuas area, with a capacity for handling 136,000m³ per day. In addition, in 2008 Toray supplied RO membranes for the Changi Plant, Singapore's largest NEWater plant, and the world's second largest (after Kuwait's Sulaibiya Wastewater Treatment and Reclamation Plant). Toray has a 60% share of Singapore's RO membrane market." (Tadahiro Uemura, Director, Water Treatment Technology Center, Toray Industries, Inc.)



Tadahiro Uemura
Director
Water Treatment Technology Center
Toray Industries, Inc.

#### Singapore is to be Hub for Water Technologies

"Our partnership with Toray and its cutting-edge technologies will be a boost to our R&D activities as we actively seek to build a vibrant R&D sector in Singapore." (Mr. Khoo)

In December 2007, PUB and Toray signed an MOU on joint development in water treatment.

"Presently, a low-fouling RO membrane module is planned for use at the 228,000m³ per day Changi NEWater plant, which is scheduled to start-up in 2 phases from 2009. Because of its low-pressure operation, it consumes less than one-third the energy of RO desalination methods." (Uemura)

In combining the existing NEWater plant at Seletar and the Tuas desalination plant, treatment output from plants using Toray's membranes will be total approximately 400,000m³ per day, equivalent

to approximately 30% of Singapore's water needs.

"Our aspiration is to build Singapore into a hub for water technologies. We hope that the collaboration with Toray will yield new solutions that can bring us closer to our goal." (Mr. Khoo)

Toray will contribute to Singapore's water management through its partnership with PUB and the continuing advancement of membrane application technologies.



The largest desalination plant in the Pacific Rim-the SingSpring Desalination Plant, Tuas, Singapore Photo courtesy of Hyflux Ltd.

# Contributing to Resolving Water Issues Around the World: Famine, Drought, and Floods

Global water shortages and water contamination are becoming more serious due to global warming.

In the United Arab Emirates (UAE), Toray's proprietary membrane bioreactor technology, which excels in maintaining water permeability and anti-fouling properties against sludge, has been applied in wastewater treatment and reclamation. In addition, large-scale desalination plants are to be built in areas with scarce water resources including the Middle East, the Mediterranean and the Caribbean.

Technological development in recent years has enabled a significant reduction of the energy consumption for membrane water treatment and desalination, and the environmental advantages of the water membrane filtration system are expected to spur wider use. Toray will continue to aim at innovation of water treatment technologies, and to support nations facing water resource problems by securing safe water supplies at low cost with low energy consumption. Toray keeps contributing to realizing a higher quality of life of the people in these nations.



The Al Ain Sewage Reclamation Plant in UAE using Toray's submerged membrane modules for membrane bioreactors

# Fostering self-motivated and capable people from all over the world for the benefit of the company and society

Development of human resources is not only in a company's interest, it is also for the good of the local communities where the company is located and where the employees live and work.

With more than half its employees based in the 21 countries and regions outside Japan, Toray Group has been steadily giving its management a more global focus, addressing the needs of borderless economics, and developing the communication tools to match the advance of globalization.

Toray aims to nurture human resources who have the international perspective appropriate to company goals, and it aims to generate the diversity among employees that catalyzes innovation.

#### Improved Training at Overseas Companies and Affiliates

Toray Group is well aware that hiring, training and keeping a diverse mix of people is essential for corporate management. Accordingly, the Group organizes human resource training to reflect both this diversity and its global focus. In addition to the conventional training curriculum in place at each Group company and Senior Management Seminars in Japan, Toray Group is working on expanding opportunities for Senior Management Seminars in different regions. The Group has held regional Senior Management Seminars in English in Europe since 2004 and in the United States since 2006. From 2007, such seminars have also been

held in China, Thailand, and Indonesia in local languages.

The training focuses on understanding such matters as the Group's Management Philosophy, mid-term business strategies and Group-wide management methods. The Group nurtures human resources who can reflect the Corporate Philosophy: contribute to society through the creation of new value with innovative ideas, technologies and products; develop excellent communication skills; and thrive on challenge.







Lisa Ahart
HR Director
Toray Plastics

President Toray Plastics (America), Inc.

#### **Development of CSR Tool-kit for Use in Group Companies**

Since 2006, Toray Group companies in the U.S. have jointly conducted the U.S. Senior Management Seminar. In 2007, 18 participants from 7 companies gathered to learn about Toray Group's Corporate Philosophy and Mission, as well as about leadership, intercultural communication and other management skills. The participants also discuss various topics related to Toray Group management. In order to strengthen human resources development structure, we are designing a training program for new managers to learn basic human management skills in 2008.

Although Toray Group companies hold a joint training program, individual training programs are also organized in each company. Toray Plastics (America), Inc. (TPA) has been active in running training programs focused on areas such as safety, leadership and business skills.

In 2007, TPA was busy integrating CSR activities into the daily activities of all employees. While TPA continues to provide safety training, it has completed a CSR training campaign that is designed to enhance employees' understanding of CSR principles. A DVD tool-kit has been developed and used in conjunction with the training program. An informational brochure was developed as a companion to the DVD. We are hopeful that other Toray Companies in the U.S. will use these tools in the near future.

# Malaysia

Section Manager, Administration & HR Division, Penfibre Sdn. Berhad

#### Government and Company Cooperate to Boost Personnel Training

In Malaysia, a country where multinational corporations are thriving, the government is actively supporting corporate human resource training programs. Taking advantage of this support, the 4 Toray Group companies in Penang state have held training activities at the training center for over 10 years. The training has been focused on management training in such areas as quality, production and safety.

In 2007, the Film Division of Penfibre Sdn. Berhad hosted a 13-session training program. A total of 361 participants attended the company's unique training program on the topics: Introduction to CSR, 10 CSR Guidelines, and How to identify CSR Issues.

# Focus on Passing on Technical Know-how from Experts to New Employees

Société des Fibres de Carbone S.A. (SOFICAR) considers human resource development to be one of the most important issues in business. In 2007, more than 70% of all staff took part in education and training, a total of more than 3,000 hours. The objective was to pass on technical know-how from experts to new staff. The curriculum for the in-house training program is tailored to the abilities and needs of individual employees, based on interviews with top management. Subjects such as safety, product technology and communication are added to the tailored program.

The company plans to hold a seminar to study crosscultural communication between Japan and France for section managers in 2008.

In 2007, 14 people from 10 companies took part in the Senior Management Seminar, which is held every year in Europe.



Michel Brisson
President
Société des Fibres de
Carbone S.A.



# China



Shen Jie
General Manager, General
Administration Department
Toray Fibers (Nantong) Co., Ltd.

#### **First Toray Group China Senior Management Seminar**

In August 2007, 18 people from 10 companies gathered for the first Toray Group China Senior Management Seminar. It was an interesting and packed program: participants could get a clear idea of Toray's goals for the future; they see for themselves the importance of personnel training, through studying a wide range of subjects from Toray's Management Philosophy, Safety and health, accident prevention and the environment to business development, production management, and R&D.

Toray Fibers & Textiles Research Laboratories (China) Co. Ltd. (TFRC) was established in Nantong, China in 2002. TFRC carries out cutting-edge research, as a key R&D base in Toray Group. While upgrading the skills of individual researchers, TFRC actively engages in joint research with outside bodies, such as universities in China, in order to expand its research capacity and develop advanced technologies.



# **Thailand**

Temphuwapat Chintana Manager, Personnel Section, Human Resources Department, Luckytex (Thailand) Public Company Limited

# First Toray Group Thailand Management Seminar in the Thai Language

The first Toray Group Thailand Management Seminar was held in May, 2007 in the Thai language to give the participants (28 persons comprising Deputy General Managers and General Managers from the 4 Thai Group companies) a better understanding of Toray's Corporate Philosophy, global operations, Project IT-2010 and CSR activities. The seminar's focus was to improve the participants' abilities in situation analysis, problem discovery and solving, and to strengthen their identity as part of Toray Group.

The participants recognized the importance of proactively taking counter-



measures by anticipating problems at an early stage, and they engaged in identifying and solving problems in the seminar workshop.

The seminar proved to be very useful at a practical level and it is expected to continue to provide local staff with opportunities to develop and improve their performance effectively.

#### First Toray Group Indonesia Management Seminar

The first Toray Group Indonesia Management Seminar was held in November 2007, with 45 managers from 11 companies in the Indonesian region participating. In addition to looking at Toray's Management Philosophy and business, the curriculum covered crucial business areas such as how to perform status analysis, and the identification and solution of problems.

Previously, training had been carried out at individual companies: this was the first joint training session. Participants could see the scale of Toray Group and the scope of the company's business for themselves. This motivated Group companies to work together to plan more joint initiatives. We intend to continue with such programs in the future.



Indonesia



Gamal A. Nasir HR Section Manager P.T. Indonesia Synthetic Textile Mills

#### **Global Human Resource Capability is the Key**

Message from General Manager of the International Division that Promotes Globalization in Group Business

Kenji Ueno
General Manager, International Division
Torav Industries. Inc.

Toray Group was one of the first Japanese manufacturers to expand overseas, sending employees to work abroad more than 50 years ago, and establishing its first overseas production facility 45 years ago. Things have changed considerably since then and now, as globalization progresses, it is vital to train and utilize local personnel to build a sound business foundation and sustained Group competitiveness.

Human resource training is designed to upgrade the abilities of personnel in the entire Toray Group, irrespective of their place of recruitment. These abilities include crosscultural communication and, specifically, respecting opinions that differ from one's own. For example, at Toray Group Senior

Management Seminars, senior managers from around the world have an opportunity to enhance their potential. Also, at the regional Senior Management Seminars, Toray head office and regional offices work together to tailor the Group's common educational program to reflect the local business environment

Toray Group has always sought and employed the highest quality local human resources, and the utilization of local personnel has become even more important in light of increasing globalization. Toray is working towards the goal of increasing the ratio of local personnel at senior management levels in the organization.





# Basic Policy & Enhance Corporate Governance and Management Transparency

#### Action Program (FY 2007)

Toray Group is implementing the PDCA cycle to build a CSR management system for Toray and its Japanese and overseas subsidiaries and affiliates. The Group will implement risk management in order to establish internal control systems in accordance with Japan's Corporate Law; it will ensure accountability in corporate governance through its internal control systems, and it will maintain and enhance management transparency.

#### **Action Program Results**

- 1. In compliance with Japan's Financial Instruments and Exchange Act, the Internal Control Department has established internal control systems and is engaged in the documentation of administrative processes and other activities.
- 2. In March 2008, the following items were added to Toray's "Basic Policy for Internal Control Systems" under Japan's Corporate Law: thorough implementation of security trade administration, cutting all ties with antisocial forces, and promoting the establishment and operation of internal control systems relating to financial reporting.
- 3. Toray Group made assessments on enterprise risk management based on the probability of an event and the extent of the event's impact.
- 4. The Group initiated CSR Line Activities in all regions outside Japan.

#### Commitment

#### Implementation Leader

#### Norihiko Saitou

In charge of CSR

General Manager, Investor Relations Department, Corporate Communications Department, Internal Control Department, and Advertising Department

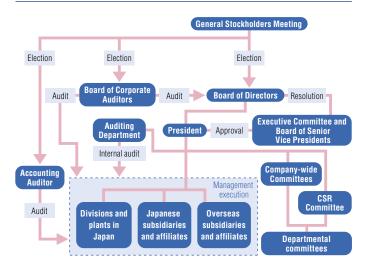
General Manager, General Administration & Legal Division

Toray believes that behaving as a socially responsible company leads to sustainable growth for both the company and for society at large. The Group is confident that its CSR activities will underpin its efforts to be an "Excellent Company" with global reach. Toray will develop its enterprise risk management by paying close attention to legal developments and changes in ISO certification standards, as well as by increasing transparency by strengthening its internal control, in order to integrate Toray Group's CSR initiatives in the business of all Group companies.

#### **Toray Group Governance Structure**

In pursuit of its fundamental objective of deserving the trust placed in it by society and its stakeholders, Toray Group has developed a governance structure characterized by sincerity and transparency.

#### **Governance Structure**



#### **Management Execution and Supervision by the Board** of Directors and Executive Committees

Toray supplies basic materials to a wide range of industries. The company believes that decision-making, management and supervision by the 30 members of the Board of Directors, all of whom are thoroughly familiar with this wide range, will result in responsible, transparent management. In consequence, Toray does not employ a system of external or executive directors. Rather, the company follows an autonomous approach to governance: a strict adherence to the authority of top management decisionmaking for each organizational entity.

For efficiency, the Executive Committee and Board of Senior Vice Presidents deliberate in facilitating resolutions by the Board of Directors, and decisions by the president. The Executive Committee is responsible for the general direction of policy, while the Board of Senior Vice Presidents implements policy. Management is further supplemented by the CSR Committee, as well as by company-wide committees that have been established to oversee key management issues.

#### Management Monitored by the Board of **Corporate Auditors**

The Board of Corporate Auditors monitors Group management. It comprises 4 auditors, including 2 external auditors. The Auditing Department cooperates with auditors as requested.

In FY 2007, all auditors attended meetings of the Board of Directors. The auditing policy for the current fiscal year was decided by the Board of Corporate Auditors, which met at least every 3 months. In line with this policy, after meetings involving all directors, including the president and general managers, regular audits were conducted at business offices, plants and subsidiaries and affiliates in and outside Japan. In this way, Toray maintains and promotes a system that scrutinizes the operational performance of the company's directors.

#### **Internal Control Required by** Japan's Financial Instruments and Exchange Act

From the fiscal year beginning from April 2008, Japan's Financial Instruments and Exchange Act required companies to submit reports on internal control for financial reporting and to implement independent audits by external auditors. To comply with the new law, the Internal Control Department developed internal control systems, including the documentation of administrative processes, in FY 2007; actual operations started from April 2008.

#### **Review of Basic Policy for Internal Control Systems**

In March 2008, Toray reviewed its "Basic Policy for Internal Control Systems"—a policy which is required under Japan's Corporate Law. Some changes were made following a decision by a meeting of the Board of Directors in May 2006.

The main changes were: (1) the thorough implementation of security trade administration (2) cutting all ties with antisocial forces, and (3) promoting the establishment and operation of internal control systems relating to financial reporting. Details of these changes were described in the "Corporate Governance Report," submitted to the Tokyo Stock Exchange, and published on the company's website.

#### **Dialogue with Labor Unions**

Toray holds meetings of the Central Labor and Management Council twice a year. The meetings are attended by directors at the senior vice president level and higher and labor representatives at the union head level and above. At these meetings, management-related information is shared. and there is an ongoing dialogue with the labor union. Resolution of labor issues is undertaken at separate Labor and Management Council meetings, and these have resulted in such initiatives as a system for helping improve employees' balance between work and family life, a system that was revised in April 2007.

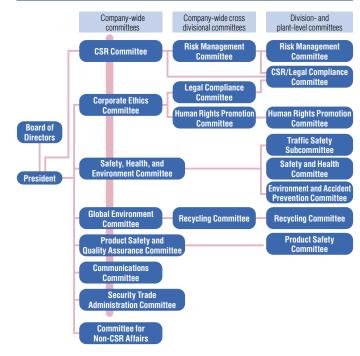
#### **Promotion of CSR Activities**

Toray Group believes that CSR is as important an issue for corporate management as growth in revenue. CSR has pride of place in the Management Philosophy, which has at its core the Group's Corporate Philosophy: The company promotes CSR activities as a way of applying that philosophy.

#### **Group-wide Promotion of CSR**

The CSR Committee, which reports directly to the president, coordinates the activities of 6 company-wide committees. In addition, CSR/Legal Compliance Committees have been established in each subsidiary and affiliate, division, and plant, where they promote CSR activities and serve as a task force for the CSR Committee. To boost CSR line activities and accelerate the Group-wide deployment of CSR, 2 changes were made in June 2007: a role of overall supervisor for CSR at director level was introduced, and a CSR Operations Department, as an independent organization to promote CSR activities, was established.

#### **CSR Committee and Promotional Organization**



#### **Development of CSR Line Activities**

Toray Group aims to advance the CSR activities conducted throughout the Group.

In April 2006, CSR line activities were initiated in each department at Toray, and simultaneously line activities were initiated at 6 chosen subsidiaries in Japan. From March 2007, line activities were initiated at the remaining Japanese subsidiaries and affiliates. By carrying out the PDCA cycle to firmly establish a Group-wide CSR management system under the CSR Road Map, Toray aims to follow up on the results of these line activities—"Do" in the PDCA cycle—on an annual basis and use this to draw up and implement activity plans for the following fiscal year.

Among overseas subsidiaries and affiliates, in each region, Toray has chosen model companies for CSR promotion. These companies promote CSR line activities that take the circumstances in each country into consideration. In addition to companies in 3 ASEAN countries (Thailand, Malaysia and Indonesia) in which CSR activities were initiated in March 2007, companies were chosen from the United States, Europe, China and elsewhere in Asia and CSR line activities got under way in FY 2007, and implementation across all these regions is now complete. In the model companies in these regions, top management and locally hired senior management have been

trained, and these companies are working to develop their own line activities by setting up themes or adopting issues. From FY 2008, Toray plans to provide assistance to overseas companies and affiliates other than these chosen companies towards their promotion of CSR line activities.

CE EN DEFINISI CSR ISTEM-ACTEM: TORAY

The CSR Mini Handbook is designed for easy portability. It has been produced for all employees (including seconded staff) at P.T. Indonesia Synthetic Textile Mills and P.T. Acryl Textile Mills in Indonesia.

For more information on the CSR guidelines and on line activities, please see pages 10 to 13.

# Uphold Corporate Ethics and Comply with Laws and Regulations

#### Action Program (FY 2007)

Toray Group will conduct ongoing educational activities concerning corporate ethics and legal compliance, while taking action as necessary to adjust to legal and other changes in the environment in which the Group operates.

#### Action Program Results

- 1. The Group continued educational activities at Toray and 115 Japanese and overseas subsidiaries and affiliates.
- 2. The Group implemented "FY 2007 CSR and Legal Compliance Line Activities" in all workplaces.
- 3. The Group actively sought to further enhance legal compliance by employees Group-wide. Study groups in security trade administration were organized and the "Legal Reform Information Distribution System" was made good use of. The Group also developed and established internal control systems for financial reporting, responded to changes to laws and regulations, and consolidated the severance of relations with antisocial forces.

#### Commitment

#### Implementation Leader Kiyoshi Fukuchi

Vice President, General Manager Personnel and Industrial Relations Division Toray Industries, Inc.

"Corporate ethics and legal compliance" is a particularly crucial issue in business administration. Toray Group operates in 21 countries and regions around the globe. It is essential that all Group companies work together to ensure compliance with the laws and rules that apply in international society and in each of these countries. Companies must also ensure that they contribute to society as good corporate citizens and that, in their activities, they show respect for local conditions. Toray will continue to foster an understanding of the importance of corporate ethics and of legal compliance on the part of every executive and employee in the Group, and the company will lead by example, steadily implementing compliance activities at every juncture.

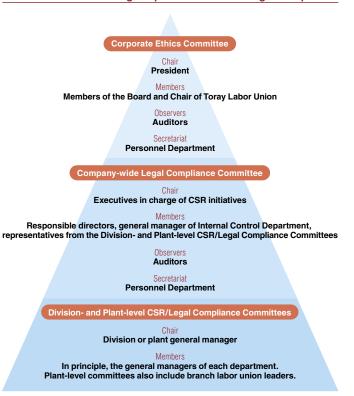
#### **Emphasizing Corporate Ethics and Legal Compliance**

Toray Group considers corporate ethics and legal compliance to be among its most important management issues. Based on a clearly defined stance and the leadership of top management, the Group works to optimize its conduct in this area.

#### **Promoting Corporate Ethics and Legal Compliance**

The figure below illustrates the framework within which Toray promotes corporate ethics and legal compliance. The Corporate Ethics Committee. which is chaired by the president, discusses policies related to corporate ethics and to the employee code of conduct and the Committee also encourages labor and management to work together in their efforts to improve CSR. The Company-wide Legal Compliance Committee primarily comprises section managers; it has an open operational framework, placing considerable importance on direct communication with top management. The Committee also plays a key role in facilitating various activities initiated by the employees themselves: comprehensively addressing Group-wide issues and ensuring legal compliance. At the division- and plant-level, CSR/Legal Compliance Committees also encourage each employee to practice on-site activities based on his/her awareness of related issues.

Framework for Promoting Corporate Ethics and Legal Compliance



In addition to each company's CSR/Legal Compliance Committees, a Corporate Ethics and Legal Compliance Group has been established in Toray's Affiliated Companies Division as a point of contact for the implementation of ethical and compliant business practice at Japanese subsidiaries and affiliates. Directors and section managers responsible for legal compliance have been appointed in each company.

