

Leveraging  
the Power of Materials to  
**Change the World**

Innovation and Challenge  
Link to the Future

<b>CSR Report 2016</b> .....	<b>01</b>	<b>Value Creation</b> .....	<b>58</b>
<b>Editorial Policy</b> .....	<b>03</b>	Contributing Solutions to Social Issues through Business	
<b>Message from the President</b> .....	<b>06</b>	Activities .....	<b>59</b>
		Green Innovation Business Expansion Project .....	<b>60</b>
<b>Special Feature 1</b>		Life Innovation Business Expansion Project .....	<b>71</b>
<b>World-Changing Innovations, Linked by the Power</b>			
<b>of Materials</b> .....	<b>08</b>	<b>Governance</b>	
<b>[Green Innovation]</b>		Corporate Governance and Management Transparency .....	<b>76</b>
Using Advanced Materials to Reduce CO2 Emissions .....	<b>11</b>	Corporate Ethics and Legal Compliance .....	<b>83</b>
Using Membranes to Combat Water Shortages .....	<b>15</b>	Risk Management .....	<b>94</b>
Reducing Environmental Impact with Waterless Printing ..	<b>19</b>		
Making Innovative Clothing Out of Plants .....	<b>22</b>	<b>Social Initiatives</b>	
<b>[Life Innovation]</b>		Human Rights Promotion and Human Resources	
Easing the Burden on Workers in Tough Conditions .....	<b>24</b>	Development .....	<b>103</b>
Protecting Workers' Health .....	<b>27</b>	Product Safety and Quality .....	<b>121</b>
Reducing Burden for Patients with New Atrial		Facilitating CSR Initiatives Throughout the Supply Chain .....	<b>128</b>
Fibrillation Treatment System .....	<b>29</b>	Communication .....	<b>140</b>
Using Carbon Fiber Reinforced Plastic for Assistive		Social Contribution Activities .....	<b>154</b>
Applications to Reduce the Burden of Nursing Care .....	<b>31</b>		
		<b>Environment</b>	
<b>Special Feature 2</b>		Safety, Accident Prevention, and Environmental	
<b>Human Resources Development, Supporting</b>		Preservation .....	<b>177</b>
<b>Innovation</b> .....	<b>33</b>	Environmental Data .....	<b>223</b>
<b>Enhancing capabilities on the frontlines of</b>		Third-Party Assurance .....	<b>232</b>
<b>manufacturing</b>			
Encouraging Curiosity-Driven Research to Create		<b>Comparative Table with ISO 26000 Subjects</b> .....	<b>233</b>
Groundbreaking Innovation .....	<b>35</b>	<b>Comparative Table with GRI Guidelines (G4)</b> .....	<b>239</b>
Fostering People Who Can Improve the Manufacturing			
Floor .....	<b>38</b>	<b>Third Party Opinions</b> .....	<b>250</b>
<b>Toray Group's Corporate Social Responsibility</b> .....	<b>41</b>		
Toray Group's Management Philosophy and CSR .....	<b>43</b>		
Toray Group's Management Strategies and CSR .....	<b>46</b>		
"Working Comprehensively on Social Responsibility,			
Management Philosophy and Management Strategy"			
"Organizational Structure for Social Responsibility" .....	<b>48</b>		
"Social Responsibility at Toray Group" "Progress on Key			
Performance Indicators in Fiscal 2015" .....	<b>50</b>		
Materiality at Toray Group .....	<b>53</b>		
Fifth CSR Road Map (Fiscal 2014–2016) Value Creation .....	<b>57</b>		

## CSR Report 2016: Editorial Policy

The Toray Group publishes an annual corporate social responsibility (CSR) report in order to communicate its CSR initiatives to stakeholders.

This report describes the connection between Toray Group's management philosophy, business strategies and CSR initiatives, and shows how the Group's innovations are helping to address social issues. It also presents the Group's specific CSR targets and performance results for fiscal 2015 following the structure of the Toray Group CSR Guidelines.

The theme of this year's report is "Innovation and Challenge Link to the Future." In the Special Feature section, employees introduce the latest stories of diverse innovation across Toray's operations. This year marks the 90th anniversary of Toray's founding. The Toray Group took the opportunity to further enhance its communication via this CSR report, which highlights its endeavors to develop technologies that can help to build a more sustainable world for the future as well as its efforts to achieve its social responsibility targets.

In fiscal 2015, the Toray Group conducted a materiality assessment to identify material issues for CSR. The sections of this report that are specifically linked to those material issues are indicated using this "Materiality Focus" mark.

### Data Accuracy

Environmental data used in this report concerning greenhouse gas emissions by Toray Industries, Inc. has been verified by a third party, Lloyd's Register Quality Assurance Limited. Verified data is indicated with a ● mark.

The Toray Group welcomes external input and has asked two knowledgeable authorities to provide their overall opinions of this report (see Third Party Opinions).

### Disclaimer:

This report contains forward-looking statements in addition to historical and current facts. These forward-looking statements are assertions or assumptions that were prepared on the basis of available information at the time of publication. Actual future social conditions and results of business activities may differ from any forecasts contained in this report, as a result of changing circumstances.

## Report Content

### Report Boundary

#### Environmental Data

Covers Toray Industries, Inc. and the following 68 manufacturing subsidiaries (69 companies in all).

Occupational safety data also encompasses non-manufacturing companies and covers Toray and 52 group companies in Japan, together with 63 group companies outside of Japan (116 companies in all).

Note: For group companies and plants newly covered under the scope of environmental data, results are compiled and published using performance data for the fiscal year in which data was first collected as part of the Toray Group. Under Toray's Fourth Medium-Term Environmental Plan, if a target is managed based on an absolute value (such as air emissions of a chemical substance), the target is managed by adding to a baseline value the performance data for the fiscal year in which data was first collected.

### ■ Group companies in Japan: 26

Toray Opelontex Co., Ltd.

Ogaki Fuso Spinning Co., Ltd.

Toray Textiles, Inc.

Toray Coatex Co., Ltd.

Toray Amtecs Inc.

Toray Monofilament Co., Ltd.

Toray Hybrid Cord, Inc.  
Maruichi Fiber Co., Ltd.  
So-Wa Textile Co., Ltd.  
Du Pont-Toray Co., Ltd.  
Toyo Plastic Seiko Co., Ltd.  
Toray PEF Products Inc.  
Toray Advanced Film Co., Ltd.  
Toray KP Films Inc.  
Toray Battery Separator Film Co., Ltd.  
Dow Corning Toray Co., Ltd.  
Toray Fine Chemicals Co., Ltd.  
Soda Aromatic Co., Ltd.  
Toray ACE Co., Ltd.  
Toray Engineering Co., Ltd.  
Toray Precision Co., Ltd.  
Suido Kiko Kaisha, Ltd.  
Toray Medical Co., Ltd.  
Toray Research Center, Inc.  
Toyo Jitsugyo Co., Ltd.  
Toray Carbon Magic Co., Ltd.

## ■ Group companies outside Japan: 42

### North America

Toray Fluorofibers (America), Inc.  
Toray Plastics (America), Inc.  
Toray Resin Co.  
Toray Membrane USA, Inc.  
Toray Carbon Fibers America, Inc.  
Toray Composites (America), Inc.

### Europe

Toray Textiles Europe Ltd.  
Euro Advanced Carbon Fiber Composites GmbH  
Toray Films Europe S.A.S.  
Toray Carbon Fibers Europe S.A.  
Alcantara S.p.A.  
Toray Textiles Central Europe s.r.o.

### Asia

P.T. Acryl Textile Mills  
P.T. Century Textile Industry Tbk  
P.T. Easterntex  
P.T. Indonesia Synthetic Textile Mills  
P.T. Indonesia Toray Synthetics  
P.T. Toray Polytech Jakarta  
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 BASF PBT Resin Sdn. Berhad  
Toray Fibers (Nantong) Co., Ltd.  
Toray Polytech (Nantong) Co., Ltd.  
Toray Sakai Weaving & Dyeing (Nantong) Co., Ltd.  
Toray Jifa (Qingdao) Textile Co., Ltd.  
Toray Plastics (Suzhou) Co., Ltd.  
Toray BlueStar Membrane Co., Ltd.  
Toray Fibers & Textiles Research Laboratories (China) Co., Ltd.  
Toray Advanced Materials Research Laboratories (China) Co., Ltd.  
Toray Plastics (Shenzhen) Ltd.  
Toray Plastics Precision (Zhongshan) Ltd.  
Toray Film Products (Zhongshan) Ltd.  
Toray Medical (Qingdao) Co., Ltd.  
Toray Advanced Film Kaohsiung Co., Ltd.  
Toray Plastics (Chengdu) Co., Ltd.  
Toray Advanced Materials Korea Inc.  
Toray Chemical Korea Inc.  
STEMCO, Ltd.

### Social Data

Covers Toray Industries, Inc. and its consolidated subsidiaries (60 companies in Japan, 98 companies outside of Japan), but scope of reporting may differ for some items.

#### Economic Data

Covers Toray Industries, Inc. and its 254 consolidated companies (255 companies in all).

#### **Period Covered by this Report**

This report covers fiscal 2015 from April 1, 2015 to March 31, 2016. Some content may be current up to July 2016.

#### **Reference Guidelines:**

This report is prepared in accordance with the “core” option of the *G4 Global Reporting Initiative (GRI) Guidelines* for sustainability reporting.

Comparative Table with GRI Guidelines (G4)

This report is prepared in accordance with the Responsible Care Code published by the Responsible Care Council of the Japan Chemical Industry Association.

The following guidelines were used as references in preparing this report:

- *Environmental Accounting Guidelines 2005* issued by the Japanese Ministry of the Environment
- ISO 26000: 2010

Comparative Table with ISO 26000

#### **Contact**

CSR Operations Department (CSR Operations Group)

Tel: +81-3-3245-5184

Fax: +81-3-3245-5134

e-mail: [CSR-suishin@nts.toray.co.jp](mailto:CSR-suishin@nts.toray.co.jp)

Issue date: August 2016

Next scheduled issue: August 2017

## Message from the President



Akihiro Nikkaku  
President, Toray Industries, Inc.



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

The importance of corporate social responsibility (CSR) is continuing to grow as more and more emphasis is placed on sustainable growth around the world. Socially responsible corporations must do their part to address social issues, including environmental problems, in tandem with their pursuit of business growth.

Toray marked its 90th year in business in 2016. The Toray Group has embraced a corporate philosophy of “contributing to society through the creation of new value with innovative ideas, technologies and products,” and we are working hard to do this by developing innovative and advanced materials. Materials are in every product and have the power to fundamentally change the world. By developing original materials, we can deliver new value that will fundamentally address social and economic problems. We have made it our highest management priority to pursue social responsibility by always doing business in a manner that emphasizes safety, accident prevention, environmental conservation, corporate ethics, and legal compliance.

The Toray Group is currently implementing two corporate strategies. One is our long-term corporate vision, AP-Growth TORAY 2020, which outlines our business portfolio and vision for around 2020. We are also implementing a medium-term management program, Project AP-G 2016, which covers the period from fiscal 2014 to 2016 and seeks to leverage the collective strengths of the Group to grow our business. Under these strategies, we seek to capitalize on growth opportunities, for example, with our Green Innovation businesses, which offer solutions to the increasingly critical issues relating to the global environment, resources, and energy, while we expand our Life Innovation businesses, which

enhance the quality of medical care, reduce the burden on medical staff, and contribute to health maintenance and longevity. Further, we are pursuing business expansion in growth countries and regions, with a special focus on Asia, the Americas, and emerging countries.

These strategies are bearing much fruit. The Toray Group recorded net sales of 2,104.4 billion yen (up 4.7% year-on-year) in fiscal 2015, with operating income of 154.5 billion yen (up 25.1%), ordinary income of 150.2 billion yen (up 16.8%), and net income attributable to owners of parent of 90.1 billion yen (up 26.9%). These figures are all record-highs.

At the Toray Group, social responsibility is integrated with our management philosophy and strategy. We see corporate social responsibility as going hand in hand with business growth. The Group will continue to supply products, services, and technologies that address social issues while pursuing sustainable growth in harmony with global development, always aiming to be highly valuable to all stakeholders.

I hope that you will take the time to read through this CSR Report. We made a real effort to make it as clear and accessible as possible, because we want all of our stakeholders to be well informed about our progress on our social responsibility goals.

August 2016

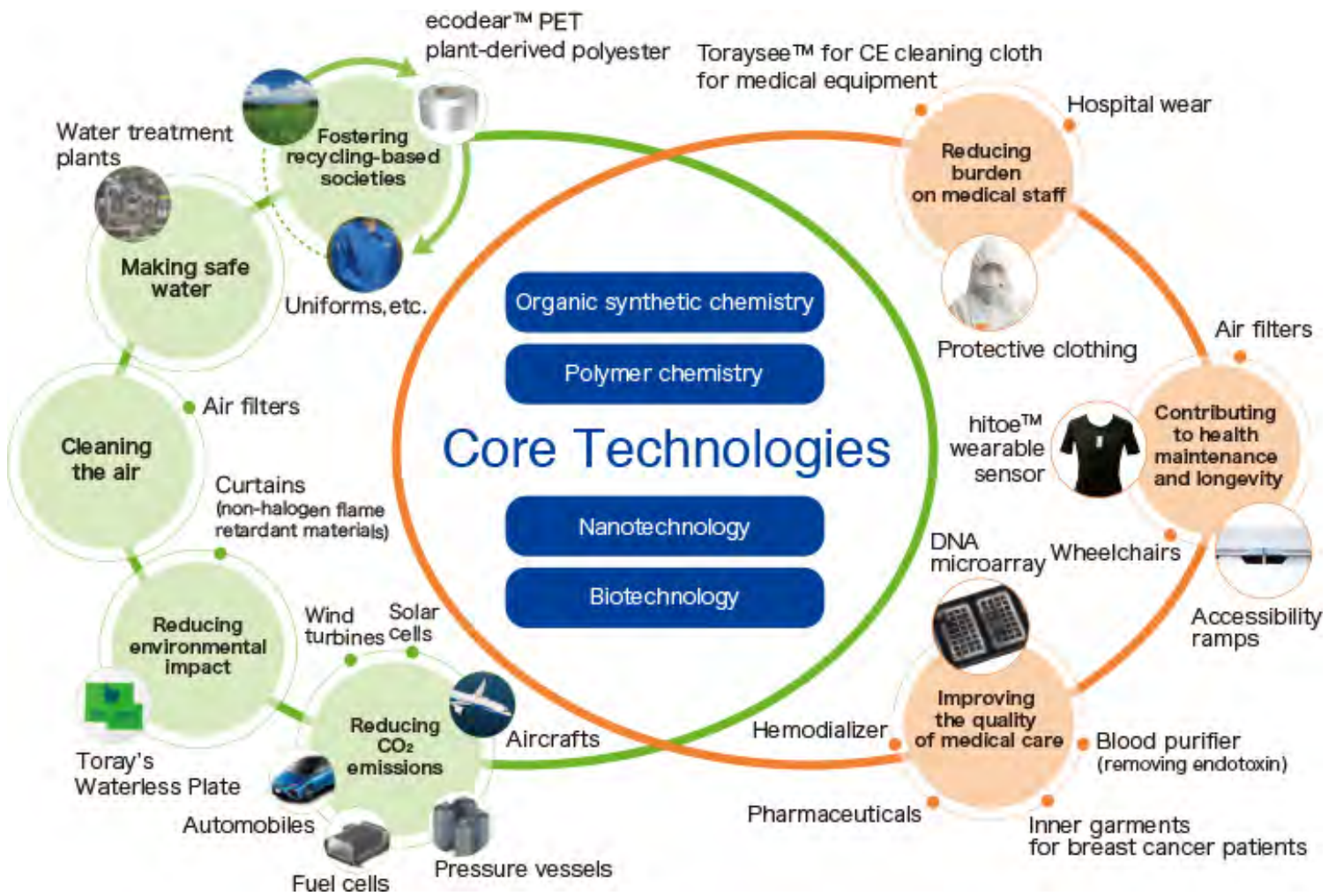


Copyright © 2017 TORAY INDUSTRIES, INC.

Special Feature 1

# World-Changing Innovations, Linked by the Power of Materials

The Toray Group is engaged in group-wide projects to develop advanced materials that make the most of its technological strengths and infrastructure, to realize innovative businesses that address environmental issues (Green Innovation) and help people live healthier lives (Life Innovation).



## Green Innovation

Bringing innovative technologies and products to the world, to address environmental, resource, and energy issues

The global community must act collectively to find solutions to global environmental issues, if it is to conserve the planet's natural resources for future generations. As a chemicals company, the Toray Group recognizes that it has a duty to help build a more sustainable world by creating new value and developing innovative technologies that address



these issues. The entire Group is working as one on the Green Innovation project, seeking to deliver innovative technologies and products that address climate change and enable resources to be used more efficiently. The Toray Group's goal is that it would achieve 200 million tons of avoided CO<sub>2</sub> emissions annually by around 2020 with its Green Innovation products.