At overseas subsidiaries and affiliates, steps are being taken to establish active CSR/Legal Compliance Committees. This initiative is based on a strategy coordinated by Toray's International Division, the CSR Operations Department and the relevant decision-makers in each company. Companies that will undertake activities to strengthen CSR/legal compliance have been targeted worldwide, and as of March 31, 2008, 55 companies were implementing such activities.

#### Corporate Ethics and Legal Compliance Code of **Conduct and Handbook**

The Corporate Ethics and Legal Compliance Code of Conduct is a concrete set of standards that must be strictly observed by all Toray Group executives and employees in relation to all corporate activities both in Japan and abroad. It strictly prohibits, for example, bribery in relation to all stakeholders.

Violations of these rules that are upheld by an inquiry conducted by the Rewards and Sanctions Committee are penalized strictly. Proven violations also result in disclosure of relevant information, an investigation of the cause, and action to prevent a recurrence.

All Toray executives and employees (including part-time and temporary personnel) receive a copy of the Corporate Ethics and Legal Compliance Handbook, which contains the Code of Conduct with a detailed explanation. The second edition of the Handbook was published in April 2007 in response to revisions of the Group's Management Philosophy, changes in applicable laws and regulations, and other new information.

The Group also publishes similar codes of conduct, guidelines, handbooks, and other information for Japanese employees and those at overseas subsidiaries and affiliates which have CSR/Legal Compliance Committees.



Corporate Ethics and Legal Compliance Handbook

#### **Fostering Corporate Culture Based on Ethics and Legal Compliance**

Toray Group strives to ensure a thorough understanding and acceptance of its corporate ethics and legal compliance standards. One way in which it does this is by having each workplace devise and implement a range of educational activities. For example, corporate ethics and legal compliance issues are taken up at monthly meetings, study groups are organized and public reports of instances of corporate misconduct are reviewed.

The Group has introduced a Legal Reform Information Distribution System, under which bulletins relating to amendments to laws relevant to administration within Toray Group are emailed to all Toray departments and Japanese subsidiaries and affiliates on a weekly basis. A Toray Group intranet allows employees and managers to check items in detail. The intranet also features a Company-wide CSR/Legal Compliance Bulletin Board system, which has enhanced the Group's ability to distribute information on legal compliance issues.

#### **Establishing and Operating Reporting and Consultation Channels**

Any actions that might be subject to Corporate Ethics and Legal Compliance Code of Conduct should, in the first instance, be reported to and discussed with a direct supervisor. Should that avenue present difficulties, several alternative options have been created: Consultation offices where matters can be reported or discussed have been established at each division and plant; employees can also use a dedicated hotline or email service to directly report to or consult with the chairperson or secretariat of the Legal Compliance Committee for Toray Group. In addition, the Executive Meeting attended by representative directors welcomes a wide range of proposals and opinions from employees.

The confidentiality of employees using these reporting and consultation channels is strictly maintained. Labor contracts and company regulations specifically prohibit discrimination against employees making reports or seeking advice, and they clearly stipulate the disciplinary action that would result from false accusations.



#### **Company-wide Activities in FY 2007**

In FY 2007, Toray established or undertook the following company-wide

- Strengthening and extending the reach of legal compliance education in specific fields, such as Security Trade Administration
- Developing and establishing an internal control review system for financial reporting
- Improving information distribution system for legal reforms and related issues
- Responding to amendments to laws, regulations and government notices (Japan's Subcontract Act, etc.)
- Consolidating the severance of relations with antisocial forces

#### **Strengthening Security Trade Administration**

In response to a warning issued by Japan's Ministry of Economy, Trade and Industry (METI) to Toray and Toray International in May 2006 in relation to an application to export certain products to Taiwan (see page 23 of the 2007 CSR Report) Toray strengthened management systems and implemented countermeasures in its Japanese and overseas subsidiaries and affiliates to prevent a recurrence. As a result, in November 2007 Toray and Toray International regained the METI general approval certificates. Toray will continue to ensure that directors and employees are thoroughly aware of Security Trade Administration requirements and will ensure strict implementation of internal management procedures.

# Emphasize Safety, Accident Prevention, and Environmental Preservation

#### Action Program (FY 2007)

- 1. Fulfilling its responsibilities for promotion, the Safety, Health, and Environment Committee will lead the activities in accordance with the 2007 Company-wide Safety, Health, Accident Prevention, and Environmental Action Policy.
- 2. Toray Group will undertake activities with "Zero serious accident" and "World's No.1 in the rate of lost-worktime injuries" as the safety targets for Step-Up 3Z\*1 "Zero Accidents." The activities will also be initiated at Japanese and overseas affiliated companies.
- 3. The Group will establish the Third Three-Year Environmental Plan and begin implementation.
- \*1: Zero Accident Program, Zero Trouble Program, Zero Claims Program

#### Action Program Results

- 1. Undertook activities in accordance with the 2007 Company-wide Safety, Health, Accident Prevention, and Environment Action Policy.
- 2. Toray and Japanese and overseas affiliated companies have undertaken activities based on the action plans formulated at each company and plant.
- 3. Toray Group formulated and introduced the Third Three-Year Environmental Plan, which is designed to achieve Group targets.

#### Commitment

#### Implementation Leade Akihiro Nikkaku

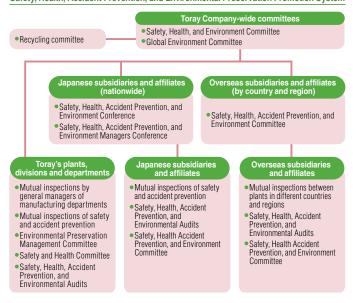
Executive Vice President and Representative Director In charge of Product Safety and Quality Assurance Planning Department General Manager, Manufacturing Division Toray Industries, Inc.

In the critical area of safety, we are striving to achieve the world's lowest rate of lost-worktime injuries and our "Zero serious accident" target by pursuing the Step-Up 3Z (Zero Accident Program), an important part of the IT-2010 Manufacturing Technology Innovation Project. Environmentally, we are working to further reduce the impact of our operations and to contribute to the realization of a recycling-based society by achieving the targets set out in the Third Three-Year Environmental Plan adopted in FY 2007.

#### Unified Management of Safety, Health, Accident **Prevention, and Environmental Preservation Issues**

The basic Toray Group policy with regard to safety, health, accident prevention and environmental preservation is one of unified global management instituted throughout Toray Group each year in its Safety, Health, Accident Prevention, and Environmental Action Policies. Toray Group undertook the 15 key actions listed below in FY 2007. Led by the Companywide Safety, Health and Environment Committee, Toray Group reviews the status of activities and performance in the light of various criteria at each Toray company and plant. After the appropriate deliberation, progressive policies are formulated for the future. Specifically, the Global Environment

Safety, Health, Accident Prevention, and Environmental Preservation Promotion System



Toray Group Safety, Health, Accident Prevention, and Environmental Action Policies for 2007

Р	olicy	Major activity item				
General	Promote 3Z activity Accomplish risk management	Certain implementation of 3Z (all companies & plants) — philosophy, principles, education concerning laws etc.     Implement according to plan activities to reduce risk     Further improve workplace discipline				
Safety	Emphasize basic rules Eliminate serious accidents	Make easy to understand work procedures and strictly follow the procedures     Improve safety consciousness by accomplishment of KY training     Accomplish safety measures against rotating object and moving machine parts				
Health	Emphasize occupational health management	Emphasize handling and management of chemical substances     Accomplish mental health management				
Accident prevention	Strengthen accident prevention measures and emergency response capacity	Revise Fire Prevention (FP) management facilities and management procedure     Strengthen chemical plant accident prevention and environmental measures     Strengthen crisis management capacity during the night and holidays     Implement Business Continuity Plan (BCP) to address major earthquakes				
Environmental conservation	Promote Third Three- Year Environmental Plan Accomplish chemicals management	Promote plan for reducing environmental impact A new challenge: zero emissions Promote preparations for REACH regulations				

Committee discusses and formulates policies regarding such issues as environmentally friendly products, product recycling and global warming.

The Toray Group Safety Meeting in Japan has been held every November and attended by the presidents, executives and plant managers from Toray and from Japanese subsidiaries and affiliates. In FY 2007, this meeting was expanded into Toray Group Safety Meeting attended by representatives from companies and plants in other countries and regions around the world, as well. This meeting proved effective in increasing awareness of safety issues among employees throughout the entire Group.

#### Responsible Care (RC) Program

Chemicals are important substances that are essential to our daily lives, but if mishandled, they may be a threat to human life and to the natural environment. It is therefore crucial that chemicals are properly handled.

RC activities focus on measures that address safety, health and the environment. The program designates the responsibilities of those who

handle chemical substances at every stage of the process, from development through manufacturing, distribution, use and disposal. Toray has participated in the Japan Responsible Care Council (JRCC) since it was formed in 1995.

In March 2008, Toray became a signatory to the Association Declaration of Support for the RC Global Charter, the code for responsible care approved in 2004 by the International Council of Chemical Association (ICCA). Toray pledges to actively address each of the issues outlined in the RC Global Charter.



Association Declaration of Support for the RC Global

#### **ISO14001 Certification**

As part of Toray Group's RC activities, the Group has been working to obtain certification under the ISO 14001 international standards for environmental management. All 12 of Toray's plants have already been certified. During FY 2007, 2 plants at 2 Japanese subsidiaries as well as 2 plants at 2 overseas subsidiaries and affiliates were certified, bringing the total to 64 plants at 44 subsidiaries and affiliates.



For more information on acquiring ISO14001 certification, see page 57.

#### Safety, Health, Accident Prevention, and **Environmental Audits**

Toray Group conducts annual Safety, Health, Accident Prevention, and Environmental Audits to evaluate and improve its initiatives and management at all manufacturing companies and plants.

In FY 2007, Toray Group conducted audits at Toray's 12 plants and at 1 research laboratory, as well as at 48 plants at 25 Japanese subsidiaries and affiliates and 39 plants at 30 overseas subsidiaries and affiliates. The audits



Fnvironmental Audits in progress (paper audit at Toray Plastics Europe S.A.S.)



A Safety, Health, Accident Prevention, and A Safety, Health, Accident Prevention, and Environmental Audits in progress (on-site

focused on compliance with the revised Industrial Safety and Health Law, with an emphasis on measures for forklift safety and other issues.

#### **REACH Regulation Compliance**

The REACH Regulations\*2, a new system of chemical regulations adopted by the EU, went into effect in June 2007, with preliminary registration with the European Chemical Agency beginning in June 2008. Toray Group has adopted a variety of projects at every department and division of Toray and Japanese and overseas subsidiaries and affiliates in order to ensure compliance with a comprehensive system of regulations that include existing chemicals. Toray Group is preparing for compliance by verifying which substances are already registered and ensuring that all substances for which preliminary registration is required are in fact properly registered, as well as making preparations for final registration.

\*2: REACH: Registration, Evaluation, Authorization and Restriction of Chemicals

#### **Third Three-Year Environmental Plan**

Toray Group has formulated a medium-term basic environmental policy and is working toward systematic improvements.

From FY 2007, the Group has undertaken work on the Third Three-Year Environmental Plan based on the results achieved through FY 2006 under the Second Three-Year Environmental Plan. The Third Three-Year Environmental Plan articulates Toray Group's overall approach to environmental issues by establishing Group-wide targets.

In FY 2007, Toray Group built on its accomplishments under the Second Three-Year Environmental Plan, continuing to achieve significant results from initiatives to reduce emissions of greenhouse gases (GHGs). The Group is committed to meeting 2010 targets by moving forward with systematic measures that will further reduce the impact of its operations on the environment and instituting a strong approach to creating recycling-based societies.

#### **Progress on Third Three-Year Environmental Plan**

Area	Toray Group target (to be achieved by FY 2010)	Actual progress (FY 2007 results)	Reference page	
Prevent	Toray: 6% or greater reduction in GHG emissions over FY 1990	12% Reduction		
global warming	Toray Group (Japan): 15% or greater reduction in GHG emissions per unit sales over FY 1990	18% Reduction	28	
Management	Atmospheric emissions of PRTR Law*3 specified substances: 55% reduction over FY 2000	54% Reduction	00	
of chemical substances	Atmospheric emissions of volatile organic compounds (VOCs): 55% reduction over FY 2000	51% Reduction	29	
	Pursue the goal of zero emissions	Achieved at 12 plants at 9 subsidiaries/affiliates		
Waste	Rate of simply disposed waste 34% or lower	40%	31	
reduction	Recycling rate 85% or higher	80%	٥١	
	Landfill rate, Toray Group (Japan): 5% or lower	3.4%		

\*3: The Japanese Pollutant Release and Transfer Register Law enacted in 2001; it governs the amounts of designated chemical substances emitted into the environment

# Emphasize Safety, Accident Prevention, and Environmental Preservation

#### **Action on Global Warming Initiatives**

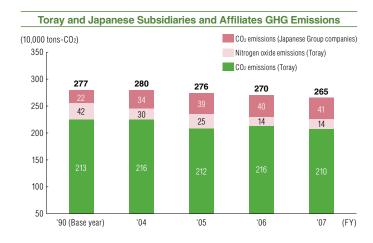
Toray Group has been consistently engaged in initiatives that reduce GHG emissions through energy conservation measures that improve operational processes, convert fuel from heavy oil to city gas, and otherwise focus on curbing global warming.

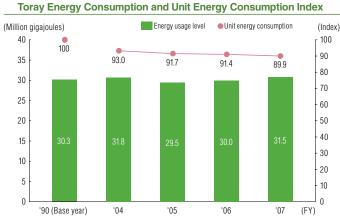
#### **Toray Actions on Global Warming Initiatives**

In working to reduce GHG emissions, Toray has set for a target for FY 2010 of reductions of more than 6% in the absolute figure for these emissions over FY 1990 levels, and has been implementing measures to achieve this.

Toray made significant progress in this area in FY 2007 by introducing gas cogeneration operations at the Shiga Plant, converting boiler fuel at the Mishima Plant, and increasing efficiency through energy conservation measures introduced in the production process. The result has been a 12% reduction in emissions over FY 1990 levels.

Toray Group exceeded its (Japan) target of 15% or more per unit sales in GHG emissions over FY 1990, effectively reducing emissions by 18% in FY 2007. Toray Group (Japan) has also achieved results with other reduction measures such as energy conservation diagnostics at Opelontex Co., Ltd., activities that reduce energy consumption at DuPont-Toray Co., Ltd. and energy conservation during processing operations at Toray Fine Chemicals Co., Ltd.





Note: Figure has been revised in the final figures to correct for estimates used in certain base unit calculations for FY 2006.

#### **Converting from Fuel Oil to City Gas**

Toray is systematically converting fuel in boilers, and completed the process at the Shiga, Seta and Mishima plants in FY 2007. The result of this initiative to date is a reduction in CO<sub>2</sub> emissions of 90,000 tons per year.

Current plans for further reductions in GHG emissions include reductions in fuel consumption through even more efficient use of energy in plants and other facilities.

Natural gas boiler at Mishima Plant



#### **Installing High-Efficiency Equipment**

In FY 2007, Toray upgraded the existing steam turbine generator at the

Tokai Plant to a high-efficiency generator, increased the amount of power generated without increasing the amount of fuel consumed, and expanded production facilities to help reduce CO<sub>2</sub> emissions by 35,000 tons per year.



Steam turbine generator

#### **Energy Conservation Activities**

at Overseas Subsidiaries and Affiliates

Toray Group consistently implements energy conservation activities every year, both in Japan and overseas, as part of its effort to reduce GHGs. In

FY 2007, P.T. Indonesia Synthetic Textile Mills, and P.T. Acryl Textile Mills introduced energy conservation diagnostics, effectively reducing GHGs by some 4,000 tons of CO<sub>2</sub> per year.



#### Energy conservation diagnostics at work

#### **Initiatives to Protect the Ozone Layer**

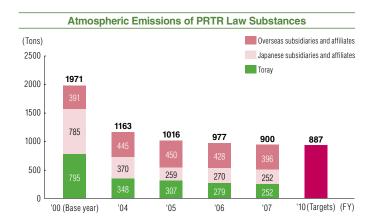
Toray ceased using chlorofluorocarbons (CFCs) in all manufacturing processes in 1994. The company has also stopped purchasing CFCs for use in refrigerators. It is working to replace existing CFCs with alternative compounds, and planning to introduce high-efficiency alternatives to CFC refrigerators in FY 2008.

#### Voluntary Initiatives to Reduce Atmospheric Emissions of Chemical Substances

Under the Third Three-Year Environmental Plan launched in 2007, Toray Group designated the reduction of atmospheric emissions of chemical substances as a top-priority issue, and the entire Group has introduced voluntary initiatives to reduce these emissions. The initiatives have been expanded to include volatile organic compound (VOC) emissions, and the Group is working to systematically reduce emissions.

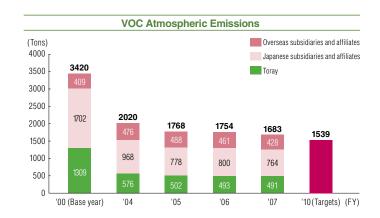
# Reducing Atmospheric Emissions of PRTR Law Substances

In FY 2007, Toray Group emitted 900 tons of substances subject to the PRTR Law into the atmosphere. This represents a reduction of 8% over the previous year (a reduction of 54% over FY 2000) and is the result of reductions at Toray and all Japanese and overseas subsidiaries and affiliates. Additional measures planned at the Toray Ehime Plant, and at Toray Plastics (Malaysia) Sdn. Berhad in FY 2008 are part of Toray Group's continued commitment to further reductions in emissions.



#### **Reducing Atmospheric Emissions of VOCs**

Working toward its Group-wide goal of a 55% reduction in atmospheric emissions of VOCs over FY 2000 levels by FY 2010, Toray Group has introduced voluntary initiatives to meet this target. In FY 2007, initiatives implemented at Toray Fine Chemicals Co., Ltd.'s Tokai Plant, and at other plants, effectively reduced emissions by 4% over the previous year (a reduction of 51% over FY 2000). The achievements of Toray's overseas subsidiaries and affiliates were particularly significant, with a 7% reduction in atmospheric emissions of VOCs over the previous year.



#### **Initiatives at Toray**

Initiatives to reduce emissions introduced at the Ehime and Chiba plants at the end of FY 2006 proved effective throughout FY 2007. Measures to strengthen emission recovery, the installation of regenerative combustion facilities, and other such initiatives resulted in a 10% reduction over the previous year in atmospheric emissions of substances subject to the PRTR law. Further reductions are planned for FY 2008 with initiatives to reduce emissions at the Tokai and Okazaki plants.

#### **Initiatives at Japanese Subsidiaries and Affiliates**

Toray Advanced Film Co., Ltd. (Fukushima) installed a regenerative combustion facility for organic exhaust gases at the end of FY 2007. The equipment came fully online in FY 2008, and for this fiscal year Toray expects to see a reduction of more than 15% in VOC atmospheric emissions over the previous year at Japanese subsidiaries and affiliated companies overall.



Regenerative combustion facility for organic exhaust gases installed at Toray Advanced Film

#### **Initiatives at Overseas Subsidiaries and Affiliates**

Overseas subsidiaries and affiliates began voluntary investigations into the

use of PRTR Law-specified substances in FY 2000. The measures introduced at Toray Plastics (Malaysia) Sdn. Berhad for recovering organic exhaust gases at the end of FY 2006 led to an 11% reduction in VOC atmospheric emissions over the previous year in FY 2007. Overseas subsidiaries and affiliates will continue to focus on these initiatives in FY 2008 and beyond.



Organic exhaust gas recovery facility installed at Toray Plastics (Malaysia) Sdn. Berhad

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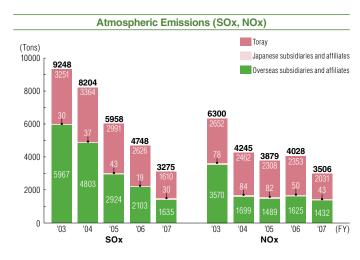
## Emphasize Safety, Accident Prevention, and Environmental Preservation

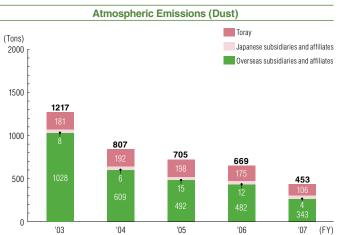
#### Initiatives to Prevent Air and Water Pollution

Toray Group has ongoing environmental initiatives in place for the prevention of air and water pollution during production. At both overseas and Japanese plants, the installation of desulphurization equipment and fuel conversion have cut SOx emissions, and the improvement of wastewater treatment facilities has reduced chemical oxygen demand (COD) emissions.

#### **Atmospheric Emissions Management** (Performance for FY 2007)

Toray Group reduced SOx, NOx and dust emissions by 31%, 10% and 32% respectively over the previous year, to 3,275, 3,506 and 453 tons.