Environmental impact categories for Green Innovation products		
Environmental impact categories	Basic concept	Main products and technologies
Energy-saving	Products that reduce the energy consumed throughout their life cycle	Carbon fibers for automobiles, aircrafts, and pressure vessels; cooling and insulating micro fibers; photosensitive functional materials
New energy	Any parts, materials, and technologies used in industries relating to new energy	Solar panel backsheets, separators for lithium ion batteries
Biomass-derived	Products derived from non-petroleum raw materials	Bio-based PET; 3GT fibers; polylactic acid for textiles, plastics, and film
Water treatment	Parts, devices, and systems, etc. used in water treatment	Reverse osmosis (RO), ultrafiltration (UF) and microfiltration (MF) membranes; TORAYVINO™ home-use water filter
Air purification	Parts, devices, and systems, etc. used in air purification	Dust collecting filters and air filters
Low environmental impact	Products that control the emissions or use of hazardous substances	Non-halogen flame retardants for fibers, textiles, plastics, and films; Toray's Waterless Plate
Recycling	Products made from recycled materials or featuring a recyclable design	Reusable and recyclable products; material and chemical recycling technologies
Process innovation	Innovative manufacturing technology that greatly reduces the environmental impact of an existing process	Chemical processes that reduce gas emissions

## Life Innovation

### Further building on core advanced material technologies to help people live healthier lives

The aging of the population in Japan and other countries is casting a spotlight on health-related issues such as lifestyle diseases and the rising cost of medical care. The Toray Group's Life Innovation project aims to help people live long and healthy lives by integrating the advanced materials technology that Toray has been developing since its establishment with its core technologies and expertise across a broad range of business segments, to improve medical technologies, develop preventative treatments, and reduce the burden on medical staff. The Toray Group is actively collaborating with research institutes, medical institutions, and partners in other industries to accelerate the use of Toray materials and technologies.

## Brand Mark

life  
innovation

The Life Innovation brand mark design employs the first letter in “life” and “innovation” to form an exclamation mark, representing innovations that will excite and bring smiles to people. The letter “i” represents people, with the dot representing Toray’s technology innovations in the field of nanotechnology and all the other minute components which make up the power of chemistry, such as molecules, cells, substances, reactions, and structures. The dot also symbolizes Toray’s dedication to supporting the well-being of people and society by contributing in the areas of pharmaceuticals, medical care, health maintenance, and longevity.



Copyright © 2017 TORAY INDUSTRIES, INC.

## Using Advanced Materials to Reduce CO<sub>2</sub> Emissions

### Carbon fiber and polymer materials for a cleaner future

#### Comprehensively developing materials and components for fuel cells

The Toray Group is developing advanced materials to realize a cleaner, hydrogen-driven society, in which electricity generated from renewable solar and wind power is used to produce hydrogen, which is in turn converted to electricity on demand using fuel cells.

The release of the Toyota Mirai fuel cell vehicle in late 2014 ushered in the hydrogen age. The Mirai uses carbon fiber materials<sup>1</sup> supplied by Toray. I am involved in developing the electrode substrate, which greatly impacts the performance of the fuel cell stack. Right now, we are working every day to improve performance and reduce costs, looking toward 2020 and beyond, when fuel cell vehicles are projected to make major inroads into the market. We are also leveraging Toray's strengths in polymer science to develop the electrolyte membranes that are at the heart of fuel cell stacks. Toray established Greenerity GmbH in Germany and has built a framework to comprehensively develop and assess everything from individual components and materials (including electrode substrates and electrolyte membranes) to complex processed products.<sup>2</sup> Our aim is to see Toray's materials used throughout a hydrogen-driven society, from the production of hydrogen to its transport, storage, and use (fuel cells), by conducting R&D that leverages the collective strengths of the Toray Group.

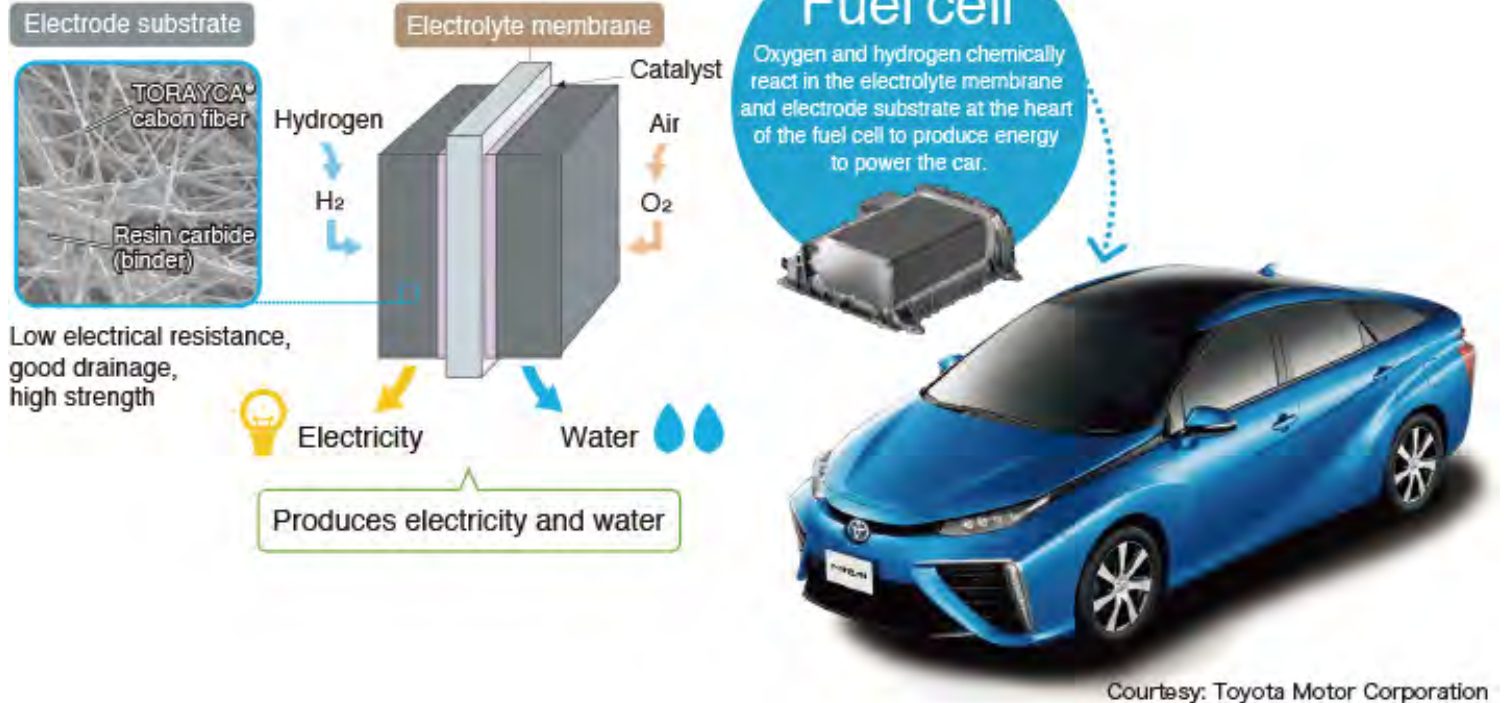


**Takashi Ando**  
Manager, Technology Planning Section,  
Environment & Energy Development  
Center, Toray Industries, Inc.

<sup>1</sup> The three materials used in the Mirai are: thermoplastic carbon fiber composite for structural parts, carbon paper for the electrode substrate in the fuel cell stack, and high-strength carbon fiber for the compressed hydrogen gas tank.

<sup>2</sup> Catalyst coated membrane (CCM), membrane electrode assembly (MEA).

## How fuel cells work



### Voice

The Toray Group played a significant role in developing the gas diffusion layer in the electrode substrate. This helped to increase the performance and reduce the size of the fuel cell stack (achieving the highest output density in the world) in the Mirai, which was the world's first commercially available fuel cell vehicle. We look forward to further performance enhancements and cost reductions in the future.

#### Kenji Tsubosaka

Group Manager, MEGA Design Group, Fuel Cell System & Component Design Department, Fuel Cell System Engineering & Development Division, Toyota Motor Corporation



Fuel cells generate electrical energy through the reaction of oxygen with hydrogen, which is used as a medium for transporting and storing clean energy. At Greenerity, using advanced technologies that are the result of almost 20 years of development, we supply membrane electrode assemblies (MEAs), which are a critical component of fuel cells and water electrolyzers. Now, as a member of the Toray Group, we will help to build a hydrogen-driven world.



## **Saving time, reducing costs, and expending less energy and resources with high-speed molding technology**

Carbon fiber offers high strength and light weight, and is widely used today in aircraft and automobiles to increase fuel efficiency and reduce CO<sub>2</sub> emissions. In aerospace, carbon fiber is being used in the latest aircraft such as the Boeing 787 and Airbus A380, as well as in the empennage of the first Japan-made passenger jet. In the automotive field, carbon fiber is used to reduce the weight of Toyota's Mirai fuel cell vehicle, which has zero CO<sub>2</sub> emissions, as well as luxury sports cars from European automakers.

The cost of carbon fiber was until now a barrier to using the material more extensively. To address the cost issue, the Toray Group developed a way to speed up the molding process using high-cycle resin transfer molding (RTM) technology that accomplishes in less than 10 minutes what used to take two and a half hours. The technology is being used to manufacture car parts, realizing shorter processing times and lower costs. The Group also developed carbon fiber reinforced thermo plastic (CFRTP) that enables mass production using rapid compression molding, to realize the world's first use of CFRTP in the structural component of a mass production vehicle.

The Toray Group will continue to develop new processes that reduce material waste in production processes, in order to improve processes and expend less energy and resources.



**Hidehiro Takemoto**

General Manager, Second Advanced Composites Technical Department, Toray Industries, Inc



Courtesy: The Boeing Company

Aircraft **using 50% CFRP\*** by weight in airframe structure, compared with conventional aircraft using 3% CFRP

Approximately **20% lighter**

**Life-cycle CO<sub>2</sub> emissions:**

Conventional aircraft  
395,000t - CO<sub>2</sub> emissions

Aircraft of 50% CFRP  
368,000t - CO<sub>2</sub> emissions

= **27,000** t - CO<sub>2</sub> reduction per aircraft/decade

Source: The Japan Carbon Fiber Manufacturers Association

Vehicle **using 17% CFRP\*** by weight in the car body, compared with conventional vehicle without any CFRP

Approximately **30% lighter**

**Life-cycle CO<sub>2</sub> emissions:**

Conventional vehicle  
31,5t - CO<sub>2</sub> emissions

Vehicle of 17% CFRP  
26,5t - CO<sub>2</sub> emissions

= **5** t - CO<sub>2</sub> reduction per vehicle/decade

Source: The Japan Carbon Fiber Manufacturers Association

**CFRP\***

Carbon fiber reinforced plastic (CFRP) is made by combining carbon fiber (pictured) and plastic.



Courtesy: Toyota Motor Corporation

**T Toray Group**

Copyright © 2017 TORAY INDUSTRIES, INC.

## Using Membranes to Combat Water Shortages

### Membrane separation technology for seawater desalination and wastewater reclamation

#### The global threat of water scarcity

Although the earth is a planet of water, only 0.01% of the planet's water is fresh water suitable for human consumption. Population and economic growth have increased the demand for water, while rapidly advancing climate change is causing severe drought and water shortages in previously unaffected regions. For example, in recent years, the United States has experienced severe droughts from the West Coast all the way to the Midwest, resulting in water restrictions and bringing attention to previously unused water resources such as treated wastewater.



**Shinichi Tachibana**

General Manager, Water Treatment  
Division, Toray Industries, Inc.

#### Seawater desalination and wastewater reclamation to combat water scarcity

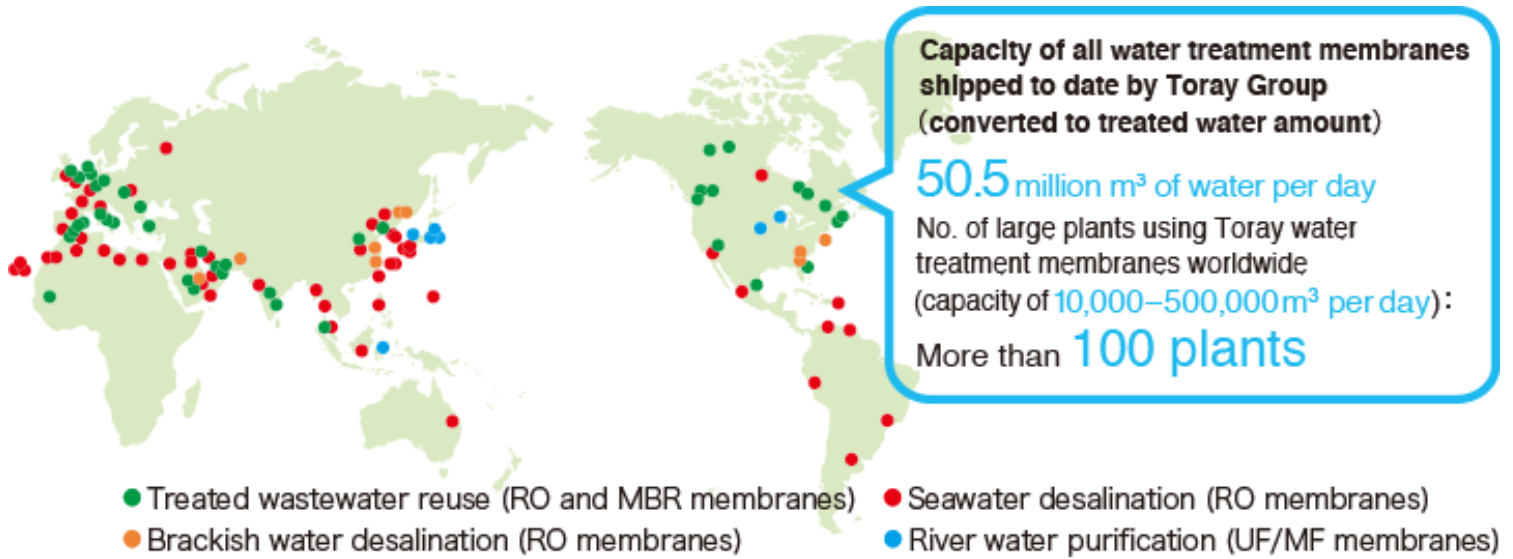
Seawater desalination and wastewater reclamation offer solutions to the problem of water scarcity. These solutions are based on membrane separation technology. The Toray Group has been building expertise in this area for almost half a century.

Membrane separation technology enables the filtering of suspended solids and salts in an aqueous solution, by selectively using various membranes. The Group manufactures every type of membrane used for seawater desalination and reuse of treated wastewater, supplying a global customer base with membrane products such as ROMEMBRA™ membrane element for reverse osmosis (RO) and nanofiltration (NF), TORAYFIL™ hollow fiber membrane modules for ultrafiltration (UF) and microfiltration (MF), and MEMBRAY™ immersion-type membrane modules for membrane bioreactor (MBR) systems. The Group is also establishing manufacturing, sales, and R&D operations worldwide.

In a seawater desalination plant, various membrane technologies such as UF (pretreatment) and RO (desalination) are applied to produce drinkable water from seawater. In a wastewater reclamation plant, MBR and RO technologies are commonly used to treat sewage water and plant wastewater.

The seawater reverse osmosis desalination (SWRO) process is widely used due to its relatively low energy consumption. By Toray's calculations, the SWRO process emits one-fifth the CO<sub>2</sub> of the conventional evaporation desalination process.

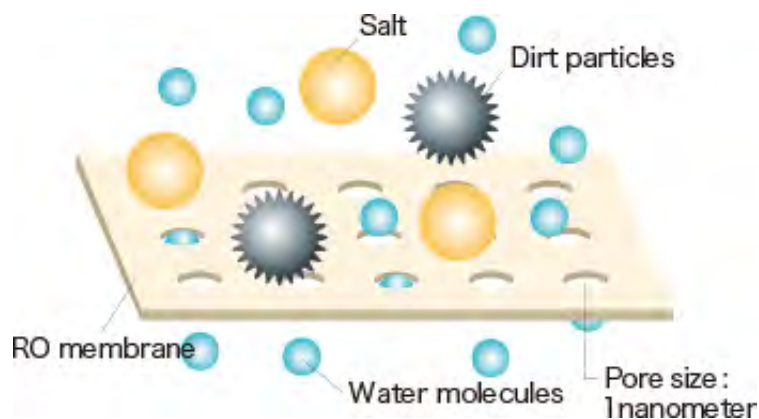
### Worldwide applications for Toray Group water treatment membranes



### How membranes filter particles

The pores in the multiporous film water treatment membrane are one nanometer in diameter (one-millionths of a millimeter). The pores filter out salt and impurities from the seawater.

### How an RO membrane works





## Toray water treatment membranes helping to supply drinking water for Singapore

Singapore has a very small land mass with minimal sources of fresh water. Traditionally, it has had to import its household water. PUB, its national water agency, sought to address the situation by launching a project to use membrane separation technology to desalinate seawater using water treatment membranes and purify wastewater to secure needed household and industrial water. Toray's RO membranes are currently used for about 70% of the project, which involves a seawater desalination plant that can process more than 440,000 m<sup>3</sup> of seawater per day, and a wastewater treatment plant that can purify 230,000 m<sup>3</sup> of wastewater per day. Singapore plans to further expand the project to increase its internally available water resources.

The Toray Group will continue to leverage its extensive experience to further develop and supply its membrane separation technology in order to address global water scarcity.



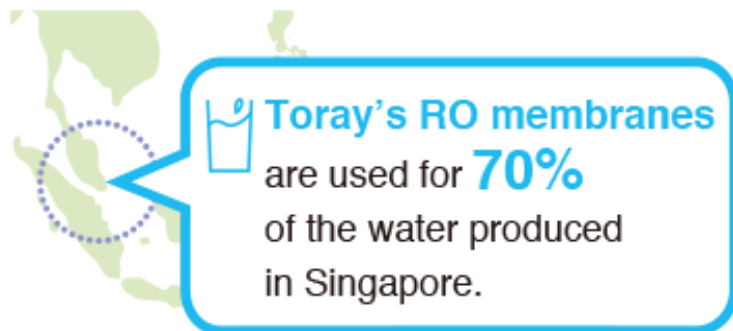
### Example of seawater desalination facility

Toray supplied RO membranes to Asia's first seawater desalination plant with a capacity of 100,000 tons per day, built in 2005.



### Example of wastewater treatment and reuse facility

Toray supplied RO membranes for the largest-class wastewater treatment and reuse plant in East Asia (second largest in the world).



## Voice

The NEWater plant at Changi produces enough water to meet 30% of Singapore's total water demand. The plant uses Toray's RO membranes to produce high-quality water using less energy. Seawater desalination and reuse of treated wastewater based on membrane technology offer a solution to water scarcity worldwide. Toray Asia will continue to work closely with the Toray Singapore Water Research Center to address water issues through the application of membrane technology.



### Yuhendy Leevin

Regional Manager, Toray Asia Pte. Ltd.

## Topic

### Supplying mobile water treatment units to address water scarcity in Bangladesh

The Toray Group was contracted to supply 30 mobile water treatment units to Bangladesh, under an Official Development Assistance (ODA) grant-in-aid program of the Ministry of Foreign Affairs of Japan to address natural disasters from climate change. These mobile units use UF and RO membranes manufactured by the Toray



Group. Each one can supply enough water for up to 300 to 500 people per day, using river water and well water. The mobile units are supplying drinking and household water to Bangladesh citizens who face a shortage of safe water.



Copyright © 2017 TORAY INDUSTRIES, INC.

## Reducing Environmental Impact with Waterless Printing

### Advantages and future potential in Europe's expanding market

#### Waterless printing making further inroads in eco-aware Europe

Offset printing is a commonly used method in the printing industry.

Conventional offset printing is a lithographic process that uses large amounts of a water-based dampening solution containing organic solvents or other chemical substitutes in addition to printing ink.

Approximately 30 years ago, the Toray Group introduced the world's first offset printing technology that worked without dampening water.

The Toray waterless printing process uses a silicon polymer layer on the printing plate rather than dampening water from the press to repel the ink in the non-image areas, thus greatly reducing the emission of toxic substances during printing. Waterless printing also cuts the waste compared to conventional offset printing, where large amounts of paper spoilage occur due to ink transfer inconsistencies at the start of printing runs.

In Europe, waterless printing has until now mainly been used for newspaper production. However, several factors are driving the broader adoption of waterless printing, which increases production efficiency and offers precision printing on paper and non-paper media alike, in addition to its environmental benefits. These factors include the high proportion of small-size diverse printing jobs, the demand for high quality in luxury brand advertising, and the need to satisfy the special requirements for printing on non-absorbent media substrates such as labels and credit cards.

The Toray Group is working to deliver even greater value with waterless printing, going beyond environmental benefits, which are already a baseline expectation in the European market. The Group is developing ultra-precise waterless printing technologies, so that waterless printing can be deployed as the preferred method for other applications such as passports and driver's licenses, which require very high-quality, duplication-proof printing to prevent counterfeiting.

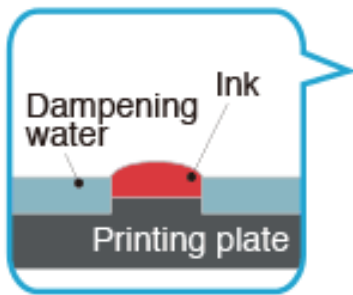


**Mitsunori Hayashi**

General Manager, Sales Department,  
Graphics Division, Toray Textiles Central  
Europe s.r.o.

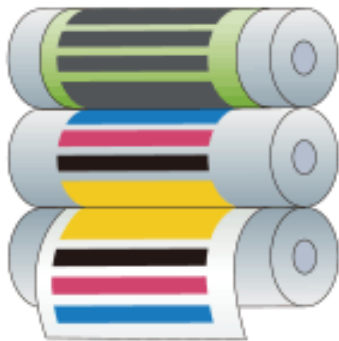
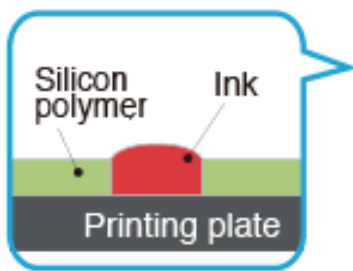


## Conventional offset printing



Uses dampening water which contains toxic substances

## Waterless printing



No dampening water used, no waste liquid

### Voice

Waterless technology offers a huge potential in many ways and led to our decision to choose the waterless printing system instead of its conventional counterpart. Paramount is the positive impact on construction and operating costs due to the optimal configuration and design of the printing machines which is raising the efficiency of the operating staff.

The printing machines do not need any lubricants, dampening agent, or water, and a low developer requirement for the printing plates can be cited in pre-press, not to mention the press start-up waste savings. Besides the increased productivity, the high quality of the printed products is another important benefit of the waterless printing system. Several awards received during our long standing membership in the WAN-IFRA International Newspaper Color Quality Club prove us right. Waterless printing also offers ecological advantages and helps save valuable resources such as energy and raw materials. As for our expectations of Toray, we wish to maintain our



reliable and trustworthy partnership. As a printing company, we highly appreciate the quality products and the friendly and helpful service Toray provides.

**Patrick Zürcher**

Managing Director Freiburger Druck GmbH & Co. KG



Copyright © 2017 TORAY INDUSTRIES, INC.

Special Feature 1

Green Innovation

## Making Innovative Clothing Out of Plants

### Made from wholly plant-based polyester fibers

#### Using plant resources to achieve performance thought possible only with synthetic fibers

As a manufacturer of synthetic fibers, the Toray Group develops innovative polymers and products made from biomass resources—plants instead of unsustainable petroleum—and is working to expand the business for these materials. As part of these efforts, the Group is especially focused on plant-based polyester fibers.

Polyester fibers are made by polymerizing ethylene glycol and terephthalic acid, which is then spun into synthetic fibers. The Group already supplies partly plant-based polyester fibers (with bio-based synthetic polymer content of approximately 30%) made from plant-based ethylene glycol. Now, the Group has succeeded in realizing the world's first clothing made from wholly plant-based polyester fibers.

The wholly plant-based polyester fibers offer the same high performance as conventional synthetic fibers—sweat absorption, fast drying, water repellent, and waterproof-breathable. The cutting-edge synthetic fibers are the first of their kind to be made from sustainable biomass resources.

The Group is currently in the pre-marketing phases for the wholly plant-based polyester fibers, targeting advanced eco-conscious companies and organizations. We will eventually expand the applications to sports apparel, automotive interior parts, and the fashion world, aiming to launch mass production around 2020.

**Koji Sasaki**

General Manager, Fibers & Textiles Green Innovation & Life Innovation Business Department, Fibers & Textiles Division; General Manager on Special Assignment, Global Environment Business Strategic Planning Department, Toray Industries, Inc.

Note: job titles are as of June 2016.

Commercialization of wholly plant-based polyester fibers



Made from sugarcane waste molasses



### Sports apparel and other applications

Tokyo Marathon 2016 Participant T-shirt (partly plant-based polyester)  
©Tokyo Marathon Foundation

ecodear™ PET



Note: Toray is an official partner of the Tokyo Marathon.

### Voice

The environment has long been a point of emphasis at ASICS. Both our company and Toray are sponsors of the Tokyo Marathon. In this context, Toray reached out to us at just the right time about using their ecodear™ plant-based synthetic fiber. We first used it in the 2014 Tokyo Marathon for the volunteer and staff clothing, which generated very positive feedback from both ASICS employees and people outside the company. We look forward to continuing our partnership with Toray and to future mass production of their wholly plant-based polyester, as well as to development of even more eco-conscious materials.



#### George Yoshimoto

General Manager, CSR Sustainability Department, Global Legal & Compliance Division, ASICS Corporation



Copyright © 2017 TORAY INDUSTRIES, INC.

Special Feature 1

Life Innovation

## Easing the Burden on Workers in Tough Conditions

Highly air permeable, waterproof and moisture permeable, and anti-infection protective clothing

### Protective clothing with better breathability and moisture permeability, to make it easier to work

Toray offers several types of high-performance protective clothing. In 2014, we supplied the highly air permeable type to workers engaged in decontamination and recovery work in Fukushima Prefecture. In 2015, we developed the waterproof and moisture permeable type for applications such as pesticide spraying and inspection work at nuclear power plants.

In 2016, we will be offering the anti-infection type created by improving the waterproof and moisture permeable type. Clothing that protects wearers from infection sources such as viruses is essential when treating patients where there is a risk of infection. The problem with existing protective clothing is that it tends to trap heat and can lead to heat stroke, which places a strain on the wearer. This inspired us to develop protective clothing that is more comfortable to wear and alleviates the physical burden on medical practitioners, using Toray's materials that realize improved comfort yet maintain a strong barrier against viruses and other infectious disease. The protective clothing will help medical practitioners to provide suitable treatment even under extreme conditions, and reduce the risk of secondary infection in a pandemic.



**Noboru Sawamatsu**

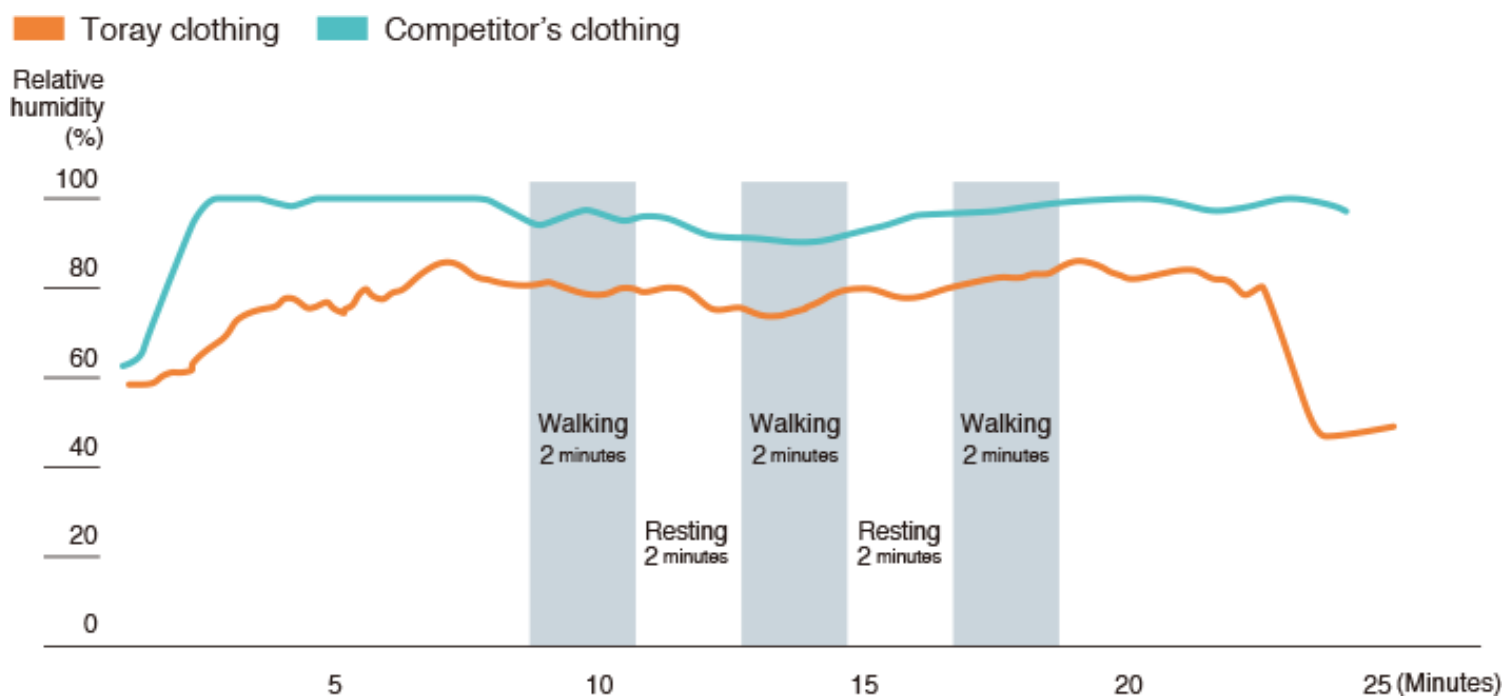
Manager, Special Procurement Section,  
Uniform & Advanced Textiles Department,  
Toray Industries, Inc.



In January 2016, we participated in a study carried out by Professor Tsutomu Takeuchi of St. Luke's International University, in the Republic of Guinea, which was affected by an outbreak of the Ebola virus. The study measured the usability of the clothing and changes in internal temperature and humidity under actual working conditions, confirming that our protective clothing is more comfortable to work in. We will continue to leverage the comprehensive capabilities of the Toray Group to develop even better products and realize mass production.



## Humidity Measured inside Protective Clothing, Tested in Republic of Guinea



Toray uses the LIVMOA™ brand for its line of limited-use (disposable) protective clothing, inspired by the concept of protective clothing that facilitates a “lively mode of action” (LIVMOA) for the wearer.

### Voice

The study that we conducted in the Republic of Guinea confirmed the high quality and usability of Toray's protective clothing. The clothing performed well in addressing the issues with protective clothing from other manufacturers, delivering improved moisture permeability and abrasion resistance. I hope that Toray can further advance its excellent technology and launch production, so that the clothing can be rapidly brought to market. Furthermore, I hope that Toray will continue to give the kind of detailed consideration to users that is typical of Japanese craftsmanship to design and make products that address the challenges of dealing with infectious disease in the field.



### Tsutomu Takeuchi

Professor, Project for Establishment of the School of Public Health, St. Luke's International University



Special Feature 1

Life Innovation

## Protecting Workers' Health

### Biosensing fabric for health management

#### New worker health monitoring service launched

In 2014, Toray and Nippon Telegraph and Telephone Corporation (NTT) developed hitoe™<sup>1</sup> biosensing fabric. Using the fabric, the two companies have developed a system that enables organizations to monitor the health status of their workers in real time. The service<sup>2</sup> was launched in April 2016. The system requires workers to wear clothing made from hitoe™ biosensing fabric, which sends data to a smartphone and from there to the cloud. The data can be viewed in real time from a computer, to monitor the wearer's heart rate and metrics for heat exposure, work intensity, and accidental falls. If two or more metrics reach a concerning level, the system sends an email alert to the supervisor or worker.

The service is suited for environments where there is a risk that workers might notice too late that their health is at risk, such as working outdoors, working alone or for elderly workers. Based on testing and feedback in the field, Toray has made improvements to the clothing shape, breathability, and laundry durability, such as developing a waist-supporting type for older workers and using mesh fabric at critical areas for conditions that could cause heat stroke.



**Takashi Teshigawara**

Manager, Tokyo Uniform Section, Uniform & Advanced Textiles Department, Toray Industries, Inc.

Note: job titles are as of May 2016.



Heat stroke and population aging are issues in many countries besides Japan. Moving forward, we will also focus on the global market. We have already started to discuss trials in China and the United States.

1 A biosensing fabric made from nanofibers coated with highly conductive polymer resin that enable sensing of body data and measurement of heart rate, cardiographic waveforms, and other metrics.