In FY 2007, Toray achieved a cut in emissions of 1,016 tons for SOx, 322 tons for NOx and 69 tons for dust emissions. In addition to the main emission-reduction measures already in place, introduction of natural gas cogeneration, (as of January 2008 at the Shiga Plant) fuel conversion (as of November 2006 at the Shiga Plant, and July 2007 at the Mishima Plant) and the implementation of a switch to purchased electricity (at the Okazakai Plant) all contributed to a reduction in dramatic reduction in emissions. At overseas subsidiaries and affiliates emissions of SOx were reduced by 468 tons, NOx by 193 tons and dust by 139 tons. These reductions were achieved by, for example, a conversion to natural gas at the Number 3

Plant of Luckytex (Thailand) Public Company Limited and by the utilization of low sulfur coal at P.T. Indonesia Toray Synthetics.

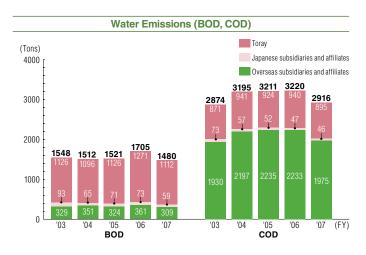
> Natural gas cogeneration facility (Shiga Plant)

#### Water Quality Management (Performance for FY 2007)

Toray Group reduced biochemical oxygen demand (BOD) and COD emissions by 13% and 9% respectively over the previous year, to 1,480 and

Toray has reduced BOD emissions by 159 tons and COD emissions by 45 tons by implementing measures to prevent water pollution at source (by a process of concentration of the wastewater, and then outsourcing treatment) and stringent operating management of the water processing facilities at the Shiga and Tokai plants.

Overseas subsidiaries and affiliates have reduced emissions of BOD and COD by 52 tons and 258 tons respectively. These reductions were achieved by, for example, increasing the capacity of the wastewater treatment facilities and by robust operating management at No. 4 Plant of Penfabric Snd. Berhad and TALTEX (Zhuhai) Ltd.





Wastewater treatment facility (Penfabric No. 4 Plant)



Wastewater treatment facility (TALTEX [Zhuhai])

#### **Initiatives to Reduce Waste**

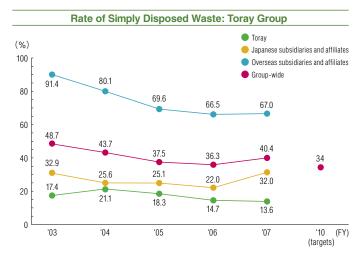
Toray Group has zero emissions initiatives in place as it works toward the realization of a sustainable, recycling-based society. Toray Group has set numeric targets for the rates of simply disposed waste\*4, landfill waste\*5 and recycled waste\*6 which form the zero emissions indicators in the Third Three-year Environmental Plan, in order to encourage progress toward zero emissions.

- \*4: (Incineration + landfill)/ Total waste
- \*5. Landfill waste/Total waste
- \*6: (Recycled resources + resources with monetary worth)/ (Total waste + resources with monetary worth)

#### Performance in FY 2007

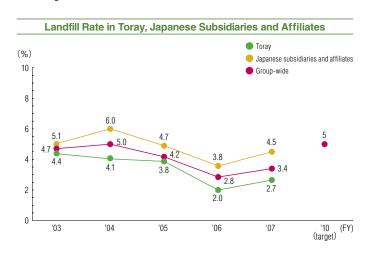
#### **Rate of Simply Disposed Waste**

Although, for Toray, the rate of simply disposed waste was reduced, subsidiaries and affiliates both in Japan and overseas saw an increase in absolute terms. The overall rate of simply disposed waste for Toray Group was 40.4%, down 4.1% over the previous year.



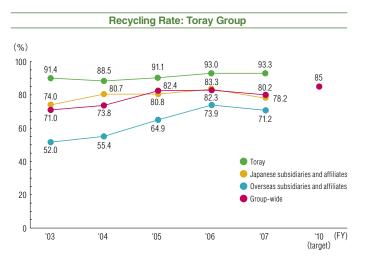
#### Landfill Rate

Although Toray and Japanese subsidiaries and affiliates showed a slight improvement in the landfill rate, Group-wide, the rate was 3.4%, achieving the 2010 target of 5%.



#### **Recycling Rate**

Although Toray's recycling rate showed an increase over the previous year, there was a decrease in recycling rates at Japanese and overseas subsidiaries and affiliates. In consequence, for the Group, there was a 2.1% decrease over the previous year, down to 80.2%.



#### **Zero Emissions Activities**

Toray Group defines zero emissions as a waste stream where simply disposed waste accounts for 1% or less of total waste generated; all Group companies and plants are working hard towards achieving this goal. In FY 2007, a further 3 plants achieved zero emissions. However, since some plants were not able to sustain zero emissions or underwent a plant reorganisation, the final total of plants achieving zero emissions was 12 plants at 9 companies; 1 plant fewer than in FY 2006.



(Colored companies and plants achieved zero emissions for the first time during FY 2007.)

#### Initiatives at Toray PEF Products Inc. (Tsukuba)

In addition to recycling waste plastic, the company has achieved zero emissions by thermally recycling vinyl sheets, previously disposed of by landfill.

#### Initiatives at Toray Advanced Film Co., Ltd. (Nakatsugawa)

The company has been working towards a reduction of simply disposed waste through the recycling of film scraps, by sorting waste materials carefully, and by moving forward with the recycling or selling of waste as a resources with monetary value. The company has achieved zero emissions.

#### Initiatives at Toray Engineering Co., Ltd. (Seta)

The company has achieved zero emissions by proceeding with the sale of metal waste with monetary worth. In addition, glass bottles and ceramic waste are recycled as road surfacing materials, and paper waste is carefully sorted and then either sold or recycled as plastic fuel (RPF).

# Emphasize Safety, Accident Prevention, and Environmental Preservation

#### **Occupational Safety Initiatives**

Toray Group is working to completely eliminate serious accidents and to achieve the world's lowest rate of lost-worktime injuries by 2010 through its Zero Accident Program.



#### **Toray Group Safety Meeting**

Toray Group hosts an annual safety meeting attended by Toray's president and executives, general managers of offices and plants, as well as the presidents of Japanese subsidiaries and affiliates. Since 2007, representatives from overseas subsidiaries and affiliates have also attended, making the meeting all the more beneficial. At the meeting the Toray president explained company safety directives. As well as allowing Toray and its subsidiaries and affiliates to report on their safety activities, the event is an opportunity for an exchange of information. As a motivational tool, awards are presented to companies which have attained safety goals such as the "Zero Accident" target, and to employees who are addressing safety initiatives.

#### 2007 Safety Slogan

- •IT-2010 Achieve Zero Accident.
- Everyone Keep the Basic Rule!

#### Principal 2007 initiatives

- Observe work standards
- Enforce use of protective equipment and enhance associated management
- Develop countermeasures for serious near-accidents and apply laterally throughout the organization

#### **Zero Accident Initiatives**

Since 2006, Toray Group has conducted various Zero Accident activities as part of the Manufacturing Technology Innovation Projects under the mid-term business strategy IT-2010. The core aim of these initiatives is the elimination of serious accidents, and the achievement of the world's lowest rate of lost-worktime injuries (0.05 or lower). The entire Group is working together with individual companies, offices and plants developing their line activities for Zero Accident, as well as developing the line activities across the organization.

#### **Direct Safety Training Using Simulations**

Toray Group has carried out simulator training drills in order to acquaint employees with hazards, to increase safety awareness and to drive home the importance of prevention. In addition to using simulators to give direct experience of entrapment in rotating parts, of being caught between moving parts on machinery, and of electric shocks, employees can see for themselves what happens when, for example, sausages become caught up in the actual machinery they themselves use. Individual companies,

offices and plants carry out training as appropriate to their situation, working hard to raise awareness of hazards.



Experiencing entrapment in a simulator (Mishima Plant)



Demonstration of hanging (Toray Construction Co., Ltd. Nagoya Branch)

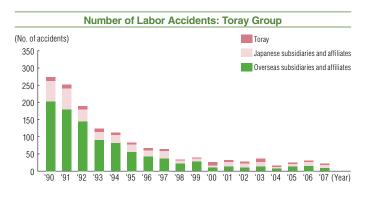


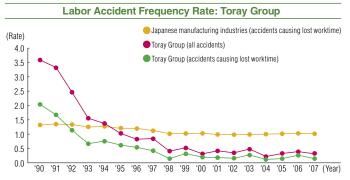
Demonstration of entrapment in actual machinery (Seta Plant)

#### **Toray Group Safety Achievements**

Toray Group's safety achievements for 2007: the total number of incidents of all types (lost worktime + non-lost worktime) was 21, with 3 occurring at Toray, 8 instances occurring at Japanese subsidiaries and affiliates, and 10 occurring at overseas subsidiaries and affiliates. For the Group, the rate of injuries resulting in lost worktime\*7 stands at 0.13 (Toray 0.13). This compares well with the rate of 1.02 for Japanese manufacturing industry as a whole. The overall accident rate including accidents that did not cause lost worktime was 0.27 (Toray 0.32). Going forward, the Group will continue to work towards its target of the world's lowest rate of lost worktime injuries (0.05 or lower).

\*7: Rate of accidents per million man-hours worked.





#### **Accident Prevention Initiatives**

Toray Group takes steps to prevent fires and explosions by carrying out drills to increase safety awareness, by voluntary safety inspections of facilities and by prevention programs using safety checklists.

# Voluntary Safety Inspections with Toray's Proprietary Checklist

Toray Group carries out annual voluntary inspections using its own checklist comprising 550 items—basic items to prevent fires and explosions, and additions in light of lessons learned from past accidents in the Group. In FY 2007, inspections were performed on hazardous substance facilities, management of flammable materials, plant management etc.

#### **Accident Prevention Education and Drills**

Toray Group believes increased awareness of the possibility of fires and explosions is essential for accident prevention. The Group regularly carries out demonstrations of explosions using experimental equipment, which enable employees to see for themselves the potential hazards of the chemicals they are handling and the explosion hazards. This training was carried out on 9 occasions at Toray and Japanese subsidiaries and affiliates in FY 2007.

#### **Details of Fire and Explosion Experiments**

- 1. Experiment setting fire to flammable liquid
- 2. Phenomenon of explosion caused by mixing gases
- 3. Dust explosion
- 4. Phenomenon of explosion triggered by static electricity
- 5. Phenomenon of explosion triggered by electrical machinery





Training with explosion experiments and ignition experiments (Toray Coatex Co., Ltd.)

Toray Group also conducts systematic fire prevention drills such as reporting, evacuation, firefighting, and other activities to minimize damage in the event of an accident. In FY 2007 the Group conducted emergency task force drills and training in the operation of fire hydrants and fire extinguishers, as well as comprehensive fire drills.



Fire-fighting training (Gifu Plant)

#### **Distribution Safety Initiatives**

In collaboration with distribution-partner companies, Toray takes steps against accidents caused by overloading, or accidents occurring during the transportation of hazardous substances.

#### **Initiatives to Prevent Overloading**

An overloaded transportation vehicle is not only a danger on the roads but also causes damage to road surfaces, or to the road structure itself, as well as being a source of noise and vibration. Toray undertakes initiatives to prevent overloading and works hard with its distribution partners to fulfil its social responsibility in shipping.

In FY 2007 Toray enhanced these measures by increasing the functionality of the weighing systems installed at the gates of its plants. In

the event that an overloaded vehicle is detected, an alarm will sound, the relevant vehicle will not be issued with shipping documents, and it will not be able to leave the site.



Overload prevention screen

#### Safety Management of Hazardous Substances

An accident occurring while dangerous or hazardous substances are being transported could potentially lead to a much more serious accident. When transporting such substances Toray demands a guarantee of safety in accordance with all laws and regulations under the Fire Service Law, the High Pressure Gas Safety Law and the Poisonous and Deleterious Substances Control Law. Toray manages the safe transportation of flammable or hazardous raw materials and products in accordance with stipulations in Toray's Hazardous Substance Transport Safety Management Regulations. The company is also working to conclude a safety agreement with its customers, raw materials manufacturers, and distribution companies, which determines duties and division of roles for safety management when loading and unloading, and during transportation.

#### **Emergency Response with Yellow Card**

Drivers of shipping vehicles carry a yellow card\*8 detailing emergency measures to be taken to minimize damage in the event of an accident. Toray has

established an emergency communication system and carries out emergency training, which provides against an accident during transportation. In the unlikely event of such an accident, Toray has procedures in place enabling the necessary staff to be dispatched as quickly as possible to the site of the accident to support the clearing up process.

\*8: Cards summarizing the names of any hazardous substances, applicable laws and regulations, hazardous properties, emergency accident procedures, emergency reporting and contact information, methods for minimizing the spread of damage, and other information.



Yellow card

# Emphasize Safety, Accident Prevention, and Environmental Preservation

#### **Environmental Accounting**

Toray introduced environmental accounting in FY 1999 to record environment-related investment and costs and to calculate their effectiveness.

#### **Toray FY 2007 Accounting Results**

Total investment was 2.72 billion yen. Most of this was concentrated in boiler fuel conversion, reducing atmospheric emissions of chemical substances, enhancing wastewater treatment facilities, and renovating product recycling facilities.

Total costs were 8.06 billion yen, of which 2.3 billion yen was allocated to efforts to improve air quality and 2.66 billion yen to improve water quality. Operating costs for existing exhaust gas and wastewater treatment facilities accounted for the majority of the total.

Energy costs were reduced by 540 million yen, waste disposal costs by 40 million yen, and the sales of valuable (i.e. with monetary worth) recycled resources was 760 million yen.

#### **Toray FY 2007 Environmental Accounting**

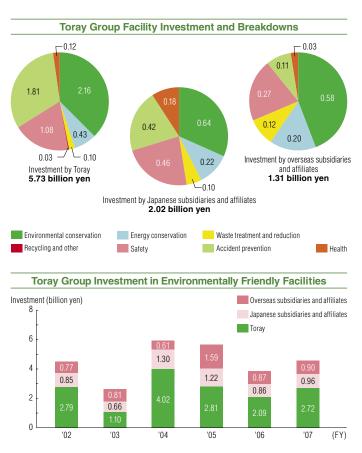
		Costs		
	Item	Subcategory and description	Investment (million yen)	Investment expenses (million yen)
		Air (including CFC countermeasures)	1,022	2,295
		Water quality	969	2,660
	Pollution prevention costs	Noise and vibration	12	30
Business area	000.0	Greening	0	228
costs		Foul odor and other	159	33
	Global environment conservation costs	Energy conservation and combating global warming		
	Resource recycling costs	Waste reduction, recycling, disposal, and PCB waste disposal services	97	1,764
Unatrooman	d daymatraam aasta	Product recycling	28	93
upstream am	d downstream costs	Container and packaging recycling	0	4
Management activity costs		Indirect labor costs, ISO certification and maintenance, environmental communications, and education	0	371
Social initiative costs		Regional initiatives, support for organizations, etc.	0	26
Environme	ntal damage costs	SOx fines, soil purification, etc.	0	558
	Total		2,717	8,062

Effectiveness							
Item	Amount (million yen)						
Reduction in energy costs	542						
Reduction in waste disposal costs	43						
Sales of valuable (i.e. with monetary worth) recycled resources	764						

#### Toray Group Facilities' Investment in Safety, Health, Accident Prevention, and Environmental Preservation Projects

In addition to information on environmental and energy conservation, and recycling, which are the subjects of environmental accounting, Toray Group reports its investments relating to safety, accident prevention, and health. In this field, in FY 2007, Toray invested 5.7 billion yen, Japanese subsidiaries and affiliates invested 2 billion yen, and the overseas subsidiaries and affiliates invested 1.3 billion yen.

Safety investment continued to center on retrofitting existing equipment to improve fundamental safety, while accident prevention investment was made to strengthen buildings to increase resistance to earthquakes. In the area of environmental efforts, Toray Advanced Film Co., Ltd. took measures to reduce atmospheric emissions of chemical substances in Japan. Overseas, Penfabric Sdn. Berhad enhanced the capacity of its wastewater treatment facilities, and Toray Saehan, Inc. established a heat-storage incineration facility for VOCs.



#### **Toray Environmental Accounting Standards**

- Some categories were changed based on the Ministry of the Environment's Guidelines for FY 2005.
- Capital investment also includes facility investments for which environmental preservation is not the main objective. Capital investment resulting from leases is also included.
- Expenses include labor costs and depreciation. However, internal labor costs related to local volunteer activities are not included.
- Only economic effects that can be determined with a high degree of certainty are included in the calculation. Presumed effects are not included.
- Energy cost reduction figures show the amount of reduction for the 12 months after the completion of an energy conservation facility. Expenses are not recorded because they are deducted when the effect is calculated.
- Waste disposal cost reduction figures show the amount of reduction achieved through waste reduction efforts and resource recycling for 12 months after the measures are undertaken.
- In allocating reserves to cover anticipated expenses for PCB waste disposal and for other matters, the entire amount is assessable in the year for which the reserves are allocated.

#### **Environmental Risk Management**

Toray Group is promoting activities for the management and reduction of environmental risk, based on the first item of the Corporate Guiding Principles of Toray's Management Philosophy: Place top priority on safety, accident prevention and environmental preservation, ensuring the safety and health of our employees, our customers and local communities, and actively promoting environmental preservation.

#### **Environmental Risk Management System**

Toray Group places importance on managing environmental risk. The Safety, Health, and Environment Committee considers policies and measures for the whole Group, and follows up on the results of initiatives. In addition, the Group carries out activities for reducing environmental risk at all its companies and plants, and assesses the conditions at its sites every year through Safety, Health, Accident Prevention, and Environmental Audits.

#### **Thorough Wastewater Management**

In order to ensure thorough wastewater management, it is important for every employee to understand the final destination of the wastewater he or she sends down the drain. To raise employees' environmental awareness and improve the level of wastewater management, the Shiga Plant carries out "wastewater education tours." The actual process from water acquisition and usage to purification and discharge is demonstrated. 1,078 employees have taken the tours so far.

#### **Proper Waste Disposal**

As illegal dumping has become a social issue, Toray Group is undertaking waste disposal from a risk management perspective. The Group has established waste disposal management rules that include the selection of highly reliable disposal companies from the perspective of a responsible waste emitter, and regular (at least once a year) onsite confirmation of waste disposal conditions. Toray Group confirms that these rules are being followed through annual safety, health, accident prevention, and environmental audits, and it strives to ensure strict waste disposal management.

#### **Soil and Groundwater Pollution Prevention**

Toray Group constructs special embankments around facilities and storage tanks holding hazardous or dangerous substances to prevent spills from leaking into the surrounding area or seeping into the soil.

Cleanup operations have been progressing favorably at 2 problem sites discovered through Toray's own investigations: the soil contamination at the Nagoya Plant (refer to *CSR Annual Report 2005*), and the groundwater contamination at Toray Monofilament Co., Ltd. (see *Toray Group Environmental Report 2002*).

Toray Group is committed to conducting voluntary surveys, reporting and otherwise disclosing survey results, and undertaking adequate purification measures in the event that any pollution is discovered.

#### **Compliance: Accident Prevention and Environment**

In FY 2007, none of Toray Group companies or sites were subject to government sanction due to violation of any law or ordinance. However, there were 3 accidents, including an explosion at the Mishima Plant (see below). All of these cases were immediately reported to the authorities, and measures were taken to prevent reoccurrence.

There were a total of 5 complaints from local residents concerning odors or noise. These reports were taken seriously and the Group made improvements to address these issues.

Toray Group Environmental Incidents in FY 2007	
Administrative disposition due to violations of laws or ordinances*9	0
Accidents (fires, explosions, environmental accidents, etc.)	3
Complaints/requests (noise, odor, etc.)	5

\*9: Includes improvement orders and fines. Improvement guidance and recommendations are included in accident figures.

#### **Burst Vessel at Toray Mishima Plant**

On September 22, 2007, there was an incident involving a burst vessel at the Mishima Plant polyester production facility, which resulted in a fire that damaged part of the plant interior. Although the fire was brought under control after an hour, it caused a great deal of concern and inconvenience to nearby residents. The burst resulted from the overheating of water in a cooling jacket under airtight conditions, and the ignition of leaking ethylene glycol. Although 3 people were injured in the accident, none of the injuries was serious. The accident did not cause major damage, and safety measures for equipment and operations are being implemented at this and similar facilities in Toray Group.

#### **Health Effects and Response to Asbestos**

Toray Group has manufactured and imported building materials containing asbestos in the past, and some of its buildings and facilities were constructed using building materials and thermal insulation containing asbestos. Starting in FY 2005 when the health hazards of asbestos became a social issue, the Group took action to address the problem of facilities containing the substance,

and launched a program of health examinations for any of the approximately 3,300 current and past employees who had handled even small amounts of asbestos in years gone by, and wished to undergo the examinations. Toray Group is working in good faith with individuals diagnosed with asbestos-related health issues by helping them apply for workers' compensation and providing an ongoing program of medical examinations. The health effects on past and present Toray Group employees as of March 31, 2008, are described in the table below.