2 As of May 31, 2016, Toray is using the service at the Nagoya Plant to monitor a group of five workers.



hitoe

hitoe™ biosensing fabric  
Continuous biosensing for the wearer

## Voice

In our workplace, a small group of people manage a big area including an area with high temperatures. This made it a challenge to ensure that our workers were safe when working alone. When we learned that the company would be field-testing the hitoe™ biosensing fabric internally, we thought it would be perfect for our workplace and agreed to take part in the trial. There is a lot of interest in the system within our workplace and everyone has been great about cooperating with the trial. We regularly give feedback to the developing department so that they can improve the system. The service enables managers to monitor the status and whereabouts of workers even if alerts can't be heard, helping us to keep our people safe.



### Satoshi Otsubo

Manager, Polymerization Department, Manufacturing Division, Nagoya Plant, Toray Industries, Inc.



Copyright © 2017 TORAY INDUSTRIES, INC.

Special Feature 1

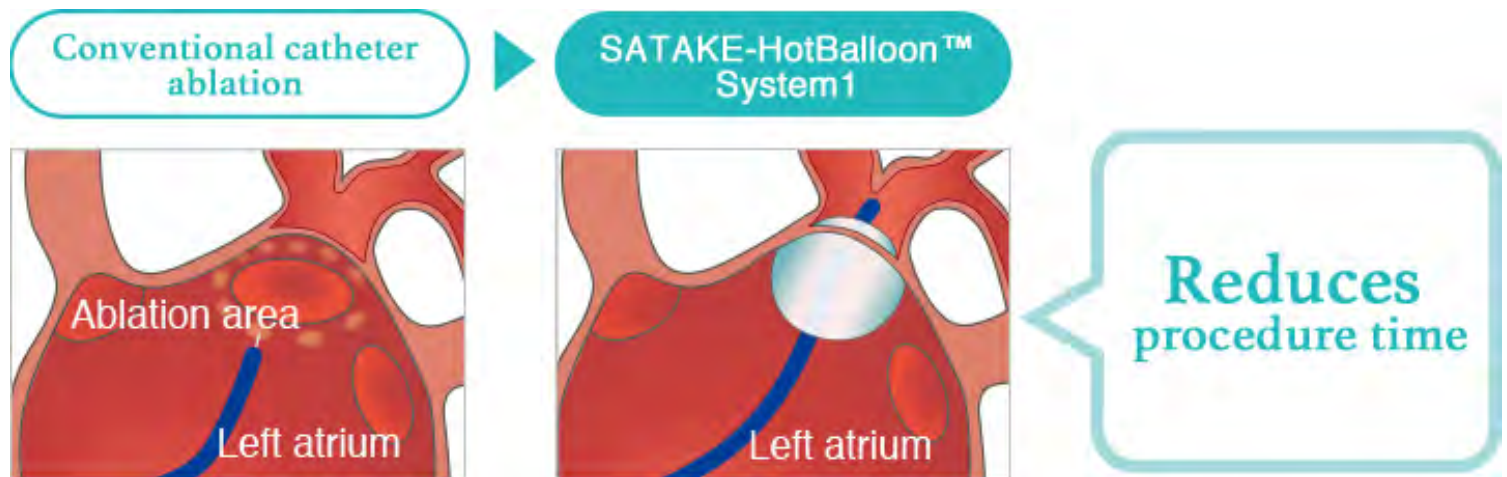
Life Innovation

## Reducing Burden for Patients with New Atrial Fibrillation Treatment System

World's first high-frequency heating balloon, developed in Japan

### What is atrial fibrillation?

A normal heart beats at a rate of around 60 to 100 beats per minute. Atrial fibrillation is a type of arrhythmia in which the heart beats irregularly at a rate of up to 300 or more beats per minute, thereby increasing the risk of heart failure and stroke. Along with medication, catheter ablation is effective for treating atrial fibrillation, through pointed cauterization of the left atrium in the heart.



1 The heating balloon-based catheter ablation system for treating paroxysmal atrial fibrillation comprises three medical devices: (1) SATAKE-HotBalloon™ Catheter (high-frequency balloon catheter); (2) SATAKE-HotBalloon™ Generator (specialized high-frequency generator); and (3) Treswartz™ catheter insertion guiding sheath.

### World's first high-frequency heating-balloon catheter for treating atrial fibrillation, developed in Japan

The Toray Group and Dr. Shutaro Satake, a leader in the treatment of atrial fibrillation, co-developed the SATAKE-HotBalloon™ System, which is the world's first heating-balloon catheter device for treating this disorder. The system uses a flexible balloon that presses tightly against the treatment area to broadly ablate the area causing atrial fibrillation. Due to the mechanism of the treatment, the system can reduce the risk of blood clot formation due to the procedure.

The Toray Group has more than 30 years of experience in co-developing medical devices and has earned a strong reputation for its expertise at turning doctors' ideas into actual products. In addition to making products, we will work to put the conditions in place to make it even safer to use our products.



**Tomohiko Ikeda**  
Manager, Marketing & Development  
Section, Medical Devices Department,  
Toray Industries, Inc.

### **Rapidly securing improvements through research in the field**

With a medical device such as a catheter, it is critical to make improvements as quickly as possible in order to lessen the burden on patients, so it is crucial to develop the device in concert with specialist physicians and medical settings. In developing Toray's ablation system, we started by trying to develop the best balloon heating method, and ultimately arrived at using a high frequency of 1.8 MHz to heat the balloon. We are continuing to make improvements to the system, in order to make it easier to use and more effective.

We believe that the core technology used in this system can be applied to treat other conditions, and we will keep developing applications for the system, working together with leading doctors in their respective fields.



**Akinori Matsukuma**  
Senior Staff, Medical Devices Technical  
Department, Toray Industries, Inc.



Copyright © 2017 TORAY INDUSTRIES, INC.

Special Feature 1

Life Innovation

## Using Carbon Fiber Reinforced Plastic for Assistive Applications to Reduce the Burden of Nursing Care

### Leveraging the power of materials for social welfare

#### Lighter weight, enhanced ease of use

Toray and Sumitomo Rubber Industries, Ltd. co-developed one of the industry's lightest<sup>1</sup> portable wheelchair ramps, the Dun-Slope AiR™ ramp,<sup>2</sup> made from carbon fiber reinforced plastic (CFRP). To reduce weight, the ramp uses a hollow structure without a core material that other ramps use. By developing woven fabrics and optimal shape combined with molding technology to achieve stable supply, the companies realized a ramp that is strong, durable, and easily portable. We hope that the ramps will help to reduce the burden of caregiving as the population grows older.



Toray also supplies other products made from CFRP for assistive applications, such as wheelchairs and prosthetic legs. Toray has been focusing on medical X-ray equipment in its Life Innovation business expansion, but we will also develop a broad range of quality products that leverage the power of materials to address challenges faced in medical and

social welfare settings.

<sup>1</sup> Based on comparison of Dun-Slope AiR™ ramp in five different lengths ranging from 100 to 200 cm, compared with same length ramps from other companies (survey by Sumitomo Rubber Industries in September 2015).

<sup>2</sup> Dun-Slope AiR™ is a registered trademark of Sumitomo Rubber Industries.



**Motoshi Toyoda**

Manager, Advanced Composites Sales Section No.2, Advanced Composites Marketing 1st Department, Toray Industries, Inc.



## Voice

We knew that Toray's carbon fiber has been proven in some of the toughest applications such as aircraft and race cars. This proven performance gave us the confidence to use the materials in our portable wheelchair ramp, and also reassures users. I know that we made the right choice in choosing Toray's materials, when I see users pick up the ramps at exhibitions and they see just how light the ramps are.

We look forward to continue working with Toray to further increase user satisfaction by making our products even lighter and better performing.



### **Masayuki Matsushita**

Manager, Household Products Business Unit, Hybrid Rubber Products HQS, Sumitomo Rubber Industries, Ltd.

## Topic

### **Washable synthetic tatami mats reduce burden in caregiving settings**

Toray supplies synthetic tatami mats that are washable and offer more grip and cushioning than traditional straw tatami mats. These popular mats are being used in various applications including elderly care facilities. According to Chikako Nobukawa, Manager, Nursing Care Department, Port Ailand Roken Social Welfare Corporation (a geriatric health services facility), "House dust is less of a concern with the synthetic mats and they are easy to clean when they get dirty. The mats are more cushioning than hard flooring materials. From the facility's perspective, we have fewer worries about accidental falls. The residents can even stretch out on the mats in the conversation lounge area just like traditional straw tatami mats, which helps them feel at home and is mentally reassuring."



Copyright © 2017 TORAY INDUSTRIES, INC.



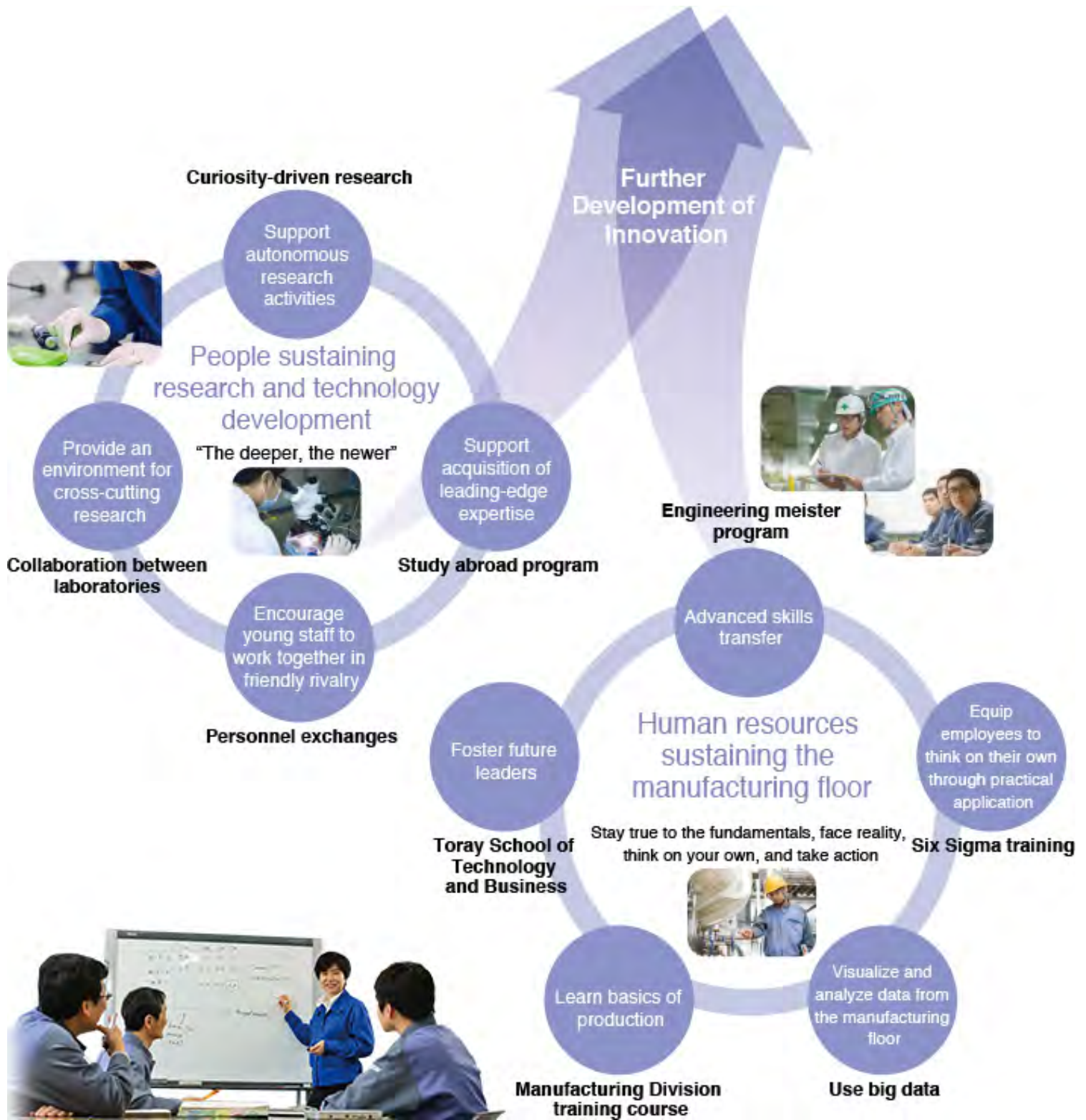
Special  
Feature **2**

## Human Resources Development, Supporting Innovation

Enhancing capabilities on the frontlines of manufacturing

**The Toray Group continues to emphasize and pursue human resources development on the manufacturing floor and is adopting new strategies to further strengthen these efforts.**

The Green Innovation and Life Innovation businesses of the Toray Group are sustained by the untiring research of passionate, dedicated Toray researchers and engineers and the continual pursuit of excellence on the frontlines of manufacturing. Together, R&D and the manufacturing floor power the growth of the Toray Group, whose business depends on the pride and determination of the Toray people engaged in research, technology development, and manufacturing. With a history in business of more than 90 years, the Group is committed to further developing the human resources who sustain the manufacturing floor, true to its corporate philosophy of “contributing to society through the creation of new value with innovative ideas, technologies and products.”



 **Toray Group**

Copyright © 2017 TORAY INDUSTRIES, INC.

Special Feature 2

## Encouraging Curiosity-Driven Research to Create Groundbreaking Innovation

Programs and a research climate that stimulate researchers' inquiring minds

### Active interaction of professionals creates new value

The Toray Group has long fostered a research climate that encourages individual employees to pursue scientific inquiry. The Group believes that this liberal climate helps to cultivate innovative ideas. Employees enjoy the freedom to perform curiosity-driven research at the initial stage ("fuzzy front end") of new product development, with their own motive and discretion. Researchers do not have to be supervised by their managers regarding schemes and results of such preliminary experiments.

There are three factors that led me to start researching our DNA microarray. Firstly, I believed that bioscience would open up possibilities for new research fields, which was aligned with our corporate strategy to combine nanotechnology and biotechnology. Secondly, the completion of the mapping of the human genome in 2003 has significantly changed the scientific landscape. Lastly, as a scientist, I wanted to create something of value which would change the world through material science.

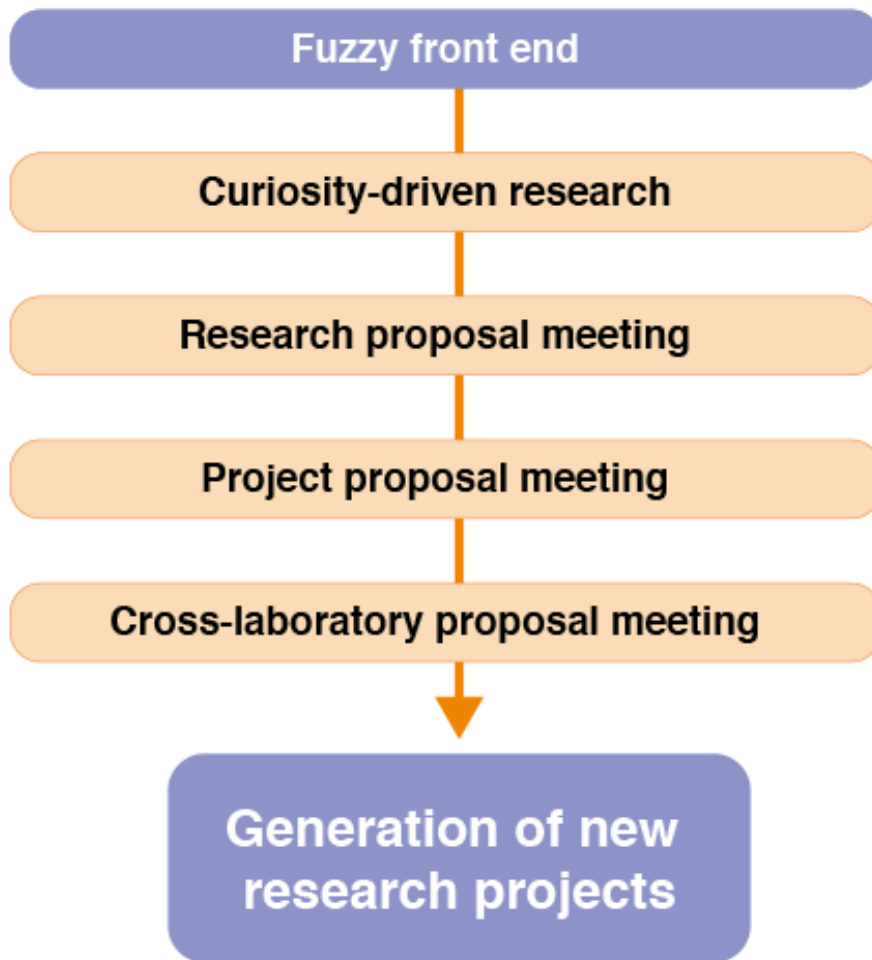
At the Toray Group, curiosity-driven research initially involves only a few people. Researchers from different disciplines discuss the fuzzy front end, continue to debate over and over again, and extract an unexpected, intriguing idea. Then the idea is presented at a project proposal meeting, which helps identify significant social value. This is the start of the new project. The Toray Group embraces diversity, and in that way provides many opportunities to create new value.