Toray Group has not been contacted about health issues by residents living near affected facilities.



# Ensure Product Safety and Quality

#### Action Program (FY 2007)

Toray Group will continuously and systematically work to improve product safety and quality assurance management systems, through the Product Safety and Quality Assurance Committee and the Manager's Council of the Quality Assurance Department. The Group will undertake activities with the participation of all departments, including sales, procurement, production, engineering, research, and quality assurance, in order to establish a global system that also covers Japanese and overseas affiliated companies.

#### Action Program Results

- Revision of Toray Group's Quality Policy: Recognition of the "Customer First" stance as a policy requiring the participation of all business areas was fostered throughout the Group.
- Establishment of Quality Assurance Control Regulations: Work practices in each business area that are subject to quality assurance regulations were defined.
   Steps were taken to implement enhanced quality assurance management in relation to products made by external suppliers and to products manufactured and distributed throughout Toray Group globally.
- In response to a revision of Japan's Consumer Product Safety Law, Toray formulated Product Safety Accident Response Standards that address accident reporting mechanisms and other issues.

#### Commitment

#### Implementation Leader:

#### Akihiro Nikkaku

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Executive Vice President and Representative Director In charge of Product Safety and Quality Assurance Planning Department General Manager, Manufacturing Division Toray Industries, Inc.

Ensuring product safety and guaranteeing product quality are increasingly important to both society and business. To help achieve the highest standards, in December 2006 Toray established a Product Safety and Quality Assurance Planning Department and further strengthened the implementation systems centered on the Quality Assurance Departments in each business area. Toray continues to emphasize the "Quality" and "Customer-focus" watchwords that reflect the corporate image of Toray Group for the 21st Century.

#### **Product Safety and Quality Assurance**

Toray Group established a practical framework, under "AP-Innovation TORAY 21," to achieve the "Quality" and "Customer-focus" aspects of its corporate image for the 21st century in its long-term corporate vision. The Group is driving product safety and quality assurance in tandem, leveraging both.

#### **Quality Policy (revised June, 2007)**

We give top priority to the product quality offered to our customers as well as to safety and to the environment in our corporate activities. We work on quality assurance with the stance of "Customer First."

- 1. We make our best efforts to meet our customers' expectations with products and services of high satisfaction.
- We commit ourselves to abide by the "Quality First" principle, and to improve the quality and reliability of our products, in all our divisions, including sales, manufacturing and research and development.
- We meet quality requirements at the stage of design and development, and ensure and enhance these in the manufacturing process.
- We continuously strive to organize, maintain and improve our quality management system.

#### **Product Safety Management Basic Policy**

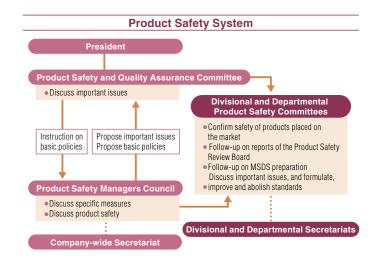
- 1. We shall place priority on the various measures required to ensure product safety.
- We shall conduct adequate safety evaluations prior to marketing a new product.
- For products already on the market, we shall take note of feedback from customers and the general public and always remain attentive to safety.

# Perfecting Systems in Support of Quality Assurance Activities

Under the Group-wide quality assurance system that Toray introduced in December 2006, the Product Safety and Quality Assurance Planning Department is responsible for developing the relevant policies and strategies for Toray Group. Individual business divisions' Quality Assurance Departments are responsible for ensuring that these policies and strategies are reflected in the Group's business activities. In FY 2007, Quality Assurance Control Regulations were established for all Group companies. The new regulations clarify the roles, responsibilities and authority in each business area. Quality assurance is now conducted on a business division basis, including for external suppliers and for imports that Toray resells etc., while the management of earlier quality assurance regulations was on a plant basis.

# **Ensuring Thorough Implementation of Product Safety Activities**

Toray's Product Safety System is set out in the chart on page 37. Based on product safety control regulations, the Product Safety Managers Council promotes and implements annual Group-wide product safety themes that are established by the Product Safety and Quality Assurance Committee.

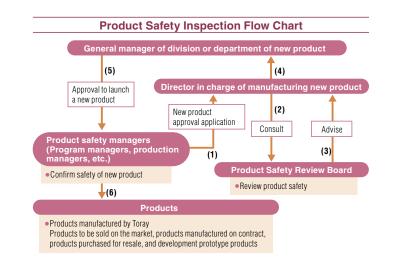


Each Divisional and Departmental Product Safety Committee further breaks down Group-wide product safety themes, based on the deliberations of the Product Safety Managers Council. Under this arrangement, issues for implementation are established by each relevant division and department every year, and the production, engineering and sales areas cooperate in efforts to thoroughly implement and improve product safety management.

To ensure that all Japanese and overseas subsidiaries and affiliates have the same safety management as Toray, they have adopted the same product safety control regulations. Relevant divisions and departments take the lead in providing support and guidance to improve the product safety level Group-wide. At Toray, newly appointed departmental and section managers are trained by the Product Safety and Quality Assurance Planning Department. At Japanese and overseas subsidiaries and affiliates, the divisions from Toray that supervise those subsidiaries and affiliates assist in providing training in product safety.

#### **New Product Safety Confirmation**

New product safety evaluations are undertaken by the director in charge of manufacturing the product. The evaluations include a safety check of the product, the Material Safety Data Sheets (MSDS), an examination of the instruction manual (including warning labels), the production of catalogs and other useful safety information sources for customers, as well as an assessment of the environmental impact of the product. When any doubts about



product safety are identified, a meeting of the Product Safety Review Board (consisting of a group of impartial experts from in and outside the company) is held, and the product must pass this review before launch. There are also follow-ups on safety after the product is delivered.

# Improving Responsiveness to the Latest Product Safety Information

Regulations are being strengthened to ensure provision of product safety information as stipulated by amendments to such legislation as Japan's Industrial Safety and Health Law, the Consumer Product Safety Law, and the Electrical Appliance and Material Safety Act. Taking on board the need to further the interests of consumers, in FY 2007 Toray subsidiaries and affiliates gave full effect to the operational implementation of product safety activities, and strove to formulate systems that would quickly prevent the spread of damage in the event of a product safety-related incident.

In pursuing a range of activities that provide products and services to consumers and other businesses, Toray Group's respect for the 8 basic consumer rights is fundamental in its dealings with customers. The Group strives to ensure product safety and quality by undertaking major programs and initiatives.

Toray Group has been improving its accessibility to users of its most popular consumer goods, by, for example, manning a toll-free product inquiry phone line in Japan.

#### **Acquiring Quality Assurance Certification**

In enhancing Toray Group's quality assurance framework, production plants of Toray have acquired quality assurance ISO 9001 certification. Japanese and overseas subsidiaries and affiliates are taking positive steps to obtain ISO 9001 certification. In FY 2007 Toray BASF PBT Resin Sdn. Berhad and Toray Jixiang Plastics (Suzhou) Co., Ltd. newly acquired certification.

As Toray Group manufactures a diverse range of products, various quality certifications are required to meet the individual characteristics of the respective products. For example, the production and sale of pharmaceuticals and medical products need GMP\*1 or ISO 13485,\*2 automotive applications need ISO/TS 16949\*3 and CFRP for use in aircraft require JIS Q 9100\*4 certification. Toray gains the relevant certification for each plant and industrial unit manufacturing these products.

- \*1 GMP: Good Manufacturing Practices for pharmaceutical production and quality control
- \*2: Quality management system standards for medical devices
- \*3: Quality management system standards for automotive applications
- \*4: Quality management system standards for aerospace applications

#### Toray Responds to a Product Safety Incident

In FY 2007 there was an incident where an electrically heated floor mat manufactured more than 20 years earlier overheated. The customer was not injured and the incident did not involve actual fire damage. However, Toray reported the matter to Japan's National Institute of Technology and Evaluation,

instituted a recall which also advised cessation of use, and posted a cessation of use advisory on the company's website.

Recall notice placed in the Nikkei Shimbun, May 14, 2008

# 5 Perform Risk Management

#### Action Program (FY 2007)

#### Led by the Risk Management Committee:

- 1. Undertake systematic risk reduction activities in each division, department, office and plant.
- Establish a Business Continuity Plan (BCP) for a major earthquake scenario, and systematically make provisions for facilities, for maintaining infrastructure, and for taking other measures required for the plan's implementation.
- Examine existing rules and establish new specific risk management operational rules to be applied for the entire Toray Group.

#### Action Program Results

- Risk Management Committees in each division, department, office and plant separately established important matters for which they should take action; they implemented risk reduction activities for each key risk area that they took up.
- As part of the BCP, Toray prepared a major earthquake response manual and an action guide card; these were distributed to all employees. Briefing sessions at conferences were held for security personnel. The introduction of the Secom Safety Confirmation Service provided by Secom Trust Systems Co., Ltd. was completed.
- 3. In response to the wide variety of risks faced by Toray Group, Toray commenced the formulation of a program for enterprise risk management, and made comprehensive evaluations of each type of risk.

#### Commitment

#### Implementation Leader:

#### Norihiko Saitou

Senior Vice President In charge of CSR

General Manager, Investor Relations Department, Corporate Communications Department, Internal Control Department, and Advertising Department

General Manager, General Administration & Legal Division

Forav Industries, Inc

There are a multitude of risks facing the company, and the risk management that is adopted in response is an important part of business management. In order to respond effectively to all kinds of risks, it is important to identify potential risks before the event, and to take appropriate preventative measures for risks that can be protected against. This minimizes the chances of events occurring, and reduces the impact of events that do occur. Risk management is an intrinsic part of the evolution of Toray Group, and we see it as our corporate responsibility to stakeholders. Toray Group continues to steadily pursue further development of its risk management activities.

#### **Promoting Risk Reduction Activities**

For Toray, risk management (the appropriate management of risk) is viewed as a fundamental pillar of corporate management. In January 2004 Toray established a set of "Crisis Management Regulations." By pinpointing potential risks in its operations, the company strives to proactively prevent and also reduce the effects of risk events in normal times. Toray also prepares and maintains emergency response plans to be deployed in the event of a major crisis.

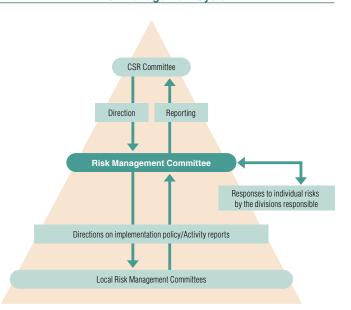
#### **Developing a Risk Management System**

Toray's risk management system is outlined in the diagram below. As a Company-wide management body, the Risk Management Committee has been established as an organization subordinate to the CSR Committee. The committee will routinely keep track of the risk management situation in all Group companies, and it is responsible for the integrated planning of Group-wide policies.

Each division, department, office and plant has also organized Risk Management Committees (which will be referred to as local Risk Management Committees) as organizations subordinate to the CSR Committee. Each of these committees ascertains the specific risks relevant to the particular business area or plant, and works to reduce risk in a planned manner, having established priority action areas. Each local committee is also engaged in proactive prevention activities.

Local Risk Management Committees report on their activities to the Company-wide Risk Management Committee, and a summary of the contents of these reports is then given to the higher level organization, the CSR Committee. The responsible division or department plays a central role in planning and implementing responses to individual risks.

#### **Risk Management System**



#### **Boosting Risk Management Activities**

As a matter of course, Toray undertakes routine risk reduction activities in each of its divisions, departments, offices and plants, and it responds to specific risks through such mechanisms as internal control systems, product

safety management and security trade administration. In addition, it promotes the Group-wide development of risk management systems: undertaking comprehensive analyses of all risks that could conceivably affect the company's operations and management; and preparing countermeasures.

In FY 2007, Toray carried out a survey of all categories of risk that the company faces. It identified risks that are yet to become overt, and made a comprehensive analysis of each risk type, using "likelihood of occurrence" and "degree of impact" as points for appraisal.

From a company-wide standpoint, Toray will now consider concrete countermeasures for each risk that has been identified as being key for the company, and will continue to seek to strengthen its risk management procedures.

#### **Crisis Management Systems**

Toray has established crisis management regulations which are clear fundamental principles that form the basis of company-wide responses should a major crisis occur, and the company works to ensure the thorough implementation of these regulations in a crisis.

In the event of a major crisis affecting the company's operations, the Emergency Quick Response System, as outlined in the chart below, will be put into effect. A Company-wide Emergency Headquarters will be set up, led by the Toray president, or a person nominated by the president. The Company-wide Emergency Headquarters will work closely with the Onsite Emergency Headquarters, undertaking a variety of activities aimed at preventing any further escalation of the crisis and at achieving a speedy return to normality.

The Company-wide Emergency Headquarters will be responsible for the provision of emergency information to relevant areas, both within and outside Toray, in accordance with the regulations.

Following the accident involving a burst vessel at the Mishima Plant in September 2007, the systems that were put in place in compliance with the "Crisis Management Regulations" functioned extremely effectively, and each responsible department was able to take speedy and appropriate countermeasures.

For more information on the accident at the Mishima plant, see page 35.

#### **Emergency Quick Response System** President Propose that President establish Emergency Headquarters Company-wide nergency Headquarte Sub chief Emergency Staff Officials responsible CSR Committee or Secretariats Risk Management Committee On-site Emergency First Report Emergency Headquarters of Supporting plants each company/country Reports from the division where emergency occurred/Media Reports Secretariats Notification to relevant divisions\*1

\*1: Notification will be conducted according to the Emergency Reporting Route for Significant Disasters, Environmental Accidents, and Other Crisis Outbreaks.

#### Implementing the BCP

Toray has established and is now implementing a BCP to respond to the scenario of a severe earthquake (upper 6 or above on the Japanese scale). Specifically, the company recognizes the need to make preparations on a regular basis for the early recommencement of (1) head office functions, (2) information systems and (3) production. Toray is also proceeding to put together business continuity measures to be applied in the event of an earthquake, as well as measures to increase the earthquake resistance of infrastructure

During FY 2007, a "Report on Anticipated Earthquake Damage" was prepared with respect to the company head office. This report assessed the expected damage to the head office building and the surrounding neighborhood, and based on that expected damage a "Major Earthquake Emergency Response Plan" was established, which systematizes the emergency measures that need to be taken, particularly in initial response.

As a means of supplementing procedures for ascertaining the safety of employees and their families in an emergency situation, a safety confirmation system that makes use of the Internet functionality of mobile phones and computers was introduced. In relation to key areas of head office functions, the priority sequence for transfer of those functions to alternative departments with responsibility for the relevant duties has been established. The results have been shared with the alternative departments, as set out in the Operations Manual.

Toray's computer systems in the Shiga Information Systems Center were further strengthened against earthquake, and emergency response drills were carried out.

Measures relating to production undertaken since 2002 include the strengthening of production plant buildings against earthquake, to protect lives and minimize the impact outside the company. This work has proceeded giving due consideration to the BCP in relation to key buildings such as those that house utilities. For new building projects, where production facilities will be used for key products, earthquake resistance design standards for withstanding an earthquake of upper 6 on the Japanese scale are used, exceeding previous design standards.



"Emergency Response Plan for Severe Earthquake," distributed in FY 2007 (Tokyo Head Office)



#### **Initiatives to Protect Personal Information**

Toray put in place a system for protecting personal information by introducing a set of Personal Information Management Regulations in March 2005, predating the enactment of Japan's Personal Information Protection Law in April of the same year.



For more information concerning "Initiatives to Protect Personal Information," please visit:



# Promote Dialogue with Stakeholders

#### Action Program (FY 2007)

Toray Group will review its corporate behavior: reforms will be implemented through the practice of CSR line activities that promote dialogue and cooperation with stakeholders.

#### **Action Program Results**

- Promotion of dialogue with stakeholders through the development of CSR line activities: The Group initiated CSR line activities at selected overseas subsidiaries and affiliates and initiated them at certain companies.
- 2. Dialogue with customers: The Group carried out customer surveys as part of the Corporate Brand Strengthening Project.
- Dialogue with employees: The Group carried out an employee survey as part of the Marketing and Sales Innovation Project and the Corporate Brand Strengthening Project. It also held IT-2010 Management Meetings between employees and executives.
- 4. In September 2007, Toray was included in the Dow Jones Sustainability World Index (DJSI World) for the first time. The company was also listed in the Carbon Disclosure Leadership Index (CDLI) in the Carbon Disclosure Project Report 2007 Japan.



#### Commitment

#### Implementation Leader

Norihiko Saitou Senior Vice President

Toray Industries, Inc.

In charge of CSR General Maneger,
Investor Relations Department, Corporate Communications Department,

Internal Control Department, and Advertising Department General Manager, General Administration & Legal Division

I think that dialogue with stakeholders is the foundation for the sustainable development of a company. Toray has been providing the right information at the right time to all stakeholders—customers, employees, stockholders, local communities and the global community, as well as doing its best to meet their expectations. I believe that this two-way communication should be the basis for our management actions.

#### **Toray Group Stakeholder Dialogue Aims**

# Basic Policies to Promote Dialogue with Stakeholders (adopted September 2005)

- Toray Group will promote dialogue and collaboration with all stakeholders, including customers, stockholders and investors, business partners, employees, government, local communities, NPOs, citizens, the global community and the media.
- Each company in Toray Group, through dialogue and collaboration with stakeholders, will take steps to carry out reforms designed to increase the satisfaction level of everyone.
- 3. All Toray Group employees, in their respective workplaces, shall create an environment conducive to implementing CSR activities. The thrust behind these activities is to enhance stakeholders' satisfaction.

Toray Group attaches utmost importance to dialogue with its stake-holders. Communication in all business activities is grounded on the Basic Policies to Promote Dialogue with Stakeholders.

Stakeholder dialogue is included as an important challenge in the various projects under the IT-2010 mid-term business strategies. To cite some examples, Toray carried out customer surveys as part of its Marketing and Sales Innovation Project, and the company looked into employee awareness and hosted management consultation meetings between executives and employees as part of the Corporate Brand Strengthening Project.

Toray Group places importance on implementing CSR activities at each work place. This is especially true in promoting dialogue with stakeholders. Through CSR line activities, promoted in Toray and affiliated companies, issues are identified at the workplace level, after considering requests from stakeholders, and are addressed proactively.

#### **Providing Information for Stakeholders**

Toray Group publishes a great deal of information on its website in order to promote communication with its many stakeholders; the website contains information about the company, research and development, investor relations, CSR activities, products and so on. All of this information is updated frequently, and each workplace develops its own tools for communication with stakeholders.

The following chart summarizes dialogue and collaboration between stakeholders and Toray Group. See the indicated

	page numbers for more specifi							ore specific examples.			
	Customers	Stockholders and investors	Business partners		Employees	Government	Local communities	NPOs	Citizens	Global community	Media
Basic stance	Create trust by listening to the voices of customers, through making products and providing services.	Provide accurate business information and ensure smooth communication.	Observe laws and regulations and consider impact on the environment, and promote openness and ensure fair trade.		Create ideal working conditions to match the diversifying employment patterns.	Cooperate and work to maintain a sound relationship.	Promote interaction with people living near plants, to explain its business practices and environmental activities.	Promote tie-ups with people in NPOs to advance mutual cooperation.	Share common perceptions with people who are indirect customers, by taking their wishes into account.	Work to expand global activities to create a better society.	Work for enhanced transparency in management by ensuring public accountability and playing its part in shaping public opinion.
Communication tools 1	Website     Press releases     Product pamphlets     Product descriptions     Material safety data sheet (MSDS)     Advertising	Website Financial Results Financial Report Business Report for Toray stockholders Annual Report	Website     Corporate Profile		Toray Navi intranet     Company magazine     PEOPLE (Japanese     Edition and English     Edition)	Website     Corporate Profile     CSR Report     Site Reports	Website Corporate Profile CSR Report Site Reports	Website Corporate Profile CSR Report	Website     Advertising     Corporate Profile     CSR Report	Press releases Website Corporate Profile CSR Report	Press releases Website Corporate Profile CSR Report
Communication opportunities	Marketing and sales activities     Consumer service representatives     p.37, p.42	General Stockholders Meetings Investor briefings IR activities  p.42	<ul><li>Purchasing activities</li><li>Surveys</li><li>Briefings</li><li>▶ p.33, p.52-53</li></ul>		Results briefings     IT-2010 Management     Meetings     Labor-management     consultation on     corporate management     p.23, p.42-43	Plant tours Producing and releasing various reports  p.35	Plant tours Meetings to exchange opinions with local community associations Volleyball class by Toray Arrows p.43	● Support NPO activities	Exhibitions, events      Inquiries page on the website	■ International conferences ■ Toray Science Foundation (Japan, ASEAN) ■ 1.55	• Press conferences • Press Interviews • Surveys
Reflect dialogue / Promote collaboration	■ Joint product development     ■ Create products and services that reflect dialogue with customers     ■ p.44-47	Regular reporting and study on opinions of stockholders and investors at the Board of Directors meetings     p.42	Joint operations and development     Green procurement and CSR procurement     p.52-53		Improve working conditions     Improve workplace environment     Labor regulations maintenance     p.50-51	Conclude individual agreements	Conclude individual agreements     Promote volunteer activities      p.43, p.55	● Participate in NPO activities  ▶ p.43	Develop products with the end-users in mind     Support academic and cultural activities     p.54-55	Develop products that contribute to society and the environment     Support academic and cultural activities     p.8-9, p.54-55	

#### Main Communication Methods



Plant tour for visiting government officials. (Ehime Plant)

Toray booth at the Environment Fair, Nomi City, Ishikawa. (Ishikawa Plant, Hokuriku Branch)





## Promote Dialogue with Stakeholders

#### **Communication with Customers**

As part of the Marketing and Sales Innovation Project, marketing and sales departments are putting many initiatives in place to promote a company with a customer focus.