**Hitoshi Nobumasa**

Director, New Projects Development  
Division, New Frontiers Research  
Laboratories, Toray Industries, Inc.

### Program for project start-ups



**3D-Gene™** a product of curiosity-driven research

Toray developed the highly-sensitive DNA microarray, 3D-Gene™, featuring a micro-columnar structure on the black plastic substrate. This device can detect a small amount of microRNA in blood, and is applicable for diagnostic use in early detection of various cancers.



**Voice**

Since joining Toray, I have learned to think about where my work will lead in 10 years, beyond the current work at hand. By understanding the personal qualities expected of me along with the direction Toray is progressing as a

corporate group, I find the research themes to pursue and design projects which can be expected to create new value for society. As a researcher, I would like to look for inspiration by maintaining a lot of interests in many things and listening to many people.

**Yuko Sudo**

Senior Research Associate, Nanobio Group, New Frontiers Research Laboratories, Toray Industries, Inc.



Copyright © 2017 TORAY INDUSTRIES, INC.

Special Feature 2

# Fostering People Who Can Improve the Manufacturing Floor

## Developing self-driven human resources with strong aspirations

### Providing training that leads to improvements on the manufacturing floor

The Toray Group devotes extensive resources to training and educating human resources who work on the frontlines of manufacturing. For example, the Group operates the Toray School of Technology and Business for employees who have opted to receive training and been recommended by their managers, to facilitate improvements on the manufacturing floor. Under the one-year program, employees receive instruction from experts in different aspects of production, gaining broad knowledge and enhancing practical skills in securing improvements in manufacturing. The program also builds connections among employees who share the same dedication to sustaining the success of manufacturing.



A class at the Toray School of Technology and Business

I attended the school three years ago and am now applying the skills I learned on the manufacturing floor. Regardless of how difficult the problem, I now manage to analyze the problem, weigh solutions, take action, and then show the new approach to my colleagues. We will continue to pursue improvements and keep our activities evolving.



**Kazuma Ouchi**

PPS Production Section, Polymer Production Department, Tokai Plant, Toray Industries, Inc.

### Developing leaders who can set an example for others

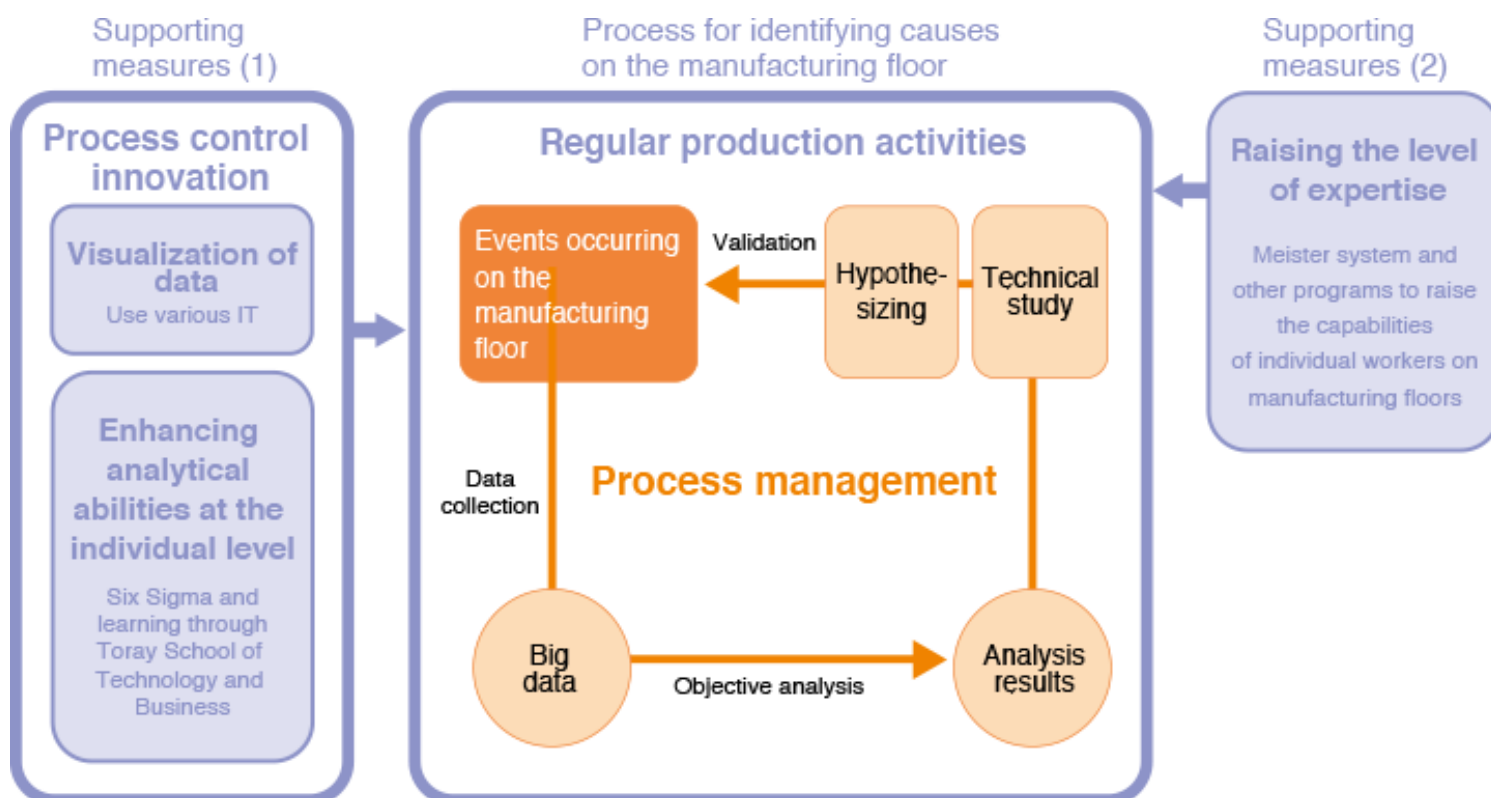
The Toray Group has a system in place at its production facilities whereby senior engineers give instruction to shift engineers. Group leaders also instruct staff as part of everyday on-the-job training. All of our employees have developed by learning from their managers and supervisors.

Currently, we are leveraging big data on the manufacturing frontlines to visualize a variety of key data points and train each of our shift engineers to analyze the changes. In this stage, we make more of the ability to think and take action, leadership skills learned through the Toray School of Technology and Business and work processes learned through Six Sigma training. The corporate culture at the Toray Group teaches people to apply what they have learned and set an example for others. As a certified Six Sigma Black Belt<sup>1</sup> myself, I make every effort to develop junior staff.

<sup>1</sup> Six Sigma certifies individuals based on their ability to instruct improvements on the manufacturing floor, based on the Six Sigma methodology. Black Belts instruct improvements at the plant level, Green Belts instruct at the departmental level, and Yellow Belts lead their workplaces.



**Taiyo Honda**  
Engineering Office, PEF Production Department, Shiga Plant, Toray Industries, Inc.



## Voice

The challenge with human resources development at the Toray Group is to find ways to improve capabilities on the manufacturing floor by getting everyone involved, amid increasing globalization. Amid diversification of the types of employment, in order to keep safety first and have each employee continue to make an active contribution, we need our employees to train and assist each other, and we need to adopt new training

perspectives that use information and communication technology (ICT), while continuing to improve ourselves.

To achieve that, we must clearly indicate the path forward. We also need to learn from leading examples in other industries, to apply new perspectives as we strive to further develop our training, working with people on the frontlines of manufacturing. We will keep on thinking and taking action for ourselves, so that we foster the next group of leaders on the manufacturing floor through these new training activities.



**Motoi Naito**

Assistant General Manager, Manufacturing General Affairs Department,  
Toray Industries, Inc.



Copyright © 2017 TORAY INDUSTRIES, INC.



# Toray Group's Corporate Social Responsibility



The Toray Group strategically practices social responsibility guided by its three-year CSR Road Map, aiming to achieve sustainable growth while helping to build a more sustainable world.

## Report from the Senior Vice President in Charge of CSR Activities

**As Senior Vice President in charge of CSR Activities, I pledge that the Toray Group will be positioned as a global leader in social responsibility by 2020.**

The Toray Group has from the beginning pledged to have a positive impact on society through its business and has made corporate social responsibility one of its highest management priorities, as an integral part of management philosophy.

The Group has formulated CSR Guidelines and a CSR Road Map to guide its active pursuit of social initiatives, which is driven by designated implementation leaders and clear targets. The Group also encourages unique initiatives at the workplace level through "CSR line activities."

The Group conducted a materiality assessment in fiscal 2015 to identify the issues with the greatest significance to its stakeholders and its business in terms of social responsibility. Moving forward, the Group will move forward with its initiatives based on these issues with materiality, which will be regularly reviewed.

In its global business, the Group will continue to view stakeholder expectations as opportunities for growth, and then take advantage of these by actively addressing social issues and conducting its operations in a manner that brings value to all stakeholders.



**Toru Fukasawa**  
Senior Vice President in charge of CSR Activities, Toray Industries, Inc.

Toray Group's Management Philosophy and CSR	Toray Group's Management Strategies and CSR	"Working Comprehensively on Social Responsibility, Management Philosophy and Management Strategy" "Organizational Structure for Social Responsibility"
"Social Responsibility at Toray Group" "Progress on Key Performance"	Materiality at Toray Group	Fifth CSR Road Map (Fiscal 2014–



Copyright © 2017 TORAY INDUSTRIES, INC.

## Toray Group's Management Philosophy and CSR

Under a corporate philosophy of “contributing to society through the creation of new value with innovative ideas, technologies and products,” the Toray Group has from the beginning pledged to have a positive impact on society through its business, realizing its corporate social responsibility and management philosophy at the same time.

### Management Philosophy and Code of Conduct



#### Related Information

- > [Corporate Philosophy](#)
- > [Corporate Missions](#)
- > [Corporate Guiding Principles](#)

## **1. Contribute to society**

As a company aspiring to create new value, 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 and revised June 2011)**

### **1. Prioritize environmental preservation**

We shall comply with all laws, regulations, and agreements in all of our business activities. Taking into consideration biodiversity, we shall place the highest priority on environmental preservation in the manufacture, handling, use, sale, transport, and waste disposal of products.

### **2. Prevent global warming**

We shall promote energy conservation and work to reduce our unit energy consumption and our carbon dioxide emissions.

### **3. Achieve zero emissions of environmental pollutants**

We shall strive continuously to reduce our emissions with the ultimate goal of achieving zero emissions of hazardous chemical substances and waste materials into the environment.

### **4. Use safer chemical substances**

We shall collect, maintain, and provide information on the health and environmental effects of the chemical substances we handle while striving to use safer chemical substances.

### **5. Promoting Recycling**

We shall develop recycling technologies for products, containers, and packaging and cooperate with society in promoting the recovery and reuse of such items.

### **6. Improve the level of environmental management**

We shall work to maintain and improve the level of our environmental management while working to upgrade our environmental management technology and skills, performing self auditing, and taking other measures.

### **7. Contribute to society through environmental improvement technologies and products**

We shall meet the challenge of developing new technologies and shall contribute to society through environmental improvement technologies as well as products that place a low burden on the environment.

### **8. Improve the environmental management of our overseas businesses**

In our overseas business activities, we shall place top priority on complying with local laws and regulations, and further, we shall manage those businesses in accordance with the management standards of the Toray Group.

### **9. Improve employees' environmental awareness**

We shall strive to improve our employees' awareness of environmental issues through environmental education, social activities, internal communications activities, and other means.

### **10. Share environmental information with society**

We shall deepen mutual understanding of Toray Group environmental policies and practices by widely publicizing our environmental preservation efforts and their results in environmental reports and other publications directed at local communities, investors, and the media.

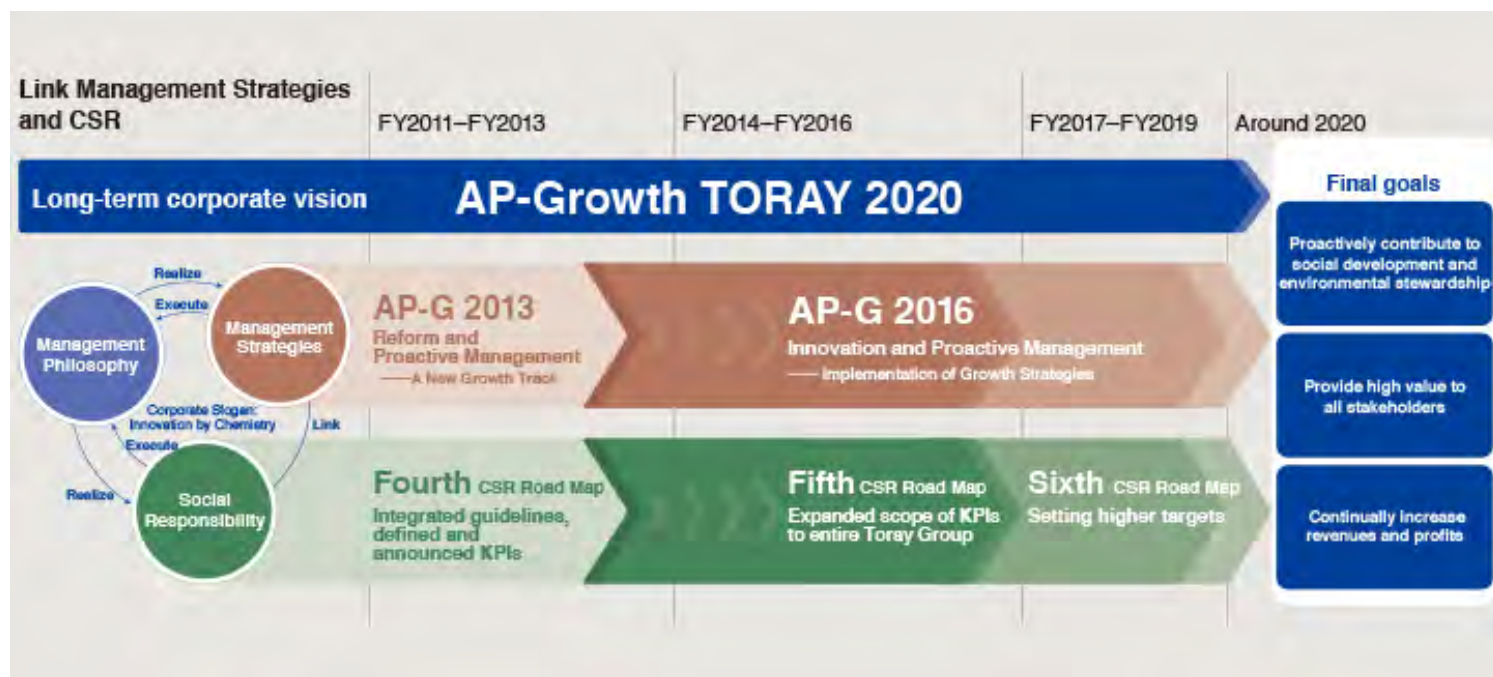


Copyright © 2017 TORAY INDUSTRIES, INC.

## Toray Group's Management Strategies and CSR

The Toray Group recognizes that corporate social responsibility goes hand in hand with business growth. The Group continually strives to enhance its value to society and stakeholders by linking management strategy to CSR.

### Link Management Strategies and CSR



In 2002, the Toray Group outlined a long-term corporate vision covering the next ten years and has since introduced medium-term management programs covering periods of three to five years. The Group reviews these as management strategies change over time. In April 2011, the Group unveiled a new long-term corporate vision, AP-Growth TORAY 2020, which is a comprehensive strategy aimed at continually increasing revenues and profits.

As the second phase under its long-term corporate vision, the Group launched the medium-term management program, Project AP-G 2016, in April 2014. Under Project AP-G 2016, the Group incorporated new perspectives and outlined eight basic strategies based on the main approaches of expanding business in growth fields and growing countries and regions, and enhancing competitiveness.

The Toray Group places social responsibility front and center in its strategy to develop its global business and capitalize on business opportunities while minimizing risks. The final goals of AP-Growth TORAY 2020 encompass three important elements of corporate social responsibility. Additionally, Project AP-G 2016 designates social responsibility in the areas of safety, accident prevention, and environmental preservation, together with corporate ethics and legal compliance, as the Group's highest management priority.