In February 2008, Toray employed the services of an independent organization to carry out a customer survey. The questions were designed to assess the challenges involved in improving customer satisfaction levels. Topics ranged from sales activities such as sales call, offering suggestions to customers, business etiquette and polite manners to R&D and the corporate image. More than 70% of customers took part in the survey enabling the company to take on board many valuable points of view and requests. The survey results showed that company initiatives that focus on manners and etiquette were evaluated highly; however, the results also showed that there remain many issues to be addressed, including collaboration between marketing and sales activities and R&D activities. The points of view and requests resulting from this survey will be reflected in future end

eavors particularly in marketing and sales activities.



Essential business behavior training

#### **Communications with Stockholders and Investors**

#### **General Stockholders Meetings convenient** to Stockholders

For the convenience of its stockholders, Toray avoids holding Stockholders Meetings on the date when the majority of companies hold their Stockholders Meetings. Notices of General Stockholders Meetings are sent out as early as possible in order that all stockholders have enough time to consider the proposals——in FY 2007, the notice was sent out approximately 4 weeks prior to the date of the meeting.

#### **Communication through Briefings for Investors**

Toray hosts briefings for institutional investors and securities analysts on the same day that it announces its financial results. At these briefings the president and executive vice president provide an explanation of the current status of management. The briefings also offer an excellent opportunity for management to listen to the valuable opinions of investors and analysts directly. In addition, following the release of financial results, Toray holds a press conference and discloses detailed information to the mass-media, striving to ensure that information reaches stockholders and investors through the reportings.

Besides the financial results announcements, in order to promote deeper understanding of Toray Group, the company hosts business strategy briefings about individual business sectors, and also takes part in IR meetings for individual investors hosted by the various stock exchanges: The Group is working hard to facilitate communication through as many avenues as possible.

#### **Disclosure of Management and Business** Information on the Website

Toray posts financial results and related materials on the Investor Relations pages of the Toray website at the time they are released to the stock markets and mass-media. In addition on the website, the company also publishes the presentation materials disclosed at investors' briefings without delay. Furthermore, through measures such as promptly publishing these materials in English on the website, the company has been voluntarily disclosing information over and above that required by laws and regulations.

Clear, easy-to-understand information about the Group's management and business activities is provided in the "Toray Group Overview"

#### Reflecting the Voice of Stockholders and Investors in Management and Business Activities

The opinions of stockholders and investors gathered by the IR Department in the course of day-to-day communication are regularly reported to the Board of Directors. They are also discussed at company-wide Communications Committee, composed of members of the management, as the company endeavors to ensure the opinions of stockholders and investors are reflected in its management and business activities.

#### Major IR Activities in 2007

Activities	Attendees from Toray	Number of events	Approximate number of participants/instances
Briefings of business results announcements	President, executive vice president, executive in charge of finance and controller's division, executive in charge of investor relations	4	785
Briefings about individual business sectors for institutional investors	Directors of individual business divisions	2	257
Briefings for individual investors	General manager of the IR Department	3	310
Meetings and conference call with investors and analysts	Executive in charge of investor relations, Investor Relations Department staff	As required	784 instances

#### **Communication with Business Partners**

As a partner involved in joint business activities, the Group holds policy briefings with its business partners and carries out surveys of their CSR procurement, in addition to routine communication, as a way of deepening mutual understanding.



For more information about procurement and purchasing activities, see pages 52-53.

#### **Communication with Employees**

#### **IT-2010 Management Meetings**

Toray held IT-2010 Management Meetings as part of the Corporate Brand Strengthening Project under its "Innovation of business awareness" of IT-2010 mid-term business strategies. These meetings took place during March and April 2008, with more than 425 participants across 16 plants.

The aim of the meetings was to set up a forum for direct interaction between executives and employees to increase the latter's understanding and awareness of management issues, business innovations, and corporate culture through frank exchanges of opinions. The plants and offices were assigned to various directors, who then visited the places to relate their personal experiences as well as to elaborate on the proud corporate culture of Toray and other aspects, while linking these to the corporate brand. The meetings were then followed by a lively exchange of opinions on topics such as typical workplace issues, how to increase employees' motivation and how to strengthen the corporate brand.



(Shiga Plant

#### **Employee Awareness Survey**

Toray carried out an employee awareness survey in February 2008. The aim was to assess the extent to which employees have grasped the aims of the Corporate Brand Strengthening Project and the Marketing and Sales Innovation Project, and to gain an understanding of employees' sense of identity with the company and of their motivation; as these attitudes underpin both projects. Both these projects are part of the IT-2010. The response rate was around 90%, with generally positive indications of both motivation and sense of identity with the company. The results of the survey were reported back to employees in the com-

Going forward, regular employee awareness surveys will serve to make the above projects successful, as well as to invigorate communication within the company.

#### **Communication with NPOs**

Toray endorses the objectives of the Japan Women's Innovative Network (J-win), an NPO concerned with the advancement of women. The company has been involved with and supported the network's activities as a member since its foundation. Toray is also actively involved with the Japan Water Forum (JWF), an NPO concerned with issues regarding water resources both in Japan and overseas.

As the importance of NPOs as stakeholders in industry increases, Toray aims to build long-term and proactive communications with these bodies in the future.

#### **Communication with Local Communities**

Toray promotes positive interaction with local communities by hosting regular meetings with people living near its plants, through activities such as taking part in local festivals and in events hosted by the community, and by inviting local residents to take part in summer festivals held in the grounds

In addition, the company has been working to enhance cooperation with local government and local community associations at its offices and plants. For example, the agreement drawn up for the provision of a temporary evacuation area in the event of a major disaster at the Aichi Plant in FY 2007 is proof of the further strengthening of such ties.



Signing ceremony for agreement providing temporary refuge



Scene at the summe

#### **Communication with the Media**

The Corporate Communications Department serves as the interface between the company and various media organizations, providing the latter with publicity information. The department is working with a full understanding of the company's accountability for information disclosure, and the role it plays in shaping public opinion. Information disclosure means the active transmission of information, even when it might be sensitive or negative, based on Toray's Information Disclosure Principles.



For more information on Toray's Information Disclosure Principles, please visit: http://www.torav.com/csr/index.html

#### **Major Media Activities in 2007**

Press conferences	Press interviews given	Surveys conducted
196	529	400



# Step Up Environmental and Recycling Efforts

#### Action Program (FY 2007)

Toray Group will demonstrate consideration for environmental impact through the development and marketing of environmentally friendly products. The Group will establish and promote a plan to expand recycling activities, in order to realize its vision of the future.

#### Action Program Results

- Toray took the scandals surrounding certain Japanese companies falsifying the rates of recycled materials in their products as an opportunity to audit its own recycling processes. The company ensured that these are functioning well.
- 2. Polylactic acid (PLA) fibers were adopted as designated procurement items under the Green Purchasing Law.

#### Commitment

#### Implementation Leader: Chiaki Tanaka

Executive Vice President and Representative Director General Manager Technology Center

General Manager, Technology Center Toray Industries, Inc.

Damage to the environment is reaching a point of no return. To address this, Toray Group places management policies emphasizing the environment firmly at the center of all its business strategies. The Group is initiating Project EcoChallenge based on its Ecodream\* brand of environmentally friendly products and activities. With Project EcoChallenge the Group will offer advanced materials which have a reduced impact on the environment. It will also set long-term goals in this area, and work hard to attain the goals, both within the Group and in the global community.

# Pursuing Environmental Design to Create Environmentally Friendly Products

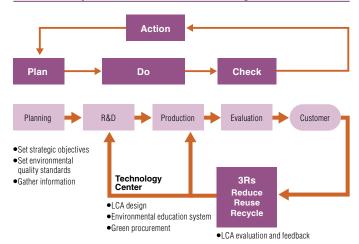
Toray Group pursues environmental design in order to develop environmental products. As the diagram below shows, Toray Group implements Life cycle assessment (LCA) methods, assessing the environmental impact at every stage from R&D and product design to production.

Before launching new products in the marketplace, the Group requires the relevant divisions to create an Environmental Assessment Checklist as part of the product safety review. Environmental data as well as product safety data are subject to review and verification before products are commercialized.



For more information on the Product Safety Review, see page 37.

#### **Toray Environmental Product Design Process**



#### **Approach to Environmentally Friendly Manufacturing**

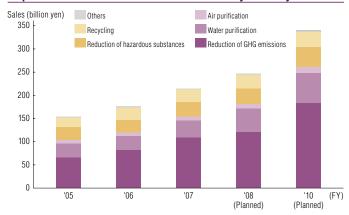
In line with Toray Group's vision of making a global contribution to conserving resources, protecting the environment and developing a sustainable, recycling-based society, Toray opened the Environmental Research Laboratory in 1991. Technologies and new products developed in this laboratory and new products are helping to reduce environmental impact. The Group is also developing environmentally friendly products, as well as recycled products and technologies, with a reduced environmental impact based on the concepts of "Clean" and "Less Energy."

# Increasing Production of Environmentally Friendly Products

As part of the Ecodream\* project to generate environmental products and activities, Toray Group conducted research and development into reducing the environmental impact through the conservation of resources and energy, environmental protection, recycling, and offering environmentally conscious products and technologies to society.

Toray Group has established a plan to more than double FY 2005 net sales of Toray Group's environmentally friendly products, including recycled products, around FY 2010. The company is looking forward to progress in this business.

#### Expansion Plan for Sales of Environmentally Friendly Products



#### **Project EcoChallenge Kick-off**

Toray Group is aware that, in order to make a robust response to global damage to the environment, all business strategies must have the environment firmly at heart. During FY 2007, within the Ecodream\* framework, Toray Group initiated Project EcoChallenge. This project comprises initiatives for developing innovative, environmentally friendly technologies aiming to create new business opportunities, and initiatives for developing technologies to reduce GHG emissions, using LCA as a frame of reference. The Group is putting all its effort into meeting these challenges.

# Toray Group Environmentally Friendly Products and Technology

Toray Group is working to develop and market products and technologies based on the concepts of "Clean" and "Less Energy," with goals such as the reduction of GHGs, environmental conservation and increased recycling.

#### **Environmentally Friendly Products**

Expecte	d results	Product
	Saving energy	Torayca*- Carbon fiber for use in transportation equipment, engineering plastics, capacitor films for hybrid cars
Reduction of GHGs	New energy	Components for wind turbine generators, components for fuel cells, films for solar cells
	Non- petrochemical materials	PLA (textiles, plastics, film), 3GT fibers (PTT: polytrimethylene terephthalate) & textiles, bamboo composite fibers, cellulose fibers, soy bean protein fibers, flexible heat-resistant films
	Water purification (water treatment)	RO membranes, UF/MF membranes, MBR submerged membranes, water treatment system businesses, Torayvino*
Environmental preservation	Air purification	Heat resistant bag filters (polyphenylene sulfide (PPS), polytetrafluoroethylene (PTFE) textiles), air filters
	Reduction of hazardous substances	Non-halogen fire retardants (fibers & textiles, plastics, films), waterless CTP (computer-to-plates) plates, non-halogen circuit materials, heavy-metal-free color filters
Recycling of materials	Recycling	Polyethylene terephthalate (PET), Nylon-6, polybuthyleneterephthalate (PBT), acrylonitrile butadiene-styrene (ABS), PPS, carbon fiber reinforced plastics (CFRP), dimethyl sulfoxide (DMSO)

#### **Products Contributing to the Reduction of GHGs**

Toray is working to develop and market non-petrochemical products in response to the need to use these materials in order to combat global warming and to conserve non-renewable resources. For example, the company developed plant-derived PLA, which is a renewable polymer and contributes to a reduction of GHGs. The eco-friendly material will be used in textiles and plastic goods and marketed under the Ecodear\* brand.

# Authorization of PLA as a Designated Procurement Item under the Green Purchasing Law

Following a cabinet decision in February 2008, synthetic fibers, including PLA fibers, made using plant-derived materials, and proven to have reduced environmental impact, were included for the first time in the criteria for designated procurement items under the Green Purchasing Laws\*1.

In line with these laws, Toray produced declarations of the environmental soundness of PLA fiber products and disclosed policies for procurement of raw materials and product design.

\*1: Law Concerning the Promotion of Procurement of Eco-friendly Goods and Services by the State and Other Entities

#### **Expanding the Usage of PLA Resin**

Toray regards PLA as the next key polymer and is developing a wide range of uses for polymer alloy technology and nanotechnology. Pioneer Corporation employs non-halogen, flame retardant PLA nano-alloy resin in the material for a part of its DVD drive casing (front panel). Toray has been working with NTT Advanced Technology Corporation, Memory-Tech Corporation and Arkhe Will Co., Ltd. on the development of heat resistant biomass CDs, and the companies have decided to use PLA nano-alloy resin. Furthermore, Toray has developed a plant fiber-reinforced PLA plastic with improved heat resistance, rigidity and moldability by compounding cellulose-based plant fibers with PLA. This resin has the world's highest heat-resistance for a resin of biomass origin; it is scheduled to be developed for use in automobile parts and for a wide range of other applications.

#### **Development of New Cellulose-based Fibers**

In addition to PLA, Toray is bringing out a new fiber called Foresse\*, recycled from biomass and manufactured using the world's first application of the melt spinning technique. As the manufacture of Foresse\* does not require organic solvents, which were essential for manufacturing conventional cellulose fibers, the environmental impact is low. With this process it is also possible to manufacture high performance fibers such as hollow Foresse\* received two awards: the Fiber Research Synthetic Fiber Award, in both the Grand Prix and the Technical Division in FY 2007.

# Step Up Environmental and Recycling Efforts

#### **Products Supporting Environmental Conservation**

Toray Group promotes the development of products that lead to a reduction, or an elimination of hazardous substances, such as those used for water purification, air purification, soil cleanup.

#### **Ultrasensitive DNA Chips Detect Microorganisms**

Toray and Matsushita Environmental and Air-conditioning Engineering Co., Ltd. (the current Panasonic Environmental Systems & Engineering Co., Ltd.) have developed ultrasensitive DNA chips for the detection of pollutant-degrading microorganisms. The DNA chips are a low-cost tool for soil and groundwater cleanup, with a low environmental impact. Toray developed the ultrasensitive DNA chip 3D-Gene\* making use of MEA's soil and groundwater cleanup data on effective microorganisms and original microarray technology; this made the product 100 times more sensitive than previous chips. It has the capability to detect and identify

22 types of VOC-degrading (volatile organic compounds) organisms simultaneously; furthermore it is able to detect micro VOC-degrading organisms in amounts which were not previously detectable.

Ultrasensitive DNA Chip for the detection of pollutant-degrading microorganisms



#### **Products Contributing to Recycling of Resources**

The basic principle underpinning Toray's recycling is "Less Energy." In line with policies put in place in FY 2004, Toray aims to achieve efficient recycling through the application of a wide variety of recycling technologies appropriate to the individual properties of the materials. In FY 2006, Toray formulated recycling goals for the entire Group for each category of material in order to boost recycling rates. A framework is essential for recycling resources; Toray is moving forward developing this with its customers.

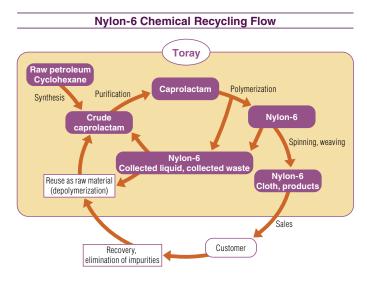
#### Recycling Activity Principles (adopted in March 2004)

- We shall design, produce, and sell products that reduce our impact on the environment.
- We shall purchase and use materials and products which will help reduce our impact on the environment.
- We shall disclose information related to recycling programs and recycled goods.
- 4. We shall voluntarily cooperate with customers to recycle or otherwise appropriately dispose of our products.

Recycling Vision			
Company-wide	Approach recycling based on the concept of "Less Energy"     Pursue sustainable recycling through partnerships with customers		
Fibers & Textiles recycling	Approach recycling based on the concepts of "Less Energy" and "Total Recycling"     Expand efforts through partnerships with users		
Plastic recycling	Approach recycling based on the concept of "Less Energy"     Focus on profitable material recycling using the life cycle inventory (LCI) technique		
Composite materials recycling	Demonstrate a pilot recycling plant as part of a national project     Lead the carbon fiber industry by establishing recycling methods		

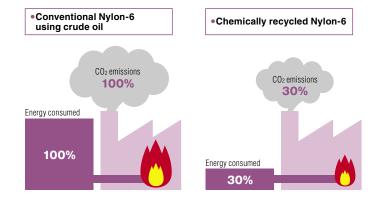
#### Fiber and Textile Recycling—Nylon-6

Chemical recycling of Nylon-6 by a collection cycle system uses the collected Nylon-6 products, turning them back to caprolactam material at Nagoya Plant facility, thereby reused as raw material for processing Nylon-6.



The production of Nylon-6 through chemical recycling uses approximately 30% of the energy used for virgin Nylon-6 produced from crude oil. Furthermore the amount of  $CO_2$  emitted in the former production process is approximately 30% of that emitted in the latter.

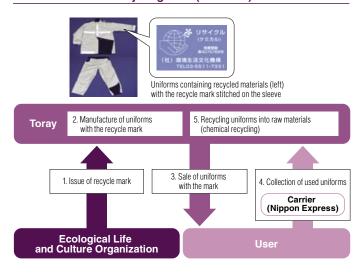
#### Comparison of Energy Consumed and CO<sub>2</sub> Emissions



In May FY 2007, Toray obtained "Wide-Area Certification\*2" from the Ministry of Environment in Japan. This is a special certification regulated as part of the Waste Management Law. Toray began full-scale development of recycled uniforms made with Nylon-6. Under the system, these uniforms are endorsed with the Ecological Life and Culture Organization's recycle mark, and are recovered and recycled after use via the Nippon Express Co., Ltd. logistics network.

\*2: A system whereby disposal and collection permits are not required by organizations who have the authorization of the Ministry of Environment in Japan to recover and recycle their own used products across multiple regions.

#### Recycling Flow (uniforms)



Toray formed an agreement with Patagonia Inc. in December 2007 to work together on creating a recycling system for materials in general clothing. In spring-summer 2008 the development of recyclable surfing pants began, and from fall-winter an alpine climbing jacket goes on sale in 2,000 stores in 12 countries. These products are part of the Common Thread Recycling Program developed by Patagonia. The products are stitched with the recycle mark, and when they are no longer used they can be returned to the Patagonia shop where they are collected as a valuable resource in exchange for a sticker.

#### Recycling Flow (general clothing)



#### Fiber Recycling—Polyester

As part of its collection and certification material recycling of polyester, Toray has teamed up with Ecolog Recycling Japan Co., Ltd. to recycle uniforms. Used polyester uniforms are recycled into ancillary materials such as hangers, buttons, fasteners, padding etc. at Ecolog.

#### Plastic Recycling

Toray commercially develops the recycling of plastics such as ABS, nylon, PBT, PET and PPS resins, and many other types of polymer through material recycling. Toray is aware that a total recycling system, including recovery, is crucial, and the company promotes this system in collaboration with customers.

In FY 2007, Toray launched full-scale recycling of materials from crossflow fans to fans for use in air conditioner units sited outdoors, in collaboration with Hitachi Appliances, Inc.

#### **Composite Materials Recycling**

It is expected that in future the volume of CFRP produced—and recycled—will increase in line with the expansion of production and operations. As a member of the Recycling Committee of the Japan Carbon Fiber Manufacturers Association, Toray encourages other CFRP manufacturers to engage in recycling initiatives as well.

In FY 2007, the recycling test plant constructed at Omuta City was completed, trial operations took place and it is scheduled to move into the verification test phase from FY 2008.