## Basic strategies of Project AP-G 2016

- 1 Business expansion in growth business fields
- 2 Business expansion in growth countries and regions
- 3 Bolstering competitiveness
- 4 Strengthening sales and marketing
- 5 R&D strategies/Intellectual property strategies
- 6 Capital investment strategies
- 7 M&A and business alliance strategies
- 8 Human resources strategies

## Group-wide projects

Green Innovation Business Expansion (GR) Project

Life Innovation Business Expansion (LI) Project

Asia, Americas and Emerging Country Business Expansion (AE-II) Project

Total Cost Reduction (TC-III) Project

### Related Information

> [Medium-Term Management Program "Project AP-G 2016"](#)



Copyright © 2017 TORAY INDUSTRIES, INC.

# "Working Comprehensively on Social Responsibility, Management Philosophy and Management Strategy" "Organizational Structure for Social Responsibility"

## Working Comprehensively on Social Responsibility, Management Philosophy and Management Strategy

The Toray Group takes a comprehensive approach to practicing social responsibility and pursuing its management philosophy and management strategies, recognizing that fulfilling social responsibilities is integral to business growth.

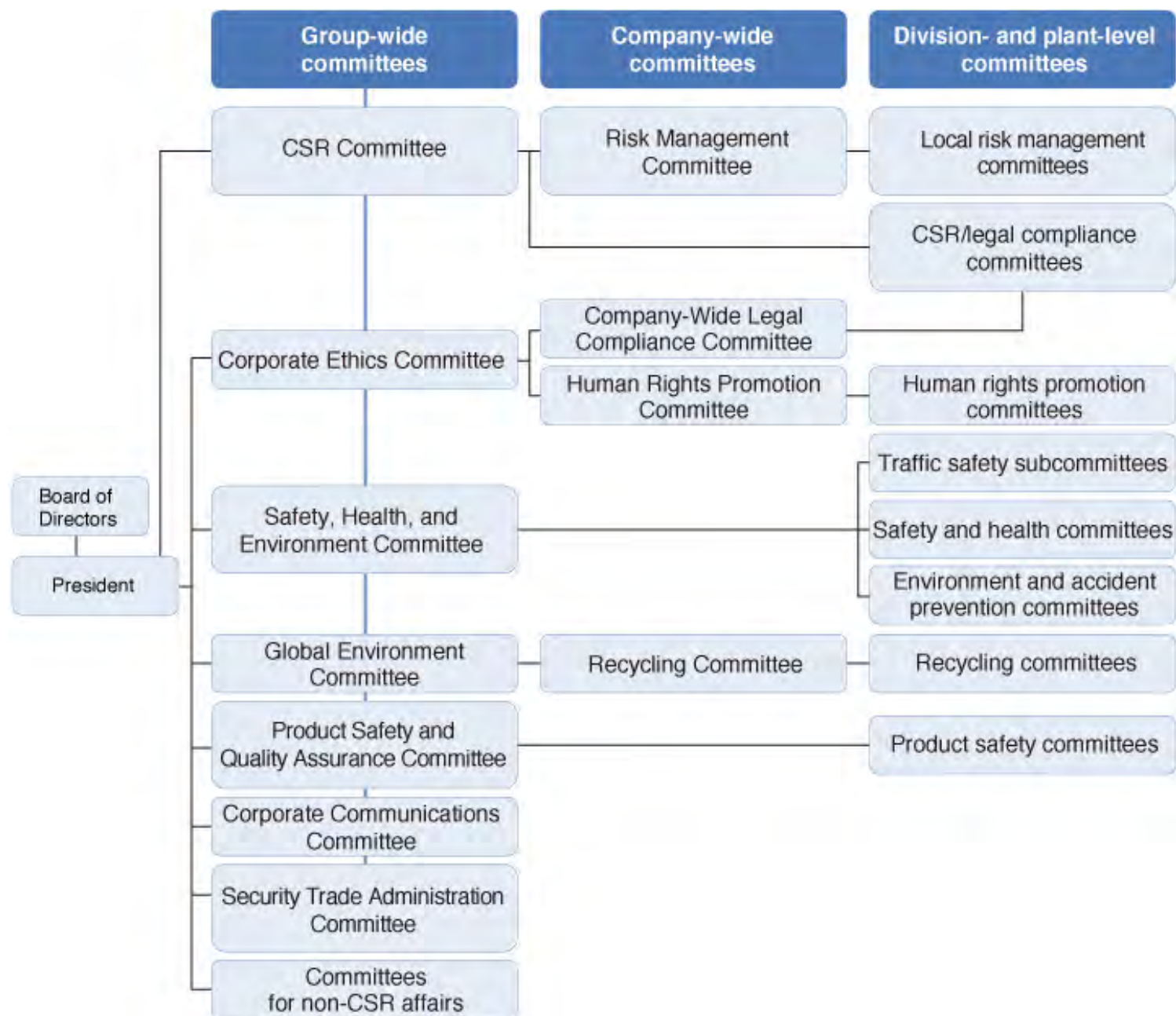


## Organizational Structure for Social Responsibility



The Toray Group's CSR Committee serves as a group-wide deliberative organization for important issues concerning social responsibility. The committee coordinates six other group-wide committees and assigns tasks along with the themes in CSR Guidelines to the six committees.

### Committee and Implementation Organization



Copyright © 2017 TORAY INDUSTRIES, INC.

# "Social Responsibility at Toray Group" "Progress on Key Performance Indicators in Fiscal 2015"

## Social Responsibility at Toray Group

### CSR Guidelines

The Toray Group's CSR Guidelines are organized into 10 items. Each item is grouped under one of four themes: Value Creation (based on the corporate philosophy), Governance, Social Initiatives, and Environment. The Group systematically pursues initiatives guided by these CSR Guidelines, viewing these efforts as an integral part of its management philosophy.

#### The Four Themes of the Toray Group CSR Guidelines

<b>Value Creation</b>	Contributing Solutions to Social Issues through Business Activities
<b>Governance</b>	Corporate Governance and Management Transparency
	Corporate Ethics and Legal Compliance
	Risk Management
<b>Social Initiatives</b>	Human Rights Promotion and Human Resources Development
	Product Safety and Quality
	Facilitating CSR Initiatives Throughout the Supply Chain
	Communication
	Social Contribution Activities
<b>Environment</b>	Safety, Accident Prevention, and Environmental Preservation

### CSR Road Map

The Toray Group systematically practices social responsibility as an organization, guided by a three-year CSR Road Map. The Fifth CSR Road Map spans fiscal 2014 through 2016 and includes CSR strategies, medium- and long-term tasks, and a detailed action plan.



**Related Information**

> [Fifth CSR Road Map](#)

**“CSR Guideline Activities” and “CSR Line Activities”**

The Toray Group implements “CSR Guideline activities” and “CSR line activities” in parallel. The former are driven by the entire organization based on the CSR Guidelines, while the latter are pursued by individual divisions in accordance with their own targets.



**Progress on Key Performance Indicators in Fiscal 2015**

## CSR Road Map

The Toray Group did not achieve several of the targets under the key performance indicators (KPIs) of the Fifth CSR Road Map. The Group assessed the reasons that it fell short and is making improvements to ensure that those targets are met by the end of fiscal 2016, while continuing to maintain progress on all the other KPIs.

### Related Information

> [Fifth CSR Road Map](#)



Copyright © 2017 TORAY INDUSTRIES, INC.

## Materiality at Toray Group

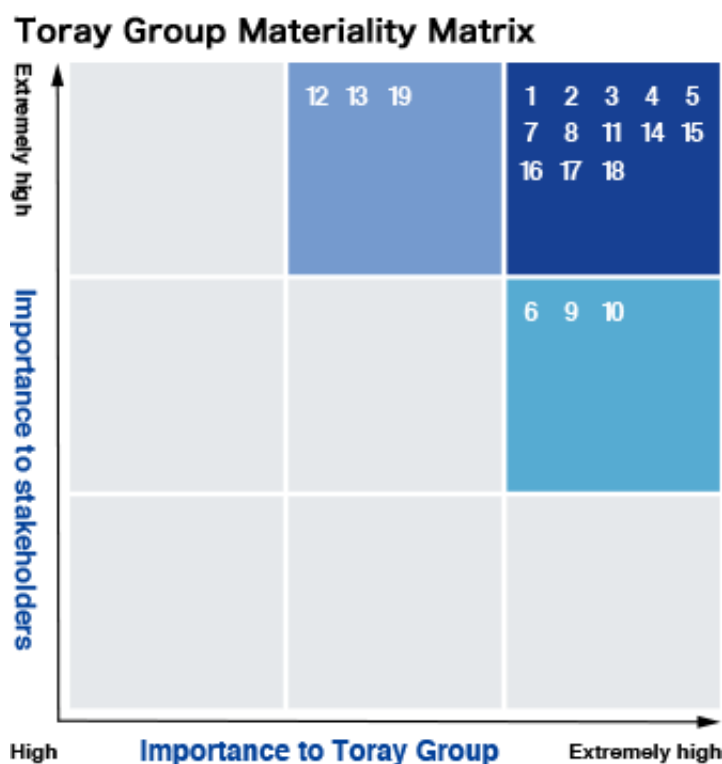
In fiscal 2015, the Toray Group conducted a materiality assessment to identify the significant issues for its pursuit of social responsibility (material issues for CSR), and based on this, then outlined the future course for its initiatives.

### Identification of Material Issues for CSR

Under a corporate philosophy of “contributing to society through the creation new value with innovative ideas, technologies and products,” the Toray Group endeavors to be valued by society. The Group pursues social responsibility as an important element of its business activities and considers it integral to its business growth. Given the increasingly diverse expectations and demands of stakeholders today, the Toray Group conducted a materiality assessment in June 2015 and identified 19 issues that are material to its medium- and long-term pursuit of social responsibility.

The Group will take concrete action guided by materiality, shaped by its CSR Guidelines and Fifth CSR Road Map. The table below summarizes the relationship between the CSR Guidelines and implementation of initiatives emphasizing the material issues.

Toray Group Materiality Matrix



	CSR Guidelines	Material Issues for CSR
<b>Value Creation</b>	Contributing Solutions to Social Issues through Business Activities	<ol style="list-style-type: none"> <li>1. Expanding businesses in growth sectors and growth countries and regions</li> <li>2. Practicing environmentally responsible management considering the entire produce life cycle</li> <li>3. Contributing to health maintenance and longevity</li> </ol>
	Corporate Governance and Management Transparency	

<b>Governance</b>	Corporate Ethics and Legal Compliance	<ul style="list-style-type: none"> <li>4. Ensuring compliance</li> <li>5. Preventing corruption</li> <li>6. Avoiding anti-competitive conduct</li> </ul>
	Risk Management	
<b>Social Initiatives</b>	Human Rights Promotion and Human Resources Development	<ul style="list-style-type: none"> <li>7. Respecting human rights</li> <li>8. Providing stable employment</li> <li>9. Securing and developing human resources</li> </ul>
	Product Safety and Quality	<ul style="list-style-type: none"> <li>10. Securing product safety and quality</li> </ul>
	Facilitating CSR Initiatives Throughout the Supply Chain	<ul style="list-style-type: none"> <li>11. Managing social and environmental impact of suppliers</li> </ul>
	Communication	<ul style="list-style-type: none"> <li>12. Engaging in dialogue with communities</li> </ul>
	Social Contribution Activities	<ul style="list-style-type: none"> <li>13. Contributing to communities</li> </ul>
<b>Environment</b>	Safety, Accident Prevention, and Environmental Preservation	<ul style="list-style-type: none"> <li>14. Addressing global warming</li> <li>15. Addressing resource and energy issues</li> <li>16. Addressing water resource issues</li> <li>17. Addressing substances with negative environmental impact</li> <li>18. Ensuring safety and disaster preparedness</li> <li>19. Conserving biodiversity</li> </ul>

## Materiality Assessment Cycle

## 1 Establish the issues to analyze and assess

As a materials manufacturer, the Toray Group supplies products that support the lives of people in many ways. The Group does business in 26 countries and regions, making it critical from a global perspective to identify the issues that are material to its pursuit of social responsibility. The Group established the issues to analyze and assess, based on the 46 aspects of social responsibility outlined in the G4 Sustainability Reporting Guidelines from Global Reporting Initiative (GRI).

## 2 Analyze the expectations of stakeholders

Under its corporate missions, the Group views customers, employees, shareholders, and society as key stakeholders, and continually seeks out ways to meet their respective expectations. The Group objectively analyzed the respective demands of customers, employees, shareholders, and society, and assessed their expectations toward the Group, to identify material issues for CSR.

### Analysis Method

● Identify issues that matter to stakeholders, based on various information sources.

Customers : Issues raised in surveys received from Toray Group customers

Employees : Issues raised in employee surveys

Shareholders : Issues raised in surveys by investment information bureaus

Society : For Japan, issues raised in various surveys about CSR. For the international community, issues raised in the United Nations Sustainable Development Goals (SDGs).

● The level of interest was converted to a point score, to analyze the extent of expectations of stakeholders.

## Periodic review

## 4 Select the issues that are material to the Group's pursuit of social responsibility

The issues were mapped out based on the level of stakeholder expectations and importance to the Group, and reworded to make them more accessible to stakeholders and the Group. Based on the issue mapping, the Group selected 19 material issues for CSR.

The adequacy of these issues was then discussed by the CSR Committee, which identified the need to analyze the extent of the expectations of stakeholders. This was analyzed in more detail and discussed a second time by the Committee, which confirmed adequacy and made a decision to adopt the 19 material issues.

## 3 Analyze the importance to the Toray Group


The importance to the Group was analyzed by assessing each issue, both in terms of opportunities and risks to the Group, and in terms of the Group's vision.

Opportunities were analyzed based on the current medium-term management program. Risks were analyzed based on the regular company-wide risk survey. The significance in terms of the Group's vision was analyzed based on the management philosophy and long-term corporate vision. In addition to the analysis, internal discussions were held to assess the importance to the Group.

## Periodic Review of Materiality

The Group specifies the issues that are material to its pursuit of social responsibility in its CSR Report. The Group will increase the accuracy of its analysis based on input from diverse internal and external stakeholders, and increase the opportunities for gaining direct input.

The conditions surrounding the Group and the expectations of stakeholders are constantly changing, and the Group will regularly review materiality in light of these changes. To formulate the next Sixth CSR Road Map for the three years starting from fiscal 2017, the Group will use the list of material issues as a reference to identify concrete initiatives and targets to be outlined in the road map.

In fiscal 2015, the Toray Group conducted a materiality assessment to identify material issues for CSR. The sections of this report that are specifically linked to those material issues are indicated using this  mark.



Copyright © 2017 TORAY INDUSTRIES, INC.