# CFRP Recovery Recovery Pulverization Pulverization Classification Thermal decomposition and CF recycling processes\*3 Milling\*4 Pelletization\*5 Recovery Pulverization Pelletization\*5 Reuse

- \*3: The pellets resulting from CFRP pulverization are subject to heat processes, carbon fibers (CF) are obtained by thermal decomposition of matrix resin.
- \*4: Recycled CF is pulverized in a pulverization machine, the resulting fiber is in the region of several hundred um in length.
- \*5: Milled carbon fibers and thermoplastic resins are melted down and mixed in an extrusion machine, then made into pellets.



# Secure and Train Personnel and Promote Human Rights

#### Action Program (FY 2007)

Toray Group will initiate Group-wide efforts in areas such as securing and training personnel, promoting human rights, diversifying employment, improving the workplace environment, balancing work and family life, and promoting the advancement of women.

#### Action Program Results

- Toray Group conducted a number of human rights educational programs, including the 2007 Human Rights Promotion Campaign.
- 2. The Group improved management systems aimed at hiring new graduates and people with work experience, enhancing the level of diversity of its human resources and strengthening staff training initiatives.
- 3. Toray was granted certification under the Phase 1 Action Plan to maintain compliance with Japan's Law for Measures to Support the Development of the Next Generation (Next Generation Law). The company then proceeded to commence activities in line with the Phase 2 Action Plan, and it reviewed and further boosted systems supporting a balance between work and family life.

#### Commitment

# Implementation Leader: Kiyoshi Fukuchi

Vice President General Manager, Personnel and Industrial Relations Division Toray Industries, Inc.

For Toray, as it aims to become the leading global player in the advanced materials industry, the key to success lies in the company's ability to secure, train and retain key employees who can thrive on the world stage. With this in mind, one of the company's guiding principles is "an emphasis on human resources."

Respecting each employee as a vital asset for the company, I personally commit myself to taking the lead in promoting various initiatives to create a happy, vibrant corporate group where all employees can find meaning in their work and where the corporate culture encourages taking on new challenges.

#### **Efforts to Promote Human Rights**

Toray Group believes that respect for human rights is a fundamental principle, essential to the management of the company. The Group therefore strives to promote and increase awareness of human rights issues, while prohibiting discrimination in any form based on factors such as race, creed, gender, academic background, nationality, religion or physical characteristics in the areas of recruiting, hiring, positioning, compensation, education and retirement. In addition, the Group respects international standards such as the United Nations Universal Declaration of Human Rights, the ILO Treaty and the United Nations Global Compact, prohibiting forced labor and child labor under any circumstances, and it complies with the laws and regulations of each country and region in which it operates.

#### **Human Rights Promotion System**

Toray has established a Human Rights Promotion Section in its Industrial Relations Department, as well as company-wide Human Rights Promotion Committees and such committees function at the office and plant level under the Corporate Ethics Committee. In addition, the company has appointed Human Rights Promotion Officers for each workplace; some 300 such officers dedicate themselves to making the work environment more pleasant and productive. For FY 2007, Toray focused on responding to revisions to the Equal Employment Opportunity Law and, given the diversification of types of employment, focused on promoting human rights for non-regular employees such as temporary and part-time workers.



#### Implementation of Human Rights Training Workshops

To help increase awareness and promote a clear understanding of human rights issues, Toray held training workshops and campaigns at both head offices and plants. Activity objectives in FY2007 were based on a campaign theme of developing all employees' awareness of human rights, increasing communication with others, and creating a cheerful workplace without discrimination or harassment. Activities were undertaken bearing in mind such

human rights issues as the elimination of sexual harassment, of bullying and power harassment, as well as achieving greater diversity in the workforce.

In an initiative to raise each employee's awareness of human rights issues Toray held training sessions for operational and administrative managers at each office and plant and conducted workshops in conjunction with workplace study groups. To take one example, in July 2007 Toray's Shiga Plant invited the Director of Equal Employment Opportunities from Shiga



Labour Bureau as a speaker for a Human Rights Seminar it held for managers. The 197 attendees gained a deeper appreciation of equal employment opportunities for men and women, of sexual harassment and of other issues.



Human Rights Seminar (Shiga Plant)

#### **FY 2007 Human Rights Training and Seminars**

Type of training	Number of sessions	Number of participants
Training at head office	9	600
Training held at offices and plants	1,310	30,573
Training at outside company	62	122

#### **Harassment Prevention**

Toray established Sexual Harassment Prevention Guidelines in 1999. When problems arise the company swiftly launches an investigation and takes firm steps both to help the victim and to prevent a reoccurrence. In addition to educating employees about sexual harassment through training seminars at each level of its organization, counseling services have been established and the Speak-Up Program (complaint box) has been adopted at every Toray office and plant. Toray also undertakes educational activities aimed at preventing power harassment.

#### **Developing Human Resources to Create New Value**

The development of human resources is one of Toray Group's most important managerial concerns. Toray Group conducts personnel training with three objectives: (1) the cultivation of fair-minded members of society who have high ethical standards and a sense of responsibility; (2) the training of professionals with advanced expertise, technical skills and originality; (3) and the cultivation of leaders with foresight and a sense of balance.

#### **Rational and Well-organized Training System**

The Toray Group employee education system represents a rational, systematic

approach to human resources responding to various needs in every field. The Group conducts many types of training for employees of all levels and in all areas to improve management performance, sales performance, production management skills, professional skills, and international operations. For example, the voluntary Challenge Training Program helps motivated employees develop their own talents while the Overseas Junior Training Program develops employees with a global mindset.

Beginning in FY 2007, as a way to strengthen the development of sales personnel, Toray began implementing a human resources training program based on consistent training objectives for a designated initial training period spanning the first 3 years at the company.

#### **Company-wide Training Course Enrollment**

Training Category	Persons enrolled
Management	946
Technical	769
Sales & Marketing	382
International	80
General	575
Total	2,752

#### **Early Leadership Development**

To promote unified management across Toray Group, courses at the Toray Management School designed to develop future executives have been held since 1991. These enable middle-ranking managers to gain the knowledge and skills that they need to become senior executives.

Toray is currently seeking to give section and unit managers coaching skills\*1 and to boost their problem-solving skills using logical thinking\*2.

The company has also established the Toray School of Technology and Business for training mid-level employees at plants. This initiative offers selected employees a year's full-time education in a live-in schooling environment.

In FY 2007, Toray also established a new higher-level management training program for managers and senior administrators.

- \*1: Communication skills designed to promote a greater degree of autonomous action by staff
- \*2: Skills and techniques that foster the detection and resolution of problems using coherent,

Personnel Development Objectives and Training Programs

Personnel Development Objectives and Training Programs						
Personnel development objective		Management	Technical	Sales & marketing	Global	
Management leaders		Executive training				
		Toray Management School Toray Group Management School			Toray Group Executive Seminar	
Leadership	Business area leaders	Section managers improvement training Common training of group leaders	Technological development leadership training	Sales leadership training	Toray Group Senior Management Seminar	
development		Cross-industry exchange program	Training organized by each division		ivianayement oemilläl	
Workplace leaders	Higher level management training Management supervisor training	Production management training Technical development leadership training for young employees	Sales skills improvement training	Toray Group Managers' Seminar		
		Toray School of Technology and Business Cross-industry exchange program	Training organized by each division and plant		Toray Group Supervisors' Seminar	
Professional development	Knowledge and skills shared across divisions	<self-education assistance=""> Challenge training program Correspondence education and company-sponsored external studies</self-education>	Patent training and technical seminars Management skill courses	Marketing strategy training Sales skills improvement training Sales practice courses	Business English Basic Overseas assignment training Overseas employment traineeship	
Developing re-	Knowledge and skills specific to each division	Training organized by each division and	plant			
sponsible mem- bers of society	Knowledge and skills shared across divisions	New employee training	Secondary technical training Primary technical training	Secondary sales training Primary sales training	Training in various languages	



# Secure and Train Personnel and Promote Human Rights

# A Personnel System that Prizes Employee Motivation and Accomplishment

Toray adopts the following personnel systems to create a dynamic organizational culture that encourages individuals who strive to explore new possibilities of ways to contribute to the company.

Toray's Personnel System			
Management-by-objectives system	Each employee establishes annual objectives under this system. At the end of the fiscal year, employees and their supervisors meet to review accomplishments and the extent to which they were able to meet their objectives.		
Personnel appraisal system	This system is designed to facilitate a fair appraisal of employee contributions in terms of duties, responsibilities, capabilities, and performance.		
Individual meeting system	Under this system, employees meet with their supervisors twice a year in a one-on-one setting. Supervisors work to develop their subordinates' skills and to ensure that the latter accept the validity of the evaluations.		
Self-assessment system (for managers, occupational specialists, and general staff)	This system gives employees an annual survey of topics concerning their work experience and desires concerning interdepartmental transfers, which are linked to individual personnel transfers.		
Career assessment system (for general staff)	Employees participate in a regular review consisting of presentations of daily operations and personnel interviews in order to focus on the direction of their future growth.		
Job opening system	The system gives employees an opportunity to apply for jobs inside the company, to develop their career proactively, and it ensures optimal assignments of staff.		
Bonus system for employee inventions	Toray revised this system in April 2005 to boost incentives from past levels in an effort to accelerate the creation of exceptional inventions.		

#### **Development and Promotion of Local Key Staff**

As a means of fostering globally oriented management, Toray Group encourages the development of human resources at overseas subsidiaries and affiliates, including the promotion of local employees to executive positions. This approach—localization of management personnel at overseas subsidiaries and affiliates—is one of the Group's key business challenges.

# Infrastructure for Developing and Promoting Local Personnel

Positions deemed critical for the global management of Toray Group have been classified into four levels based on a Group-wide common standard. Toray head office is working with overseas subsidiaries and affiliates to develop and promote local staff in these positions. These employees are known as National Core Staff.

For example, Toray has specified the Group-wide skill requirements and code of conduct expected of National Core Staff in the form of the Toray Global Competency Model. Based on this, the company pursues career development by creating individually focused long-term career development plans. To facilitate information sharing Toray also established the Toray Global Database, allowing employees worldwide to have access to the same information related to the company.

#### **Development and Training of Key Local Employees**

To ensure that key local employees are able to develop a strong appreciation of Toray's management philosophy and objectives, they participate in training programs in Japan; these are organized according to managerial rank. Overseas training plans are woven into the above-mentioned individually focused long-term career development plans.

In 2004 Toray commenced Toray Group Executive Seminars, through which the company is offering training in Japan for overseas executive-

level employees. Toray head office also takes initiative in conducting the training programs run in each country and region, and it strives to ensure thorough training and development of key local employees. From 2007, management training in local languages commenced in China, Thailand and Indonesia.



aining overseas local personnel

#### Training Courses held for Overseas Employees during FY 2007 (Toray Group)

Course	Seminar name	Number of trainees
	Toray Group Senior Management Seminar	22
Japan-based courses	Toray Group Managers' Seminar	20
	Toray Group Supervisors' Seminar	14
Courses held overseas	4th Europe Senior Management Seminar	14
	2nd U.S. Senior Management Seminar	18
	1st China Senior Management Seminar	18
	1st Thailand Management Seminar	28
	1st Indonesia Management Seminar	18

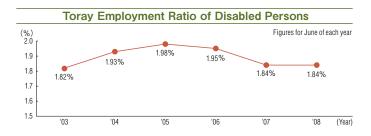


#### **Initiatives Encouraging Diversity in Employment**

Toray Group's approach to diversity in employment is one that gives full play to the individual talents of employees from many different backgrounds. The approach aims to create workplaces where everyone can perform their duties in a lively and enthusiastic manner.

#### **Employment of Disabled Persons**

Toray has taken seriously its social responsibility to employ disabled persons and has achieved the legally required employment ratio of 1.8%. Toray's initiatives to provide a work environment in which disabled individuals find it easy to perform their jobs encompass "hardware" steps such as providing barrier-free spaces, as well as "software" aspects such as training at the time of hiring and ensuring an appropriate working environment based on suggestions and requests from disabled employees.



#### **Reemployment System**

As part of its initiatives to encourage full utilization of the labor of individuals over age 60, Toray concluded a labor-management agreement for union members in 2001, and introduced a reemployment system of all employees who wish to continue working. The labor-management agreement concerning this reemployment system was revised in December 2005 to expand coverage to include employees in management and occupational specialist categories.

In November 2006 the company finalized plans to progressively increase the maximum age for reemployment and concluded a new labor-management agreement. As a result, the reemployment period will be extended to age 65 by April 2013. The company offers counseling to employees prior to reemployment.

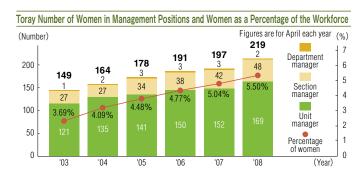
#### Mid-career Recruitment and Employment of International Students

Toray promotes the mid-career recruitment of experienced individuals with specialized knowledge and skills, and the employment of international students who have graduated from Japanese universities and Japanese students who have graduated from overseas universities. Company workplaces provide opportunities for these graduates to make the most of their skills and personal qualities.

# Creating an Organizational Culture Conducive to the Advancement of Women

Toray led Japanese industry when it appointed a female manager in 1958, and it introduced a childcare leave program in 1974, almost 20 years before it became law. In such ways the company has implemented measures that ensure the affirmative employment of women and offer women a work environment that meets women's needs.

Toray has continued to actively develop advancement systems for



women and to review existing systems. In 2003 a Toray affiliate appointed a woman as president. In 2004 Toray initiated its Advancement of Women Project, which makes it easier for women to create even more fulfilling careers. As a result of the ongoing implementation of such initiatives, the ratio of unit manager level positions or higher held by women continues to rise year by year, and in April 2008 it reached 5.5%.

# Toray Assists Employees Achieve a Balance between Work and Family Life

Toray is always seeking to further improve systems that can assist employees to achieve a good balance between work and family life. These systems serve as a foundation for a corporate culture conducive to the advancement of women, and also permit both men and women to choose from a wider variety of lifestyles. In particular, Toray provides support systems which go beyond those legally mandated, for childcare, family-care, and maternity protection, based on its commitment to make the systems as accessible as possible, and responsive to a diverse range of employee needs. Use of these systems by male employees is gradually spreading, and to date 7 men have taken advantage of the childcare leave program, but unfortunately none in FY 2007. In keeping with Toray's goal of encouraging employee utilization of these systems, the company provides information about new programs, as well as about program changes and benefits in internal newsletters and on the company intranet.

Toray is also working to implement initiatives that help keep in check long hours of work and work overload. An example of this is the introduction of a company-wide no overtime day. As a result of such initiatives, Toray was granted certification as a General Corporate Entity

Meeting the Requirements of the Phase 1 Action Plan to Maintain Compliance with Next Generation Law.

#### **Toray Utilization of Childcare and Family-care Leave Systems**

Fiscal Year	2003	2004	2005	2006	2007
Employees taking childcare leave	79 (0)	70 (0)	80 (4)	78 (3)	73 (0)
Employees taking family-care leave	2 (0)	2 (1)	4 (0)	3 (1)	4 (0)

Note: First-mentioned figures show the total number of employees commencing leave.
Figures in brackets refer to men.

#### Support Systems for Employees Balancing Work and Family Life (Main Changes in FY 2007)

Action	Description of changes	Before changes
Established new system to help employees pay for babysitter services. (From April 2007.)	The company signed a contract to give employees access to babysitter services at a discounted rate (employees can use services for 900 yen per hour, that typically cost individuals 2,000 yen per hour). Employees (male and female alike) are eligible to participate until the end of the fiscal year in which their children enter the third grade of elementary school.	-
Reviewed the system for registering employees seeking reemployment*3. (From April 2007.)	The registration period for reemployment was extended to 10 years. Reemployment as full-time employees is now available for some employees depending on the nature of their job, their desired role, and their personal circumstances.	The registration period had been 3 years, and compensation was limited to non-regular employee levels for 6 months, after which individuals could become full-time employees.
Enabled concurrent use of short-time work systems designed to give employees time off for childcare, family-care, and maternity protection with flextime systems. (From April 2007.)	All short-time and flextime work systems can now be used concurrently.	Employees were unable to use these systems in combination.
Extended period of employees' eligibility for childcare short-time work systems, flextime systems, overtime/holiday work limits, and night work limits. (From April 2007.)	The period of time over which employees are eligible for these systems was extended until the end of the fiscal year in which their children enter the third grade of elementary school.	These systems had been available only until children began elementary school.
Introduction of an infertility treatment support system (From July 2007.) Loan system introduced in October 2007.	Enables employees or their spouses to undergo infertility treatments under the following provisions:  1. Up to 30 half days leave (total 15 days) granted per year.  2. Special leave granted.  3. Up to 2 million yen as a loan (Toray Welfare Society).	-
Extended period of eligibility for leave to care for sick children. (From July 2007.)	Leave to care for sick children available until the end of March of the year in which children enter the third grade of elementary school.	These systems had been available only until children began elementary school.

<sup>\*3:</sup> This system provides reemployment opportunities for employees who must leave the company to get married, have children, care for children, care for sick or elderly family members, or accompany a spouse who has been transferred.



# Cooperate with Suppliers in their Environmental and Social Initiatives

#### Action Program (FY 2007)

Toray Group will increase the ratio of procurement and purchasing from suppliers that meet its CSR Procurement Partner Standards and make efforts to raise awareness and to improve the situation at suppliers that do not meet these standards.

#### Action Program Results

- 1. The Group implemented onsite monitoring for suppliers which do not meet CSR Procurement Partner Standards.
- 2. As a result of (1.) above, the Group accredited suppliers which showed evidence of efforts to raise their standards as new CSR Partners.

#### Commitment

#### Implementation Leader:

#### Kazuhiro Maruvama

Senior Vice President General Manager, Purchasing & Logistics Division Toray Industries. Inc.

A company's social responsibility requires consideration both across the range of corporate operations and throughout the entire value chain. Therefore, we believe that suppliers' CSR efforts, including environmental and social considerations, are important criteria for our decision to purchase raw materials. In the Purchasing & Logistics Division, our mission is to promote Group-wide CSR procurement.

#### **Toray Procurement and Purchasing Activities**

# **Basic Purchasing Policies and CSR Procurement Guidelines**

As a manufacturer of advanced materials, Toray supplies raw materials for finished products. This means that it is important for Toray's materials procurement and production facilities to be subject to upstream management that reflects the needs of our end users.

Toray needs to manage its overall supply chain in a way that promotes responsible corporate action. To this end, the company has drawn up and published a set of "CSR Procurement Guidelines" that prescribe the company's "Basic Purchasing Policies." In these guidelines, the company urges its suppliers to give due consideration to the environment, to obey the law and respect human rights, fulfilling their social responsibilities.

#### **Basic Purchasing Policies**

- Toray does its best to select suppliers and determine actual purchases fairly and on the basis of economic rationality, with consideration for price, quality, capability to provide stable supplies, technological capabilities, reliability, and other factors.
- 2. In selecting suppliers, Toray opens its doors to a wide range of companies inside and outside Japan. Toray does not rely solely on vendors it has existing or past relationships with, or on members of its corporate group.
- 3. In making purchases, Toray complies with relevant laws and regulations while taking environmental preservation and fulfilling corporate social responsibility (CSR) issues into account. Toray actively pursues green procurement and purchasing as part of its environmental efforts.
- 4. Toray works to maintain and improve the quality of purchased products through cooperation with its suppliers.
- Toray works to uphold its corporate social responsibilities on a company-wide basis.

#### **CSR Procurement Guidelines**

- 1. Establish an internal CSR organization and be committed to CSR
- 2. Work to enhance corporate ethics and comply fully with all laws and regulations
- Position safety, accident prevention, and environmental preservation as a management priority and practice green procurement and purchasing whenever and wherever possible
- Put crisis management systems into place, including capabilities for responding swiftly in unexpected situations, and disclose accurate information
- 5. Encourage dialogue and cooperation among all stakeholders
- 6. Ensure product safety as a precondition for supplying products
- Respect human rights, eliminate discrimination, and improve workplace environments; prohibit forced labor, slave labor, child labor, and unfair low-wage labor
- 8. Maintain the confidentiality of information and respect others' intellectual property rights

# **Surveys of Status of CSR Implementation and CSR Procurement Partners**

Toray asks its materials suppliers to fill out questionnaires in "Surveys of Status of CSR Implementation" that are designed to ascertain how well suppliers understand Toray's "CSR Procurement Guidelines" and how well they address environmental issues and respect laws and regulations. Suppliers whose responses reach or exceed a certain standard are registered as "CSR Procurement Partners." Separate follow-up with individual monitoring is undertaken for suppliers that still have room for improvement.

Toray is also considering ways of systematizing its CSR procurement activities and making them more efficient. These ways include the future development of a PDCA cycle, and the introduction of an electronic questionnaire.

#### **Initiatives with Distribution Partners**

#### **Enhancing Communication with Distribution Partners**

Toray has established the following "Basic Distribution Policies" and it is constantly engaged in efforts to reduce the environmental impact of product transportation and storage and to improve the quality of distribution services.

#### **Basic Distribution Policies**

- We shall select our transport and warehousing providers and determine individual agreements impartially and based on factors such as economic rationality with consideration given to price, quality, supply stability, technological capabilities, reliability, and efforts to reduce environmental impacts.
- We shall be open in selecting our transport and warehousing providers, rather than relying exclusively on companies with which we have done business in the past or companies affiliated with Toray Group.
- 3. We shall comply with relevant laws and regulations, consider environmental preservation, and fulfill our corporate social responsibilities in outsourcing our transport and warehousing operations.
- 4. We shall cooperate with our transport and warehousing providers in gauging and reducing the environmental impact of our transport and warehousing operations.

Toray regularly communicates with its distribution partners (transportation and warehousing providers) to obtain their cooperation in the implementation of these policies. In the first instance, the company holds Basic Distribution Policies Briefings for top managers from distribution partners early each year, where it strives to further their understanding of Toray distribution poli-

cies. Toray also frequently holds feedback meetings on themes such as "Improving the Quality of Transportation," and actively seeks to ensure a shared understanding of common problems with its partners.

Basic Distribution Policies Briefing

# 平成20年進 特定基本对針出版會 第230年月1日 第 13:00 ~ 17:00

#### A "Specified Consigner" under the revised Law Concerning the Rational Use of Energy

Toray encourages its distribution partners to obtain environmental management certification such as ISO14001, and other green management certifications. As a Specified Consigner defined by the Law Concerning the Rational Use of Energy, Toray is required to reduce CO<sub>2</sub> emissions by an annual rate of at least at 1% per unit energy consumption basis. However, Toray has announced a stricter target: reducing absolute CO<sub>2</sub> emission volumes by 5% by 2010 compared to 2006 levels, and it is undertaking a variety of initiatives outlined below. In FY 2007 these initiatives resulted in a 1,500 ton reduction in CO<sub>2</sub> emissions, an effective reduction of 1% over the previous year.

#### CO<sub>2</sub> Emissions Resulting from Toray's Distribution Activities



#### Effective 1,500 ton reduction in volume of CO<sub>2</sub> emissions

Breakdown of Reductions

Details of initiatives  Reduced transportation distance based on the use of regional ports, etc. for imports and exports  Reductions in packaging materials  200  Modal shift from trucks to shin-based transport		
etc. for imports and exports  Reductions in packaging materials  200	Details of initiatives	CO <sub>2</sub> Reduction (tons)
		600
Modal shift from trucks to shin-based transport	Reductions in packaging materials	200
model of the first tradition to only belong the tradition of the first tradition of the fir	Modal shift from trucks to ship-based transport	100
Expansion of shared transport arrangements with customers and suppliers 300		300
Use of larger vehicles and higher truck load ratios 300	Use of larger vehicles and higher truck load ratios	300

#### **Systemization of Packaging Collection**

The specialized packaging materials used by Toray, such as plastic film, are produced to conform to the 3R strategy of Reduce, Reuse and Recycle. To

increase the rate of collection and reuse of these materials, Toray undertakes activities to enhance the understanding and cooperation with customers. The company also developed a Packaging Collection Support System to sustain this initiative. Now that the system is up and running, Toray can easily calculate the volume of packaging materials that is being retained by third parties.



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Promotion pamphlet on recycling

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# 10 Pursue Social Initiatives

#### Action Program (FY 2007)

Toray Group will continue its program of social contribution activities in accordance with the Toray Group Social Initiative Policies, mainly through donations to the Toray Science Foundation. The Group will also support employee participation in volunteer activities.

#### Action Program Results

- The Group undertook social contribution activities, in accordance with Toray Group Social Initiative Policies, contributing funds of more than 1% of consolidated ordinary income.
- 2. The Group promoted participation by employees at each office and plant, and at subsidiaries and affiliates in volunteer activities such as cleanup campaigns at nearby rivers and roads and visits to social welfare facilities.

#### Commitment

## Implementation Leader Norihiko Saitou

Senior Vice President

In charge of CSR
General Manager, Investor Relations Department, Corporate Communications
Department, Internal Control Department, and Advertising Department
General Manager, General Administration & Legal Division

Toray Industries, Inc.

At Toray, all employees take steps to put the Corporate Philosophy into daily practice, and to contribute to society in a variety of ways. For example, Toray aims to engage in business activities that create a rich and sustainable global society. As a responsible corporate citizen, Toray is committed to ongoing activities that promote and support science and technology, sports, culture and the arts, as well as activities that foster future generations.

#### **Toray Group Social Contribution Activities**

Toray Group has always engaged in social contribution activities, particularly in providing financial support for science foundations both in Japan and overseas. The Group's work for society is "to establish ties and develop mutual trust as a responsible corporate citizen," as stated in the Corporate Mission.

As a member of the 1% Club formed by Nippon Keidanren (the Japan Business Federation) in 1990, Toray Group established Toray Group Social Initiative Policies designed to ensure the systematic development of social contribution activities in the future.

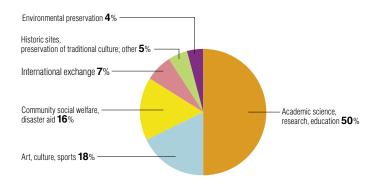
#### **Toray Group Social Initiative Policies (adopted May 2005)**

- 1. Based on its Corporate Philosophy of "Contributing to society through the creation of new value with innovative ideas, technologies, and products," we will contribute to sustainable development of local and global society as a good corporate citizen, while continuously supporting social initiatives among employees.
- We will pursue original programs dedicated to the improvement of social welfare in local communities, international exchange through traditional culture, sports promotion, and especially the advancement of science.
- Using company awards and other measures, we will create a culture that encourages employees to participate in society in constructive ways such as engaging in voluntary activities with an eye to local needs.
- 4. We will examine all marketing and advertising activities from the perspective of social contribution before finalizing them.
- 5. We will contribute funds amounting to about 1% of our consolidated ordinary income to social initiatives.

#### **Results of Social Contribution Activities in FY 2007**

In FY 2007, sustained implementation of social contribution activities at Toray Group generated a consolidated 960 million yen, or 1.1% of its consolidated ordinary income, in donations. Toray contributed 710 million yen, or 1.7% of non-consolidated ordinary income, in donations.

Principal activities included donations to the Toray Science Foundation and Toray Science Foundations in Malaysia, Thailand, and Indonesia, assistance for Mishima City in Shizuoka Prefecture, Japan where Toray Group provided water for irrigation, firefighting, and a water park.



#### **Promoting Science and Technology**

Established by Toray in 1960, Toray Science Foundation aims to assist and promote fundamental research in science and technology and to contribute to the improvement and development of science, technology, and culture. The institution has been a pioneer among private research assistance foundations and 2 of the winners of the Toray Science and Technology Prize have gone on to receive Nobel Prizes. The Toray Science Foundation contributes to the promotion of fundamental science and to science education including presenting the Toray Science and Technology Grant and the Toray Science Education Prize, and the foundation continues to receive high praise for the activities it undertakes.

## Principal Toray Science Foundation Activities

- 1. Toray Science and Technology Prize (2)
- Toray Science and Technology Grant
   Toray Science Education Prize (9)
- 4. Science Lecture Meetings

4. Science Lecture Meetings

(Figures in parentheses refer to number of award recipients in FY 2007.)



48th Toray Science and Technology Prize Presentation Ceremony

With the objective of assisting, promoting and expanding science and technology research in Asia, Toray established additional Toray Science Foundations in 3 ASEAN countries in 1993 and 1994. These foundations in Malaysia, Thailand, and Indonesia present the Science and Technology Award, the Science Education Award and the Science and Technology Research Grant



For more information on Toray's initiatives for promoting science and technology, please visit: http://www.toray.com/tsf/index.html

#### **Facility Visits and Cleanup Activities**

Volunteer activities at Toray plants, subsidiaries and affiliates included visits to neighborhood senior citizen homes and social welfare facilities to call

on residents and help with cleaning. Another way in which employees contribute to society is by participating in cleanup activities for roads and rivers near Toray plants and offices and at other similar events.

Cleaning the river near the Okazaki Plant



#### **Support for Culture and the Arts**

Toray is committed to promoting international exchange in arts and culture. Examples include providing support for the *L'art de Monet et sa postérité* exhibit held at the National Art Center, Tokyo (sponsored by the *Yomiuri Shimbun*), for the Quatuor Voce performance in Japan, and for performances in China (Nantong) and Japan by Orchestra Asia. Toray

continues to implement activities designed to keep traditional arts alive such as providing backing for performances of Youkiza, a type of marionette theater with a history of over 370 years.

Orchestra Asia performs in China (Nantong)



#### **Support for Local Communities through Sports and Events**

Toray contributes to local communities through sports. This includes holding volleyball classes led by the Toray Arrows, and judo and kendo classes taught by Toray employees in a number of different communities. The company also opens up its sports grounds, gymnasiums and other sports facilities to the public.

#### **Helping Nurture Future Generations**

Toray has been providing support for applied education to help elementary and junior high school students learn in an enjoyable way using the company's products and technologies. In FY2007, Toray held classes on 3 topics: the environment, education in functionality of clothes and laboratory science.

The environment class was conducted at Setagaya Ward Tamagawa Junior High School in Tokyo. It was a class offering opportunities for students to learn first-hand about environmental issues and about corporate approaches to addressing these issues, primarily through visiting the 9th Eco-Products 2007 exhibition.

Based on the theme "functionality in clothes and textile recycling," the clothing education class was offered at 4 elementary schools as part of the Designers Career Education Program implemented by the Sakai City Board of Education.

Offered at 3 elementary schools in Osaka Prefecture, the laboratory science class focused on fluid filtration experiments using hollow hydroprocessing membranes. The results of the experiments conducted in these classes were cited as examples on the pamphlets used by the Ministry of Economy, Trade and Industry's Laboratory Sciences Project.

Toray remains committed to contributing to foster future generations, by developing the classes and teaching materials that only a company such as Toray is able to offer.



Introducing textile functionality in the clothing education class

#### **Other Major Activities**

- Supported Science Camp, a hands-on science and technology program for high school students who intend to pursue careers in science (sponsored by the Japan Science and Technology Agency).
- Supported public master classes offered by such string quartets as the Vermeer Quartet and the Shanghai Quartet.
- Sponsored the 12th Toray Digital Creation Awards (a public contest for "Computer Pictures").
- Supported Japan Tent (sponsored by the Japan Tent Steering Committee), an event held in Ishikawa Prefecture that promotes exchange among students from around the world.
- Supported art programs such as Setagaya Public Theatre @ School, a joint program instituted by Setagaya Public Theatre in collaboration with schools.



Setagaya Public Theatre @ School



Science Camp 2007 (Shiga)

# Environmental Impact Overview

#### Toray **INPUT** Energy (1,000,000 gigajoules) Water (1,000,000 tons) 26.5 OUTPUT YoY (%) Greenhouse gases (10,000 tons CO<sub>2</sub>) 28 6 gases including CO<sub>2</sub> 224 -2.8 PRTR Law-specified substances (tons) 29 -9.7 Atmospheric emissions 279 27 25 -7.4 5.1 811 Waste transfers Air pollutants (tons) 30 SOx 2.613 1.610 -38.4 NOx 2.214 2.031 -8.3 Dust 174 106 -39.1 Industrial wastewater (1,000,000 tons) 185 187 1.1 BOD 1.271 1.112 -12.5 COD 940 895 -4.8 Nitrogen 748 687 -8.2 Phosphorus 40 40 0.0 Waste (1,000 tons) 31 Recycled 28.8 34.1 18.4 Incinerated and other 3.8 4.3 13.2 Direct landfill disposal 1.2 1.1 -8.3 57.6 60.6 -5.0 Recycled -38.5 Direct landfill disposal 0.8

INPUT				
Energy (1,000,000 gigajoules) Wa 35.4	ater (1,000,000 to 37	ons)	Raw mat	erials
OUTPUT	2006	2007	YoY (%)	Reference page
Greenhouse gases (10,000 tons CO <sub>2</sub> )				28
6 gases including CO <sub>2</sub>	163	190	16.6	
PRTR Law-specified substances (tons	s)			29
Atmospheric emissions	428	396	-7.5	
Water emissions	1	1	0.0	
Waste transfers	837	719	-14.1	
Air pollutants (tons)				30
SOx	2,103	1,635	-22.3	
NOx	1,625	1,432	-11.9	
Dust	482	343	-28.8	
Industrial wastewater (1,000,000 tons)	)			
	34	21	-37.1	
Water pollutants (tons)				30
BOD	361	309	-14.4	
COD	2,233	1,975	-11.5	
Nitrogen	-	-	-	
Phosphorus	-	-	-	
Waste (1,000 tons)				31
Recycled	12.7	15.5	22.0	
Incinerated and other	6.1	5.8	-4.9	
Direct landfill disposal	19.0	25.7	35.3	
Coal ash (1,000 tons)				
Recycled	10.6	14.8	39.6	
Direct landfill disposal	8.1	7.6	-6.2	

INPUT				
Energy (1,000,000 gigajoules) 3.5 Water	<b>(1,000,000 to</b>	ons)	Raw materials	
OUTPUT	2006	2007	YoY (%)	Referenc page
Greenhouse gases (10,000 tons CO <sub>2</sub> )				28
6 gases including CO <sub>2</sub>	39.6	42.9	8.3	
PRTR Law-specified substances (tons)				29
Atmospheric emissions	270	252	-6.7	
Water emissions	0	0	0.0	
Waste transfers	1,404	1,170	-16.7	
Air pollutants (tons)				30
SOx	19	30	57.9	
NOx	50	43	-14.0	
Dust	12	4	-66.7	
Industrial wastewater (1,000,000 tons)				
	12	14	16.7	
Water pollutants (tons)				30
BOD	73	59	-19.2	
COD	47	46	-2.1	
Nitrogen	17	18	5.9	
Phosphorus	1	1	0.0	
Waste (1,000 tons)				31
Recycled	22.3	16.0	-28.3	
Incinerated and other	5.2	6.5	25.0	
Direct landfill disposal	1.1	1.1	0.0	
Coal ash (1,000 tons)				
Recycled	-	-	-	
Direct landfill disposal	_	_		

#### The following are the totals for water pollutants.

Ioray	
BOD	All 12 plants and 1 research laboratory
COD*1	6 plants subject to Total Pollutant Load Control + 4 plants and 1 research laboratory
Nitrogen/phosphorus	All 12 plants and 1 research laboratory
Japanese subsid	iaries and affiliates
BOD	33 plants at 26 companies
COD*1	7 plants at 7 companies subject to Total Pollutant Load Control + 27 plants at 12 companies
Nitrogen/phosphorus	16 plants at 15 companies
Overseas subsid	iaries and affiliates
BOD	42 plants at 31 companies
COD*1	42 plants at 31 companies
Nitrogen/phosphorus	None
9	ay, Japanese subsidiaries and affiliates, and facilities in Korea a potassium permanganate method).

COD figures for other overseas subsidiaries and affiliates are given in CODcr (using the potassium dichromate method).

# Chemical Substance Emissions and Transfer Data

PRTR Law-specified substance emissions and transfer data for FY 2007

#### Toray

Tons (dioxins: mg-TFQ)

Ions (dioxins: mg-IEQ)				
Substance name	Atmospheric emissions	Water emissions	Soil emissions/ company landfill	Waste transfers
Methyl acrylate	0.3	0.5	0.0	0.0
Acrylonitrile	33.1	4.8	0.0	275.6
Acetaldehyde	6.6	0.0	0.0	0.0
Acetonitrile	0.0	0.0	0.0	1.0
Antimony and antimony compounds	0.0	0.0	0.0	0.4
Bisphenol-A type epoxy resin	0.0	0.0	0.0	30.6
Ethylbenzene	0.0	0.0	0.0	0.3
Ethylene glycol	0.7	0.0	0.0	120.7
Ethylene glycol monoethyl ether	3.4	0.1	0.0	0.5
ε-Caprolactam	0.3	15.6	0.0	27.5
Xylene	12.2	0.0	0.0	0.2
Chromium and chromium (III) compounds	0.0	0.0	0.0	1.7
Chlorobenzene	2.4	0.0	0.0	48.2
Chloroform	8.2	0.0	0.0	64.0
Cobalt and cobalt compounds	0.0	0.0	0.0	7.0
Inorganic cyanide	42.0	0.0	0.0	0.0
1,4-Dioxane	0.0	0.3	0.0	0.0
Diuron	0.0	0.0	0.0	2.1
p-Dichlorobenzene	3.1	0.0	0.0	0.8
Dichloromethane	2.3	0.0	0.0	6.0
N,N-dimethylformamide	24.0	0.0	0.0	26.9
Styrene	25.7	0.0	0.0	1.8
Terephthalic acid	0.0	0.0	0.0	65.0
Dimethyl terephthalate	0.0	0.0	0.0	4.2
Trichloroethylene	1.3	0.0	0.0	0.1
Toluene	3.5	0.0	0.0	53.3
Nitrobenzene	0.0	0.0	0.0	29.6
Pyridine	0.0	0.0	0.0	2.6
m-Phenylenediamine	0.0	3.2	0.0	0.0
Bromomethane	72.0	0.0	0.0	0.0
Benzene	0.5	0.6	0.0	0.0
Boron and boron compounds	0.0	0.0	0.0	8.8
Poly (oxyethylene) alkyl ether	1.5	0.0	0.0	0.4
Poly (oxyethylene) nonylphenyl ether	0.0	0.0	0.0	3.6
Manganese and manganese compounds	0.0	0.2	0.0	2.6
Maleic anhydride	0.0	0.0	0.0	0.1
Methyl methacrylate	9.1	0.0	0.0	25.0
Methyl-1,3-phenylene diisocyanate	0.0	0.0	0.0	0.4
Dioxins	3.4	33.8	0.0	129.1
Total	252	25	0	811
Note: Of Toray's 59 PRTR Law-specified sub	stances, emis	sions or transf	ers of the above 3	9 substance

#### exceeded 50 kg.

#### **Japanese Subsidiaries and Affiliates**

Tons (dioxins: mq-TEQ)

Ions (dioxins: mg-IEQ)				
Substance name	Atmospheric emissions	Water emissions	Soil emissions/ company landfill	Waste transfers
Acetonitrile	0.0	0.0	0.0	11.2
2-aminoethanol	0.0	0.0	0.0	93.8
1-Allyloxy-2,3-epoxy propane	0.0	0.0	0.0	0.6
Linear alkylbenzene sulfonate and linear alkylbenzene sulfonate salts	0.0	0.0	0.0	0.2
Ethylbenzene	6.3	0.0	0.0	2.6
Ethylene oxide	0.8	0.0	0.0	0.0
Ethylene glycol	0.0	0.0	0.0	7.7
Ethylene glycol monoethyl ether	4.9	0.0	0.0	0.3
Ethylene glycol monomethyl ether	0.0	0.0	0.0	0.9
Epichlorohydrin	0.0	0.0	0.0	13.9
Xylene	39.6	0.0	0.0	27.1
Chlorobenzene	0.3	0.0	0.0	9.1
2-Ethoxyethyl Acetate	0.0	0.0	0.0	0.7
1,3-Dichloro-2-propanol	0.0	0.0	0.0	16.3
Dichloromethane	3.9	0.0	0.0	22.2
N,N-dimethylformamide	32.1	0.0	0.0	246.7
Styrene	0.0	0.0	0.0	0.3
Decabromodiphenyl ether	0.0	0.0	0.0	0.1
Toluene	157.5	0.0	0.0	658.3
Carbon disulfide	1.4	0.0	0.0	0.0
Hydroquinone	0.0	0.0	0.0	0.3
Bis (2-ethylhexyl) phthalate	0.0	0.0	0.0	2.1
Hexamethylene di-isocyanate	0.0	0.0	0.0	0.1
Poly (oxyethylene) alkyl ether	0.0	0.0	0.0	39.0
Poly (oxyethylene) octylphenyl ether	0.0	0.0	0.0	0.2
Formaldehyde	0.1	0.0	0.0	1.2
Methacrylic acid	0.0	0.0	0.0	2.4
Methyl methacrylate	0.2	0.0	0.0	0.0
3-Methylpyridine	4.8	0.0	0.0	11.3
α-Methyl styrene	0.0	0.0	0.0	0.5
Molybdenum and molybdenum compounds	0.0	0.0	0.0	0.7
Dioxins	7.1	0.0	0.0	0.3
Total	252	0	0	1,170
Note: Of Japanese subsidiaries and affili			fied substances,	emissions o

transfers of the above 32 substances exceeded 50 kg.