# Fifth CSR Road Map (Fiscal 2014–2016)

Fifth CSR Road Map (Fiscal 2014–2016)(PDF:149KB)

PDF

## Fifth CSR Road Map (Fiscal 2014–2016)

CSR strategies		Medium- and long-term tasks for achieving CSR strategies									
Improve ability to address social issues		Reduce risks that come with business expansion		Expand the boundary of CSR		Integrate CSR initiatives across the Toray Group		Expand employee education and training		Strengthen risk management	
Action plan		CSR Road Map goals (Fiscal 2014–2016)		Key performance indicators		Reporting scope		Fiscal 2015 targets		Fiscal 2015 results	
Value Creation	CSR Guidelines	Implementation leader*	CSR Road Map goals (Fiscal 2014–2016)	Key performance indicators	Reporting scope	Fiscal 2015 targets	Fiscal 2015 results	Degree of success			
Value Creation	<b>7 Contributing Solutions to Social Issues through Business Activities</b> Provide solutions that help address global-scale environmental issues such as climate change and address social issues by improving the quality of medical care, reducing the burden on medical staff, and contributing to health maintenance and longevity.	<b>Koichi Aiba</b> Executive Vice President, General Manager of Intellectual Property Division, Automation Material Strategic Planning Department, Global Environmental Business Strategy Planning Department, Life Innovation Business Planning Department, Technology Center Toray Industries, Inc.	<ul style="list-style-type: none"> <li>Develop and focus on developing innovation materials and new technologies focusing on Green Innovation and Life Innovation Areas</li> <li>Implement life cycle assessment for principal products, and contribute to greenhouse gas reduction through material life cycle</li> </ul>	<ul style="list-style-type: none"> <li>Rate of Green Innovation Development</li> <li>Rate of Life Innovation Development</li> <li>Percentage of capitalizing CO<sub>2</sub> emissions reduction due to adoption of Green Innovation products, using new LCA analysis and guidelines for calculating annual greenhouse gas emissions</li> </ul>	Toray Group Toray Group Toray Group	100 billion yen 170 billion yen At least 4 times per year	<ul style="list-style-type: none"> <li>No numerical target determined</li> <li>130 billion yen</li> <li>No numerical target determined</li> <li>At least 4 times per year</li> </ul>	<ul style="list-style-type: none"> <li>117 billion yen</li> <li>140 billion yen</li> <li>4 times</li> </ul>	N.A. N.A. N.A.		
	Conformance	<b>1 Corporate Governance and Management Transparency</b> Continuously monitor management systems, strengthen internal controls and strive for timely and appropriate information disclosure as part of efforts to build the company's social responsibilities.	<b>Tony Fukunaga</b> Senior Vice President in charge of CSR Activities, General Manager of General Administration & Legal Division, Investor Relations Department, Corporate Communications Department, Advertising Department, Toray Head Office, Toray Industries, Inc.	<ul style="list-style-type: none"> <li>Enhance management transparency, continuously collect stakeholder feedback to management, and fulfill responsibilities to explain corporate activities</li> <li>Reduce accounting based on the Basic Policy for Internal Control System, in accordance with Sarbanes-Oxley Act</li> <li>Establish a group-wide management system for social responsibility, and circulate information by expanding training and education, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Percentage of matters subject to disclosure implemented that are disclosed via website</li> <li>Percentage of group companies performing CO<sub>2</sub> training</li> <li>Percentage of group companies performing CSR activities</li> <li>Number of stakeholder dialog meetings</li> </ul>	Toray Group Toray Group Toray Group Toray Group	85% 100% 100% At least twice per year	<ul style="list-style-type: none"> <li>85%</li> <li>100%</li> <li>100%</li> <li>At least twice per year</li> </ul>	<ul style="list-style-type: none"> <li>100%</li> <li>100%</li> <li>100%</li> <li>At least twice per year</li> </ul>	N.A. N.A. N.A. N.A.	
<b>2 Corporate Ethics and Legal Compliance</b> Improve ethics and compliance systems through internal controls and strive for timely and appropriate information disclosure as part of efforts to build the company's social responsibilities.		<b>Tony Fukunaga</b> Senior Vice President in charge of CSR Activities, General Manager of General Administration & Legal Division, Investor Relations Department, Corporate Communications Department, Advertising Department, Toray Head Office, Toray Industries, Inc.	<ul style="list-style-type: none"> <li>No major cases of non-compliance or violation related throughout the Toray Group</li> <li>Enhance compliance activities in accordance with the conditions of each country or region</li> <li>Enhance awareness raising and educational activities relating to corporate ethics and legal compliance</li> </ul>	<ul style="list-style-type: none"> <li>Number of major violations of laws or ordinances</li> <li>Number of internal policy violations for new employees</li> <li>Number of internal legal audits, improvement rate of problems found in internal audits</li> <li>Percentage of group companies implementing a hearing for corporate ethics and legal compliance</li> <li>Percentage of group companies providing information and implementing education on major laws and regulations</li> </ul>	Toray Group Toray Group (Japan) Toray Group (Japan) Toray Group	0 violations At least once per year At least 4 times per year/100% 100%	<ul style="list-style-type: none"> <li>0 violations</li> <li>At least once per year</li> <li>At least 4 times per year/100%</li> <li>100%</li> </ul>	<ul style="list-style-type: none"> <li>0 violations</li> <li>At least once per year</li> <li>At least 4 times per year/100%</li> <li>100%</li> </ul>	N.A. N.A. N.A. N.A.		
<b>3 Risk Management</b> Enhance group-wide risk management systems including those pertaining to information security, build systems capable of rapidly responding to unexpected circumstances, and disclosing appropriate information.		<b>Tony Fukunaga</b> Senior Vice President in charge of CSR Activities, General Manager of General Administration & Legal Division, Investor Relations Department, Corporate Communications Department, Advertising Department, Toray Head Office, Toray Industries, Inc.	<ul style="list-style-type: none"> <li>Strengthen corporate risk management throughout the Group and reduce risks in global business environment</li> <li>Prepare and effectively operate business continuity plans for major subsidiaries and business segments</li> <li>Secure implementation of information security measures and reduce number of incidents</li> </ul>	<ul style="list-style-type: none"> <li>Rate of group companies with enterprise risk management systems</li> <li>Percentage of group companies that have implemented the CO<sub>2</sub> management framework of risk management</li> <li>Percentage of group companies capable of rapid implementing continuous release of risk management</li> <li>Percentage of group companies that have implemented information security measures</li> <li>Percentage of group companies preparing emergency response plan for business</li> <li>Percentage of group companies providing information security-related business, compared with fiscal 2013</li> </ul>	Toray Group Toray Group (Japan) Toray Group Toray Group Toray Group (Japan) Toray Group	100% 100% 100% 100% 100% 10%	<ul style="list-style-type: none"> <li>100%</li> <li>100%</li> <li>100%</li> <li>100%</li> <li>100%</li> <li>10%</li> </ul>	<ul style="list-style-type: none"> <li>100%</li> <li>100%</li> <li>100%</li> <li>100%</li> <li>100%</li> <li>10%</li> </ul>	N.A. N.A. N.A. N.A. N.A. N.A.		
Social Initiatives	<b>8 Human Rights Promotion and Human Resources Development</b> Social staff team focused globally and strive to promote employment, support human rights, and continuously improve activities.	<b>Shigetaka Taniguchi</b> General Manager of Personnel & Industrial Relations Division, Toray Industries, Inc.	<ul style="list-style-type: none"> <li>Support for human rights and fair promotion based on ability throughout the Toray Group by promoting distribution based on merit, gender, education, nationality, religion, and physical attributes</li> <li>Build a robust and growing workforce culture</li> <li>Actively provide employees with educational opportunities, and secure and foster human resources who can play a vital role in a global stage</li> </ul>	<ul style="list-style-type: none"> <li>Women in management positions (%)</li> <li>Percentage of companies achieving highly standardized employment rate of persons with disabilities</li> <li>Percentage of available annual paid leave used by employees</li> <li>Training opportunities per employee (yr)</li> <li>Number of staff who staff outside team who participate in training courses</li> <li>Percentage of group companies in Japan implementing human rights education and training</li> </ul>	Toray Group (Japan) Toray Group Toray Group Toray Group Toray Group (Japan) Toray Group (Japan)	<ul style="list-style-type: none"> <li>No numerical target determined</li> <li>100%</li> <li>No numerical target determined</li> <li>No numerical target determined</li> <li>No numerical target determined</li> <li>No numerical target determined</li> </ul>	<ul style="list-style-type: none"> <li>No numerical target determined</li> <li>100%</li> <li>No numerical target determined</li> <li>No numerical target determined</li> <li>No numerical target determined</li> <li>No numerical target determined</li> </ul>	<ul style="list-style-type: none"> <li>4.8%</li> <li>10.4%</li> <li>100.0%</li> <li>100.0%</li> <li>100.0%</li> <li>100%</li> </ul>	N.A. N.A. N.A. N.A. N.A. N.A.		
	<b>4 Product Safety and Quality</b> Provide safe, high-quality products by striving to enhance management systems for product safety and quality assurance, and disclose appropriate information.	<b>Akira Uemada</b> Senior Vice President, General Manager of Purchasing & Logistics Division, Product Safety & Quality Assurance Planning Department, Manufacturing Division, Toray Industries, Inc.	<ul style="list-style-type: none"> <li>Achieve zero product accidents</li> <li>Enhance the group-wide framework for product safety and quality assurance</li> </ul>	<ul style="list-style-type: none"> <li>Number of product accidents</li> <li>Rate of compliance customer rate sales, compared with fiscal 2013–2015 average</li> <li>Implementation rate for product safety and quality assurance education</li> <li>Implementation rate for compliance with education</li> <li>Implementation rate for education of Business Division, Department &amp; Group</li> </ul>	Toray Group Toray Group (Japan)	<ul style="list-style-type: none"> <li>0 accidents</li> <li>100%</li> <li>100%</li> <li>100%</li> </ul>	<ul style="list-style-type: none"> <li>0 product defects</li> <li>0%</li> <li>100%</li> <li>100%</li> </ul>	<ul style="list-style-type: none"> <li>0 product defects</li> <li>0%</li> <li>100%</li> <li>100%</li> </ul>	N.A. N.A. N.A. N.A.		
Communication	<b>9 Facilitating CSR Initiatives Throughout the Supply Chain</b> Promote CSR activities throughout the entire supply chain by meeting closely with research, processing, retailers, customers and distribution companies.	<b>Takashi Kato</b> General Manager, Purchasing & Logistics Division, Toray Industries, Inc.	<ul style="list-style-type: none"> <li>Inquire major suppliers and business partners to practice CSR procurement</li> <li>Respond to CSR procurement requests from corporate customers</li> <li>Build group-wide CSR procurement framework</li> </ul>	<ul style="list-style-type: none"> <li>Rate of major suppliers and business partners practicing CSR procurement</li> <li>Rate of group companies that have implemented the CSR procurement framework</li> <li>Rate of response to CSR procurement requests from corporate customers</li> <li>Reduction in CO<sub>2</sub> emissions per unit of sales from distribution activities (year-on-year)</li> <li>Rate of modal shift to sea and air for transport across distances for 100 km or more</li> </ul>	Toray Group Toray Group (Japan) Toray Group Toray Group Toray Group	<ul style="list-style-type: none"> <li>N.A.</li> <li>100%</li> <li>100%</li> <li>1%</li> <li>0%</li> </ul>	<ul style="list-style-type: none"> <li>10% or higher</li> <li>100%</li> <li>100%</li> <li>1%</li> <li>0%</li> </ul>	<ul style="list-style-type: none"> <li>N.A.</li> <li>100%</li> <li>100%</li> <li>1%</li> <li>0%</li> </ul>	N.A. N.A. N.A. N.A. N.A.		
	<b>6 Communication</b> Increase dialogue and cooperation with stakeholders including employees, stockholders, investors, business partners, consumers, local communities, non-profit organizations, governments and administrative agencies, main media, analysts, and other parties.	<b>Tony Fukunaga</b> Senior Vice President in charge of CSR Activities, General Manager of General Administration & Legal Division, Investor Relations Department, Corporate Communications Department, Advertising Department, Toray Head Office, Toray Industries, Inc.	<ul style="list-style-type: none"> <li>Improve stakeholder satisfaction in accordance with the Basic Policies to Promote Dialogue with Stakeholders</li> <li>Build a robust and growing workforce culture</li> <li>Actively provide employees with educational opportunities, and secure and foster human resources who can play a vital role in a global stage</li> </ul>	<ul style="list-style-type: none"> <li>Number of corporate website page views (per month)</li> <li>Percentage of group companies that have their own websites</li> <li>Number of news releases</li> <li>Number of inquiries to investor inquiries</li> <li>Number of meetings with management in fiscal year</li> <li>Number of meetings with communities</li> <li>Number of meetings with non-profit organizations</li> </ul>	Toray Group Toray Group Toray Group Toray Group Toray Group Toray Group	<ul style="list-style-type: none"> <li>1.7 million page views per month on average</li> <li>100%</li> <li>100%</li> <li>100 times</li> <li>No numerical target determined</li> <li>No numerical target determined</li> <li>No numerical target determined</li> </ul>	<ul style="list-style-type: none"> <li>1.7 million page views per month on average</li> <li>100%</li> <li>100%</li> <li>100 times</li> <li>No numerical target determined</li> <li>No numerical target determined</li> <li>No numerical target determined</li> </ul>	<ul style="list-style-type: none"> <li>1.7 million page views per month on average</li> <li>100%</li> <li>100%</li> <li>100 times</li> <li>No numerical target determined</li> <li>No numerical target determined</li> <li>No numerical target determined</li> </ul>	N.A. N.A. N.A. N.A. N.A. N.A.		
Environment	<b>10 Social Contribution Activities</b> Promote social contribution activities, including those that help foster the next generation and encourage regional development, as a good corporate citizen.	<b>Tony Fukunaga</b> Senior Vice President in charge of CSR Activities, General Manager of General Administration & Legal Division, Investor Relations Department, Corporate Communications Department, Advertising Department, Toray Head Office, Toray Industries, Inc.	<ul style="list-style-type: none"> <li>Individually pursue ongoing social initiatives emphasizing education, environment, communities, and employees, focused on being to CSR and in accordance with Toray Group Social Initiative Policies</li> <li>Enhance Toray Group strength and community activities to support high-quality education</li> </ul>	<ul style="list-style-type: none"> <li>Social contribution expenditure (percentage compared with fiscal 2013–2015 average)</li> <li>Number of students implementing social initiatives</li> <li>Number of people reached through educational initiatives, utilization rate of participants, utilization rate of employees involved in educational projects</li> </ul>	Toray Group Toray Group Toray Group	<ul style="list-style-type: none"> <li>100% or more</li> <li>No numerical target determined</li> <li>100% or more</li> </ul>	<ul style="list-style-type: none"> <li>100% or more</li> <li>No numerical target determined</li> <li>100% or more</li> </ul>	<ul style="list-style-type: none"> <li>12%</li> <li>No numerical target determined</li> <li>1,040 persons, 10%</li> </ul>	N.A. N.A. N.A.		
	<b>3 Safety, Accident Prevention, and Environmental Preservation</b> Secure the safety and health of society and employees, and protect the environment in all business processes from procuring raw materials and manufacturing to the supply and disposal of products.	<b>Akira Uemada</b> Senior Vice President, General Manager of Purchasing & Logistics Division, Product Safety & Quality Assurance Planning Department, Manufacturing Division, Toray Industries, Inc.	<ul style="list-style-type: none"> <li>Clarify and fully comply with essential safety guidelines, and encourage employees to think carefully before taking action to prevent accidents</li> <li>Enhance operational activities based on Toray Group Safety Policy, Accident Prevention and Environmental Activity Policy</li> <li>Implement Fourth Medium-Term Business Plan and achieve targets by fiscal 2015</li> </ul>	<ul style="list-style-type: none"> <li>Number of major accidents</li> <li>Achieve society's best standard for safety management and exceeding 60%</li> <li>Reduction rate for occupational accidents (excluding lost work time)</li> <li>Number of fire and explosion accidents</li> <li>Reduction of environmental accidents</li> <li>Reduction of atmospheric VOC emissions (%)</li> <li>Reduction of greenhouse gas emissions (%)</li> <li>Dividing greenery profits and plans, as part of biodiversity conservation initiatives</li> <li>Number of group companies and plants</li> </ul>	Toray Group Toray Group Toray Group Toray Group Toray Group Toray Group Toray Group	<ul style="list-style-type: none"> <li>0 accidents</li> <li>No more than 0.25</li> <li>0 accidents</li> <li>0 accidents</li> <li>To be set separately</li> <li>To be set separately</li> <li>15</li> </ul>	<ul style="list-style-type: none"> <li>0 accidents</li> <li>No more than 0.25</li> <li>0 accidents</li> <li>0 accidents</li> <li>To be set separately</li> <li>To be set separately</li> <li>15</li> </ul>	<ul style="list-style-type: none"> <li>1 accident</li> <li>No more than 0.25</li> <li>1 accident</li> <li>0 accidents</li> <li>1%</li> <li>0%</li> <li>14</li> </ul>	N.A. N.A. N.A. N.A. N.A. N.A. N.A.		

The degree of success is defined as follows: ○ means the goal was fully met; ◯ means 50% or more of the target was achieved; ◯ means less than 50% of the target was achieved and N.A. means targets were specified for the fiscal year under review.  
1. Names and job titles of implementation leaders are current as of June 30, 2016.  
2. For key performance indicators with no numerical targets, the results will not be categorized by degree of success but will be disclosed and monitored.

- Names and job titles of implementation leaders are current as of June 30, 2016.
- For key performance indicators with no numerical targets, the results will not be categorized by degree of success but will be disclosed and monitored.





## Value Creation

The materials from which all products are made have the power to fundamentally change the world. The Toray Group is committed to leading the way in technological innovation and having a positive social impact by developing advanced technologies and new materials that can be used in the growth sectors of the global environment, medical care, and health.

### Contributing Solutions to Social Issues through Business Activities

Management

Green Innovation Business Expansion  
Project

Promoting Life Cycle Management

Approach to Green Innovation  
Product Sector

Promoting Recycling Initiatives

Life Innovation Business Expansion  
Project



Copyright © 2017 TORAY INDUSTRIES, INC.

## Contributing Solutions to Social Issues through Business Activities

Provide solutions that help address global-scale environmental issues such as climate change, and address social issues by improving the quality of medical care, reducing the burden on medical staff, and contributing to health maintenance and longevity.

### Fifth CSR Road Map goals

1. Help address social issues by developing innovative materials and new technologies, focusing on Green Innovation and Life Innovation fields
2. Implement life cycle assessment for principal products, and contribute to greenhouse gas reduction throughout product life cycles

### Management

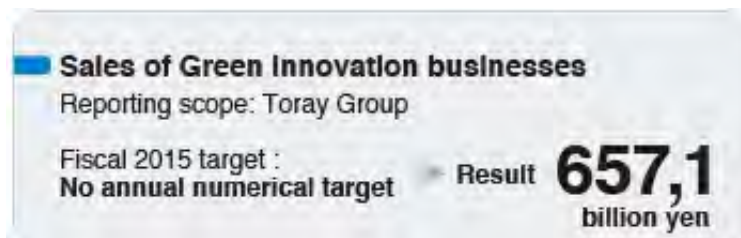
Under the medium-term management program, Project AP-G 2016, the Toray Group has deployed the Green Innovation Business Expansion Project, the Life Innovation Business Expansion Project, and the Asia, Americas and Emerging Country Business Expansion Project to expand business in growth sectors and growth countries and regions. These group-wide projects are implemented under the direct leadership of the president.