# Sites with ISO 14001 Certification

(As of March 2008) Names in red indicate companies or plants that first obtained certification in FY 2007

#### Toray: All 12 plants

Shiga, Seta, Ehime, Nagoya, Tokai, Aichi, Okazaki, Mishima, Chiba, Tsuchiura,

#### Japanese subsidiaries and affiliates: 34 plants at 19 companies\*

Du Pont-Toray Co., Ltd., Opelontex Co., Ltd., Toray Textiles, Inc. Toray Coatex Co., Ltd. [Kyoto, chemical products], Toray Monofilament Co., Ltd. Toyo Tire Cord Co., Ltd., Toyo Plastic Seiko Co., Ltd. [Mishima, Koriyama] Toray PEF Products Inc. [Konan, Tsukuba]

Toray Advanced Film Co., Ltd. [Mishima, Takatsuki, Fukushima, Nakatsugawa] Dow Corning Toray Co., Ltd. [Chiba, Fukui, Yamakita, Komatsu] Toray Fine Chemicals Co., Ltd. [Moriyama, Matsuyama, Tokai, Chiba] Toray Engineering Co., Ltd. [Numazu]

Soda Aromatic Co., Ltd. [Noda, Koriyama, Okayama Chemicals]

Toray ACF Co., Ltd. [Fhime, Fukushima]

Suido Kiko Kaisha, Ltd., Ichimura Sangyo Co., Ltd., Toray International, Inc., Chori Co., Ltd. Toray Medical Co., Ltd.

# Overseas subsidiaries and affiliates: 30 plants at 25 companies

USA	Toray Plastics (America), Inc. [Rhode Island, Virginia] Toray Resin Co. Toray Fluorofibers (America), Inc.
UK	Toray Textiles Europe Ltd.
France	Toray Plastics Europe S.A.S.
Italy	Alcantara S.p.A.
Czech Republic	Toray Textiles Central Europe s.r.o.
Indonesia	P.T. Century Textile Industry Tbk, P.T. Easterntex, P.T. Indonesia Toray Synthetics
Thailand	Thai Toray Textile Mills Public Company Limited Thai Toray Synthetics Co., Ltd. [Bangkok, Ayutthaya] Luckytex (Thailand) Public Company Limited [Mill. 2]
Malaysia	Penfibre Sdn. Berhad [Mill. 3] Penfabric Sdn. Berhad [Mill. 1, Mill. 3, Mill. 4] Toray Plastics (Malaysia) Sdn. Berhad
China	Toray Fibers (Nantong) Co., Ltd., Toray Sakai Weaving & Dyeing (Nantong) Co., Ltd., Toray Plastics (Shenzhen) Ltd., Toray Film Products (Zhongshan) Ltd., Toray Sanko Precision (Zhongshan) Ltd., Toray Jixiang Plastics (SuZhou) Co., Ltd., Toray Fibers & Textiles Research Laboratories (China) Co., Ltd. [Nantong, Shanghai]

South Korea Toray Saehan Inc., STECO, Ltd.

<sup>\*2:</sup> In addition, 12 companies received certification as affiliated companies on Toray sites

# Environmental Data for 12 Toray Plants and Principal Subsidiaries and Affiliates

				Siga Plant	Seta Plant	Ehime Plant	Nagoya Plant
	Item		Unit	Emission volume	Emission volume	Emission volume	Emission volume
Greenhous	e gas emissi	ons	10,000 tons CO2/year	11.4	0.6	51.2	22.1
		Air	tons/year	3	0	76	18
PRTR	Emissions	Water	tons/year	0	0	9	0
PHIH		Soil & landfill	tons/year	0	0	0	0
	Waste trans	sfers	tons/year	92	0	437	108
	SOx		tons/year	60	0	693	6
Gas emissions	NOx		tons/year	64	1	729	303
	Dust		tons/year	1	0	47	9
Water	BOD		tons/year	135	1	102	381
emissions	COD		tons/year	110	1	144	242
Wastewater	ſ		million m³/year	28.9	0.6	36.4	32.2
	Recycled		tons/year	3,656	136	9,133	4,176
Waste	Simple incine	ration and other	tons/year	567	0.3	93	2,600
	Landfill dis	posal	tons/year	7	0	25	429
Principal manufactured products			Ecsaine* man-made suede Lumirror* polyester film TOPTICAL* color filter Electronics & information materials	Toraylon* blended yarn Medical products (Inoue balloon catheters and Anthrone* P-U catheters)	Tetoron* staple fiber Torayca* carbon fiber Toraycon* PBT resin Romembra* reverse osmosis membrane-module	Amilan* nylon resin Toraycon* PBT resin Gypsum Various fine chemicals	

				Tokai Plant	Aichi Plant	Okazaki Plant	Mishima Plant
	Item		Unit	Emission volume	Emission volume	Emission volume	Emission volume
Greenhouse	gas emissio	ons	10,000 tons CO2/year	77.7	3.5	13.8	19.4
		Air	tons/year	79	0	23	4
	Emissions	Water	tons/year	16	0	0	0
PRTR		Soil & landfill	tons/year	0	0	0	0
,	Waste trans	sfers	tons/year	67	23	35	38
:	SOx		tons/year	21	18	159	106
Gas emissions	NOx		tons/year	361	25	45	233
	Dust		tons/year	10	1	16	4
Water	BOD		tons/year	369	5	38	55
emissions	COD		tons/year	373	-	52	46
Wastewater			million m³/year	17.9	2.1	7.1	37.0
ı	Recycled		tons/year	4,944	201	5,112	1,384
Waste	Simple incine	ration and other	tons/year	808	2	0	96
	Landfill dis <sub>l</sub>	posal	tons/year	522	13	14	47
Principal manufactured products			Caprolactam Terephthalic acid Tetoron* chips Torelina* PPS resin	Nylon filament yarn Raytela* plastic optical fiber	Nylon filament yarn Filtryzer* artificial kidney Toray Waterless Plate* printing plate Torayvino* home water purifier	Tetoron* filament yarn Dorner* (Oral Administration Prostacyclin [PGI2] Derivative) Feron* natural interferon -β preparation Lumirror* polyester film	

				Chiba Plant	Tsuchiura Plant	Gifu Plant	Ishikawa Plant
	Item		Unit	Emission volume	Emission volume	Emission volume	Emission volume
Greenhous	e gas emissi	ons	10,000 tons CO2/year	2.4	3.6	10.6	6.1
		Air	tons/year	48	0	3	0
PRTR	Emissions	Water	tons/year	0	0	0	0
PRIK		Soil & landfill	tons/year	0	0	0	0
	Waste trans	sfers	tons/year	4	0	5	0
	SOx		tons/year	0	0	423	122
Gas emissions	NOx		tons/year	13	0	58	192
	Dust		tons/year	0	0	3	15
Water	BOD		tons/year	7	0	9	9
emissions	COD		tons/year	77	-	7	7
Wastewate	r		million m³/year	4.4	0.3	11.0	9.4
	Recycled		tons/year	4,037	99	882	182
Waste	Simple incine	ration and other	tons/year	88	0	0	0
	Landfill dis	posal	tons/year	12	0	2	8
Principal m	nanufactured	products		Toyolac* ABS resin	Torayfan* BO polypropylene film	Ecsaine* man-made suede Lumirror* polyester film Torelina* PPS film	Tetoron* filament yarn Nylon filament yarn

				Toyo Tire Cord Co., Ltd.	Toray Advanced Film (Mishima)	Penfabric (Mill. 4)	Toray Plastics Europe
	Item		Unit	Emission volume	Emission volume	Emission volume	Emission volume
Greenhous	e gas emissi	ons	10,000 tons CO2/year	1.6	0.6	3.1	3.0*3
		Air	tons/year	2	20	0	0
PRTR	Emissions	Water	tons/year	0	0	0	0
PRIK		Soil & landfill	tons/year	0	0	0	0
	Waste trans	fers	tons/year	0	71	0	0
	SOx		tons/year	0	0	0	0
Gas emissions	NOx		tons/year	10	2	0	33
	Dust		tons/year	0	0	1	0
Water	BOD		tons/year	2	1	40	-
emissions	COD		tons/year	3	0	499	26
Wastewate	r		million m³/year	0.9	0.3	2.2	3.8
	Recycled		tons/year	142	555	1,312	712
Waste	Simple incine	ration and other	tons/year	12	20	405	657
	Landfill dis	posal	tons/year	0	13	399	716
Principal manufactured products			Tire cord Carpet pile fiber	Torayfan* (polypropylene film) Metaloyal* (2-layer FPC) Cerapeel* (release film)	Polyester-cotton blend textile	Lumirror* (polyester film)	

eporting values based on EU-ETS

#### The Environment and Social Responsibility

#### Toray

Receiving Award for Excellent Energy Management in Factories

Toray Ehime Plant received the Award for Excellent Energy Management in Factories in recognition of progress and achievements in energy management.



Receiving award from Ministry of Health, Labour and Welfare for a long-standing blood donation campaign

Toray Ishikawa Plant was given an award by the Ministry of Health, Labour and Welfare in recognition of the excellent results of their blood donation campaign, which has spanned the 30 years since the plant started operation.



Awarding institution	Commendation	Recipient company, plant
The Energy Conservation Center, Japan	Ministry of Ecology, Trade and Industry Award for Excellent Energy Management in Factories	Ehime Plant
Ministry of Health, Labour and Welfare	Minstry of Health, Labour and Welfare Award at the 43rd National Convention for Promotion of Blood Donation	Ishikawa Plant
Ministry of Education, Culture, Sports, Science and Technology Research Promotion Bureau	Award for Innovative Contribution (Science and Technology Award by Minister ECSST)	Shiga Plant
Otsu Chamber of Commerce and Industry	Award for long and excellent service by employees	Shiga Plant
Ministry of the Environment, Sumitomo Mitsui Banking Corporation, Environmental Businesswomen	Environmental Business Award: "eco japan cup 2007"	Torayca and Advanced Composites Division
Japanesque Modern Committee	Toray's Sandproof* swimwear fabric and Toraysee* cleaning cloth both selected for the Japanesque Modern top 100	Toray
Japan Industrial Design Promotion Organization	Good Design Award	Torayvino Sales and Marketing Department

#### Japanese Subsidiaries and Affiliates

Receiving Fire and
Disaster Management Agency Commissioner's Award for
Excellent Management of Hazardous Materials

Toray ACE Ehime Plant received the Fire and Disaster Management Agency Commissioner's Award for Excellent Management of Hazardous Materials in recognition of their safety measures for hazardous materials and facilities, and perfect safety record, having experienced no accidents in the 10 years since establishment.



Award from the Director of the Ministry of Health, Labour and Welfare, Labour Standards Bureau

Toray Engineering received an award from the Director of the Ministry of Health, Labour and Welfare, Labour Standards Bureau for the completion of works (total 13) with no accidents throughout the full terms of the various works and projects.



Awarding institution	Commendation	Recipient company, plant
Commissioner of Fire and Disaster Management Agency	Fire and Disaster Management Agency Commissioner's Award for Excellent Management of Hazardous Materials	Toray ACE Co., Ltd.
Director-General of the Social Insurance Agency	Award (Cooperation with welfare and pensions)	Toray Monofilament Co., Ltd.
Japan Food Hygiene Association	Excellent Food Hygiene Facilities	Soda Aromatic Co., Ltd. (Noda)
Director of the Ministry of Health, Labour and Welfare, Labour Standards Bureau	Completion of works with no accidents throughout the full term (13 in total)	Toray Engineering Co., Ltd.

#### **Overseas Subsidiaries and Affiliates**

Receiving Chinese Chemical Fiber Industry's Environmentally Friendly Enterprise Award

Toray Fibers (Nantong) was awarded the Chinese Chemical Fiber Industry's Environmentally Friendly Enterprise Award by the China Chemical Fiber Association.



#### Receiving Presidential Award

STECO was awarded the Presidential Award in Production Innovation at the National Quality Management Convention.



Awarding institution	Commendation	Recipient company, plant
Ministry of Labor and Social Welfare, Thailand	Award for Excellence in Safety, Occupational Health and Work Environment, Thailand.	Thai Toray Textile Mills Public Company Limited Luckytex (Thailand) Public Company Limited (Mill-1, Mill-2, and Mill-3) Thai Toray Synthetics Co., Ltd. (Bangkok, Ayutthaya, Nakhon Pathom)
Ministry of Labor and Social Welfare, Thailand	Award for Excellence in Labor Relations and Labor Welfare, Thailand	Luckytex (Thailand) Public Company Limited (Mill-1, Mill-2, and Mill-3)
China Chemical Fiber Association	Chinese Chemical Fiber Industry's Environmentally Friendly Enterprise Award	Toray Fibers (Nantong) Co., Ltd.
Nantong City Environmental Protection Committee, China	Green Enterprise	Toray Fibers (Nantong) Co., Ltd.
Korea Management Association (Consulting Category Received at Korea Productivity Award)	Korea Green Management Excellence Awards	Toray Saehan Inc.
Ministry of Commerce, Industry and Energy, Korea	Presidential Award in Production Innovation at the National Quality Management Convention	STECO, Ltd.

## **Research and Technical Development**

#### Receiving the Okochi Memorial Production Prize

Toray was awarded the Okochi Memorial Production Prize in recognition of its successes in the development and mass production of the world's first High-Performance Reflective Polyester Film for LCD backlights through the combination of Toray's unique polymer alloy technology and precision stretch technology.



# Receiving the Nikkei BP Technology Award for Ecology Division

Toray was awarded the Nikkei BP Technology Award for Ecology Division for its Innovative Short Cycle RTM Process for Carbon Fiber Reinforced Plastics Automohile Parts



Awarding institution	Commendation	Matters for Commendation
Okochi Memorial Foundation	The 54th Okochi Memorial Production Prize	Development of High-Performance Reflective Polyester Film for LCD Backlight
The Society of Chemical Engineers, Japan	2007 The Technology Award of the Society of Chemical Engineers, Japan	Development of PVDF hollow fiber membrane module and membrane filtration process.
The Japan Society of Polymer Processing	The 17th The Best Technology Award	Biaxially Oriented PET Film with Excellent Formability and Surface Properties
The Japanese Society of Printing Science and Technology	The 33rd Technology Award of The Japanese Society of Printing Science and Technology	Development of Environmentally Friendly Waterless CTP Plate
SENKEN-SHIMBUN Co., LTD	The 38th Fiber Research Synthetic Fiber Award, in both the Grand Prix and the Technical Division	Technical development of melt-spun cellulosic fiber Foresse*
Nikkei Business Publications, Inc.	2008 Nikkei BP Technology Award for Ecology Division	The Innovative Short Cycle RTM Process for Carbon Fiber Reinforced Plastics Automobile Parts
SAMPE (Society for the Advancement of Material and Process Engineering) Japan	The Award of SAMPE Japan	The Innovative Simulation Technologies of Short Cycle RTM Process for CFRP Automobile Parts
The Japan Society of Mechanical Engineers	JSME Medal for New Technology	Development of crush analysis method for automotive composite hood
The Japan Society of Mechanical Engineers	JSME Medal for New Technology	Development of yarn winder technique for improvement of yarn winding speed

# Evaluation by Socially Responsible Investment (SRI) Indexes and other SRI-related organizations

An SRI index is constructed from stocks in companies that exceed evaluations for certain specified standards for CSR activities. The companies providing these indexes independently select index components and calculate the indexes based on publically available data and questionnaire surveys. Individual SRI funds determine the components of their fund portfolios based on these SRI indexes and on their own investigation. In September 2007, Toray was selected as an index component of the Dow Jones Sustainability World Index.

In addition, Toray was listed in Carbon Disclosure Leadership Index (CDLI) in the Carbon Disclosure Project Report 2007 Japan, published by the Carbon Disclosure Project in 2007. The Carbon Disclosure Project was established as an NPO representing institutional investors in order to promote an ongoing dialogue between stockholders and corporations in relation to climate change, which impacts on corporate value and corporate activities.

As of June 2008, Toray was included in the SRI indexes at right.



The Dow Jones Sustainability World Index comprises more than 300 companies around the world that represent the top 10% of leading companies committed to sustainability.



The Morningstar Socially Responsible Investment Index (MS-SRI), tracks the share performance of 150 selected Japanese companies based on their commitment to CSR. It is the first such index in Japan.



The KLD Global Climate 100SM Index is made up of companies that are leaders in providing solutions to global warming and offsetting its long-term effects.

# Third Party Opinion from an Academic

#### Anticipating great improvements through understanding management issues and corporate governance

The Sustainable Management Forum of Japan has been engaged in the rating, diagnosis and evaluation of businesses from the point of view of sustainable management. The Forum rates Toray's activities highly for its special efforts in the following three areas:

- Clearly positioning CSR activities as a means of putting its Corporate Philosophy into practice, then deeply examining the issues the company faces
- 2. "CSR guideline activities" are carried out through the PDCA cycle at the management level.
- 3. Issues are addressed by "CSR line activities" by all employees at the workplace level. Toray implements these activities in parallel with CSR guideline activities.

The present CSR Report explains these matters in an orderly and easily comprehensible manner.

I expect to see Toray Group achieve even more, as a strong corporation possessing an open corporate culture, 1) by having the 39,000 employees in its about 240 companies in Japan and abroad face urgent management issues, including the worsening problem of global warming; 2) by ensuring results from efforts to positively adopt CSR activities; and 3) with well-developed governance systems that would never overlook even a small accident or legal infringement.

This opinion was prepared on the basis of 1) the results of the Forum's evaluation of Toray's sustainability rating; 2) a site inspection of Toray's Mishima Plant; and 3) a reading of the draft Toray Group CSR Report 2008.



#### Nobuyuki Kimata

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Born in Akita, Japan, 1941. Graduated from Tohoku University. Completed graduate studies at Kyoto University Graduate School of Engineering. Master of Engineering. First-class Architect.

Fields of specialization are environmental engineering, value engineering, facilities management, global environmental problems and management appraisal. Publications include: "Environmental Management Rating and Risk Management" and "The Risks Posed to Japan's Social Capital by Climate Change". Professor Kimata co-authored "Visions and Strategies for a Sustainable Economy", "The Goals and Characteristics of Sustainable Management Rating and Management Diagnostics", etc.

# Third Party Opinion from an SRI Analyst

#### Human resources training with an emphasis on diversity focusing on "Five Innovations"

When I read the Toray Group CSR Report 2008 from an SRI view-point, what left the greatest impression on me was the concept of "CSR Innovation."

In its mid-term business strategy IT-2010, Toray lists "Five Innovations" as management issues: business structure, technologies, competitiveness, business-awareness and CSR. I was impressed because I understood that the fact that CSR innovation was included here showed that for Toray Group, CSR was a growth strategy, and it was seen as a source of competitive advantage.

On this point, I was interested in how Toray Group proposed to improve the quality of its human resources, given that the people who are the instruments of innovation are the most crucial factor in attaining the "Five Innovations." I believe that the report would have been even more appealing if there were some explanation as to where the strategic priorities were placed among the 10 items in the CSR Guidelines, and why.

Toray Group has been dispatching its employees on overseas assignments for more than 50 years, and it has had overseas production facilities for 45 years. Because it was one of the first Japanese materials manufacturers to have developed overseas operations, there are likely to be many employees with sound experience in intercultural communication in key areas in the company's head office. Also, in 1958, Toray led the way in promoting women to management positions, and in 1974, it introduced a child care leave program, nearly 20 years before this became part of Japanese law. From these and other examples, I can see that Toray has generated a climate in which a diversity of human resources is made a part of its corporate culture.

It is this diversity that is the "cradle" that creates new value in human resources, and this is a point that should definitely not be forgotten by any company that stresses innovation. We produce our evaluation reports after learning what we can about a company's approach to diversity from CSR reports, and then by confirming our impressions through company visits and telephone interviews.

In this way, when we read a company's CSR report, we always do our best to gain an understanding of the company's growth strategy. Toray Group's CSR Report 2008 contains more descriptions of the Group's CSR initiatives than the 2007 edition. This has gone a long way toward fulfilling the company's obligations from the perspective of accountability. On the other hand, sections such as "View from the Field" and the photos of general managers in the environmental data page of Toray plants have been left out this year, and this could be disappointing from the point of view of reader engagement and employee motivation.

Further, a Chronology of CSR Initiatives was present in the 2007 report, but is left out of the 2008 edition. This section contained useful data in the sense that, in addition to being able to view at a glance the historical flow of Toray's CSR activities, one could see the interrelationships with social currents of thought at certain times. This made it possible to measure the company's level of sensitivity to society.

In producing CSR reports, deciding on how wide an audience to address is a difficult issue for companies. If, as often happens, the report is made too all-embracing, there tends to be less impact on the reader. However, we view CSR reports as important investor relation tools, and on that point this report is commendable.



**Mizue Tsukushi** Founder and CEO The Good Bankers Co., Ltd.

Put together Japan's first SRI financial product, "Nikko Eco-Fund" in 1999. Recipient of the first Good Design Award for a financial product. "Family Friendly Fund" developed in 2004 also won a Good Design Award and an outstanding performance award of the Work-Life Balance Award. In September 2005, received Japan's Prime Minister's Award for "Encouragement of a Society with Equality of Male/Female Participation."

Member of the Japanese National Commission for UNESCO; Member of the Cen-

tral Environment Council; numerous public appointments.