Copyright © 2017 TORAY INDUSTRIES, INC.

## Green Innovation Business Expansion Project

> Materiality Focus



The Toray Group's embraces a management policy mandating that all business strategies must place priority on the global environment in an effort to help realize a sustainable, low-carbon society. The Group is endeavoring to realize this vision by addressing global environmental, resource, and energy issues.

The Group launched the Green Innovation Business Expansion Project in fiscal 2011 to further strengthen businesses that help address today's increasingly challenging global environmental issues.

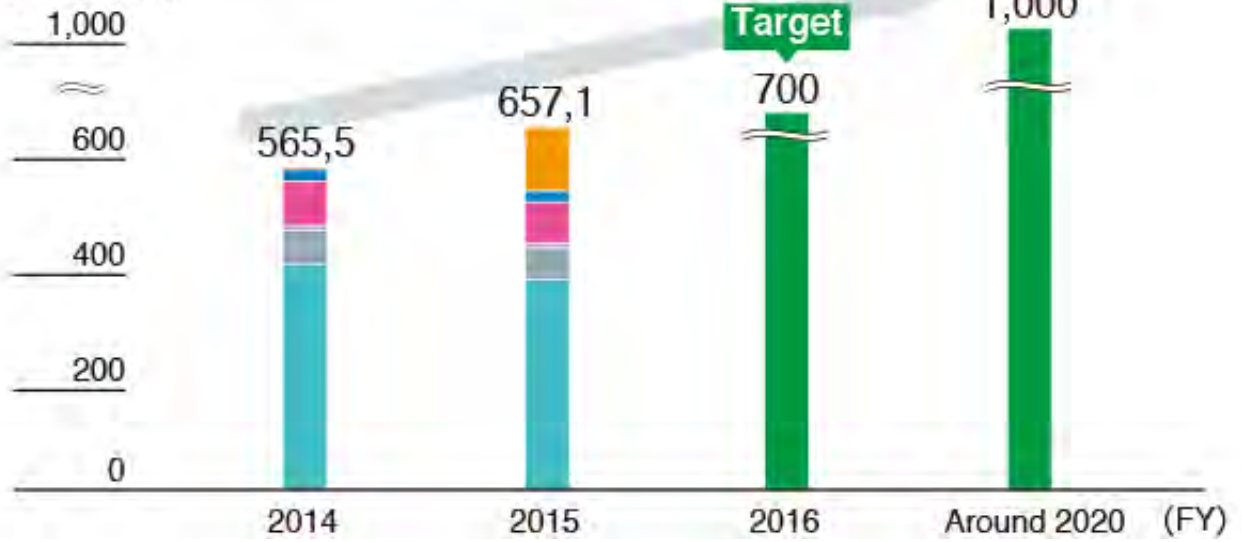
In fiscal 2015, net sales from the Green Innovation business were up 16% year-on-year at 657.1 billion yen, making steady progress toward the target of 700 billion yen in net sales by fiscal 2016. Also, Green Innovation products sold in fiscal 2015 accounted for a 79 million ton annual reduction of CO<sub>2</sub> emissions.<sup>1</sup>

<sup>1</sup> Calculated CO<sub>2</sub> emissions reduction arising from principal Green Innovation products, based on Toray's life cycle assessment analysis

### Sales of Green Innovation Businesses (Toray Group)

■ GHG reduction  
 ■ Water treatment  
 ■ Air purification  
 ■ Low environmental impact  
 ■ Recycling  
 ■ Others

(billion yen)



Copyright © 2017 TORAY INDUSTRIES, INC.

## Promoting Life Cycle Management

> Materiality Focus

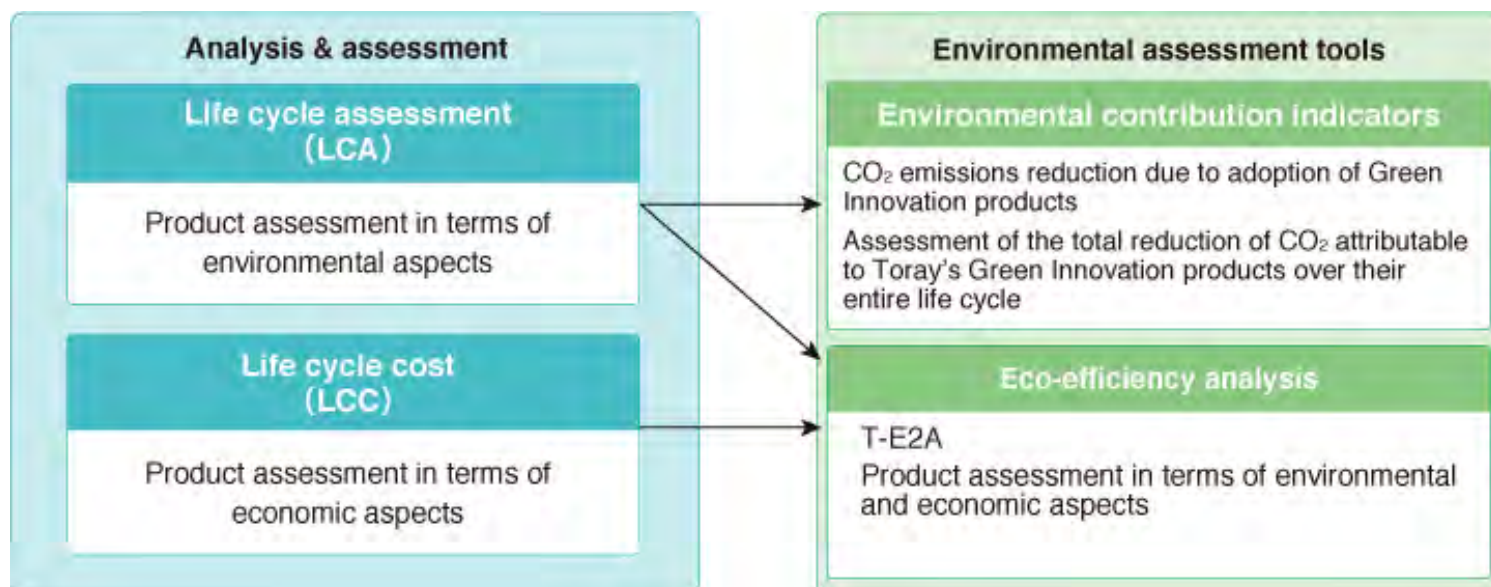
**Frequency of calculating CO<sub>2</sub> emissions reduction due to adoption of Green Innovation products, using new LCA analysis and guidelines for calculating avoided greenhouse gas emissions**  
Reporting scope: Toray Group  
Fiscal 2015 target: **At least 6 times per year**      Result **8 times**

In addressing global environmental issues, it is vital to consider the entire life cycle of products and services in order to reduce environmental impact while also delivering improved economic and social value. To this end, the Toray Group practices life cycle management. Life cycle management is the basis for Toray's Green Innovation products, and the Group has adopted life cycle assessment<sup>2</sup> and the Toray Eco-Efficiency Analysis (T-E2A)<sup>3</sup> tool and is working to ensure these are employed thoroughly in all of its businesses.

<sup>2</sup> Life cycle assessment is a method for quantitatively assessing the resources that have gone into a product and the impact the product

<sup>3</sup> T-E2A is an environmental analysis tool developed by Toray. It produces a map of multiple products plotted along the axes of environmental impact and economic performance, enabling users to select the most environmentally friendly and economical products.

### Toray's Life Cycle Management Approach





## Approach to Green Innovation Product Sector

The following diagram outlines the Toray Group's process and procedures for certifying Green Innovation products. Products are subjected to a two-stage screening process conducted by the divisional committees of group companies and by the group-wide Green Innovation Certification Committee. Those able to demonstrate objective evidence of effectiveness are certified as Green Innovation products.

### Green Innovation Product Certification Process



<sup>4</sup> This includes LCA-related data, T-E2A data, and estimates of CO<sub>2</sub> reductions attributable to the product.

<sup>5</sup> Comprised of members of Toray's Global Environment Business Strategic Planning Department, Marketing Planning Department, and Technology Center Planning Department, as well as outside experts when necessary.

### Fiscal 2015 Highlights

## Developing Artificial Suede from Plant-Derived Recyclable Resources

In January 2016, Toray launched sales of Ultrasuede™ PX, the world's first artificial suede made from plant-derived recyclable resources.

This fabric uses ethylene glycol manufactured from waste molasses, a byproduct of the sugar production process, for part of the raw materials used to produce the polyester fibers. The result is a plant-derived fabric with a similar texture to Toray's long-selling Ultrasuede™ and the same level of air permeability and easy-care handling. Toray offers a variety of applications for this advanced material, which is highly functional, features a luxurious texture, and delivers superior environmental performance.

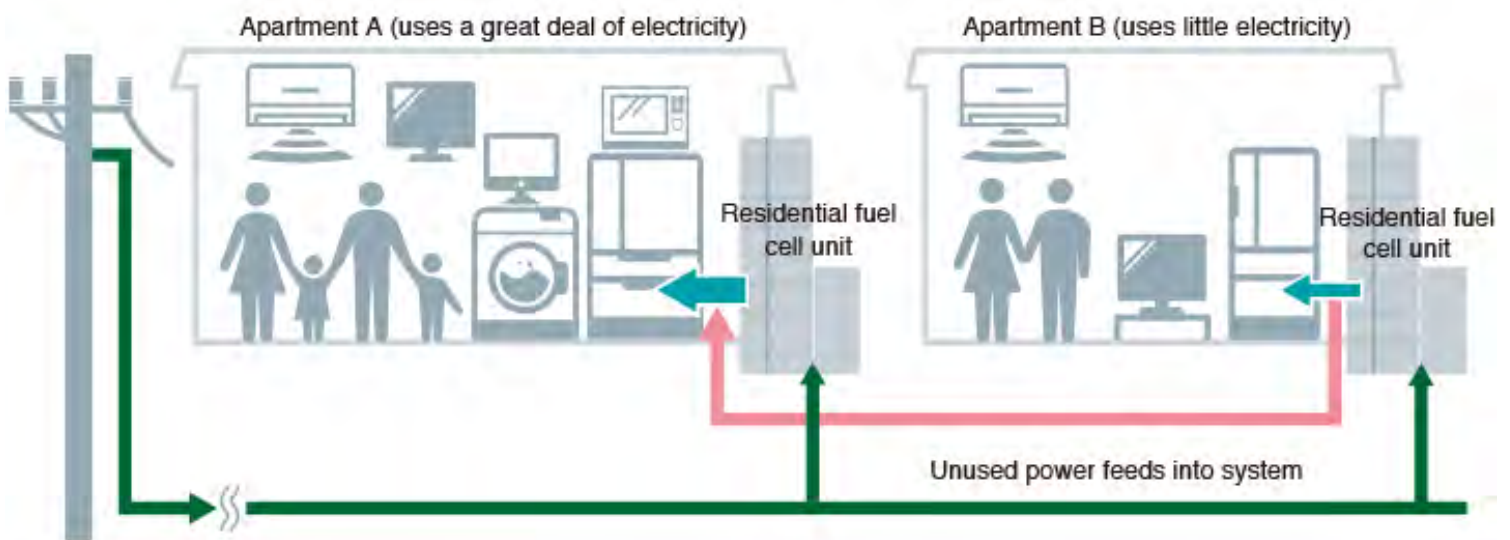




Ultrasuede™ PX

## Designing a Next-Generation Eco-Smart Apartment Complex

In August 2015, Toray Construction Co., Ltd. launched CHALIER™ Nagaizumi Grand Marks, a next-generation apartment building that features Japan's first eco-smart fuel cell system for sharing electricity within an apartment complex. Each apartment is equipped with a residential fuel cell unit that feeds into and off of a shared power grid, creating a highly efficient system that conserves energy, reduces CO<sub>2</sub> and is cost efficient.



Copyright © 2017 TORAY INDUSTRIES, INC.

## Promoting Recycling Initiatives

As a manufacturer of a wide range of materials, the Toray Group is promoting various recycling initiatives that ensure that the earth's resources are efficiently utilized.

### **Recycling Activity Principles** Adopted in March 2004

1. We shall design, produce, and sell products that reduce our impact on the environment.
2. We shall purchase and use materials and products which will help reduce our impact on the environment.
3. 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.

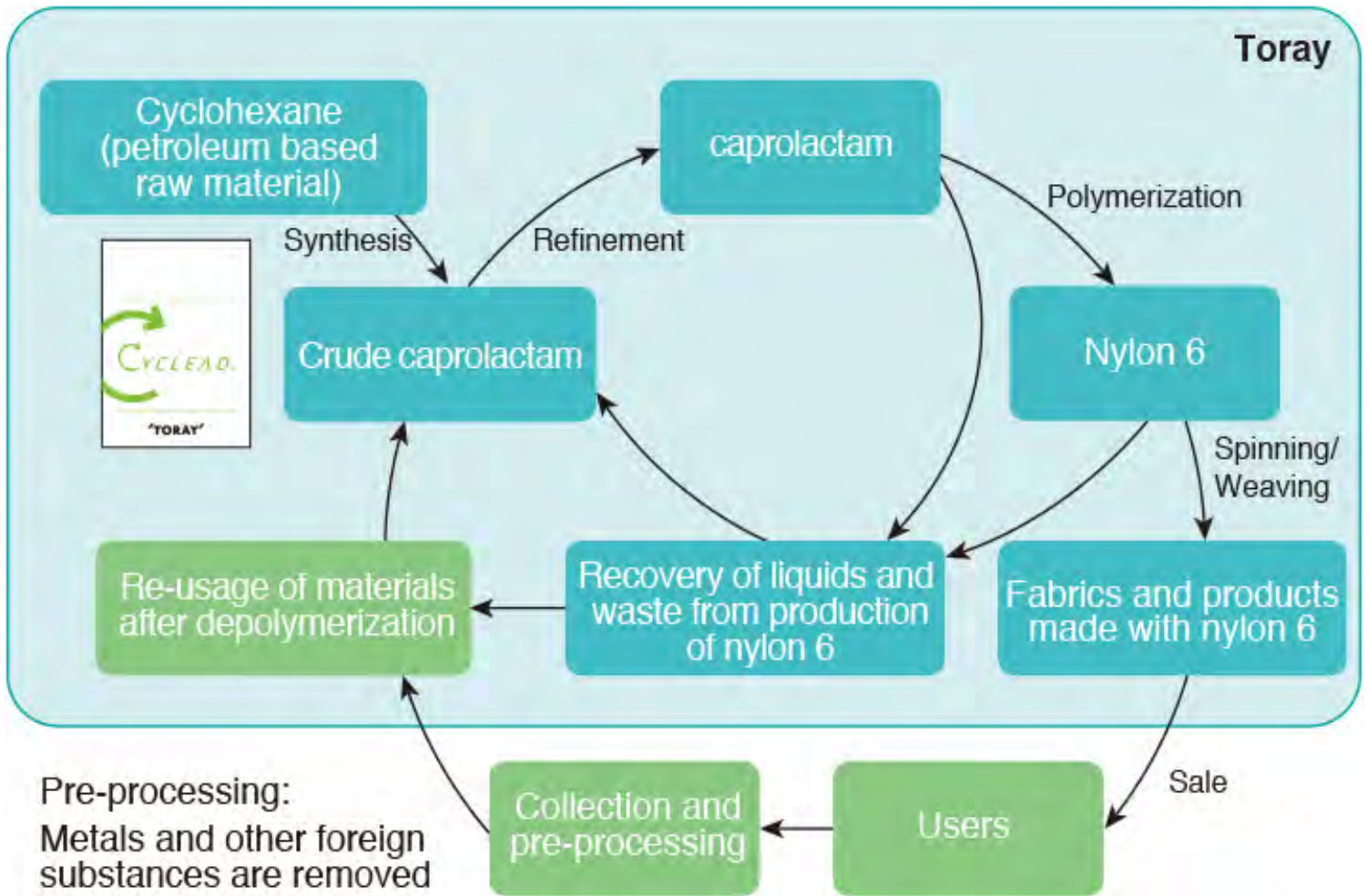
### **Fiber and Textile Recycling**

Toray offers CYCLEAD™ fabric made from recycled nylon 6 fibers, and Ecouse™ polyester fabric<sup>6</sup> made from recycled PET bottles.

<sup>6</sup> In fiscal 2015, Toray is expanding the Ecouse™ brand to encompass non-fiber products, as an integrated brand name for recycled materials and products offered by Toray.

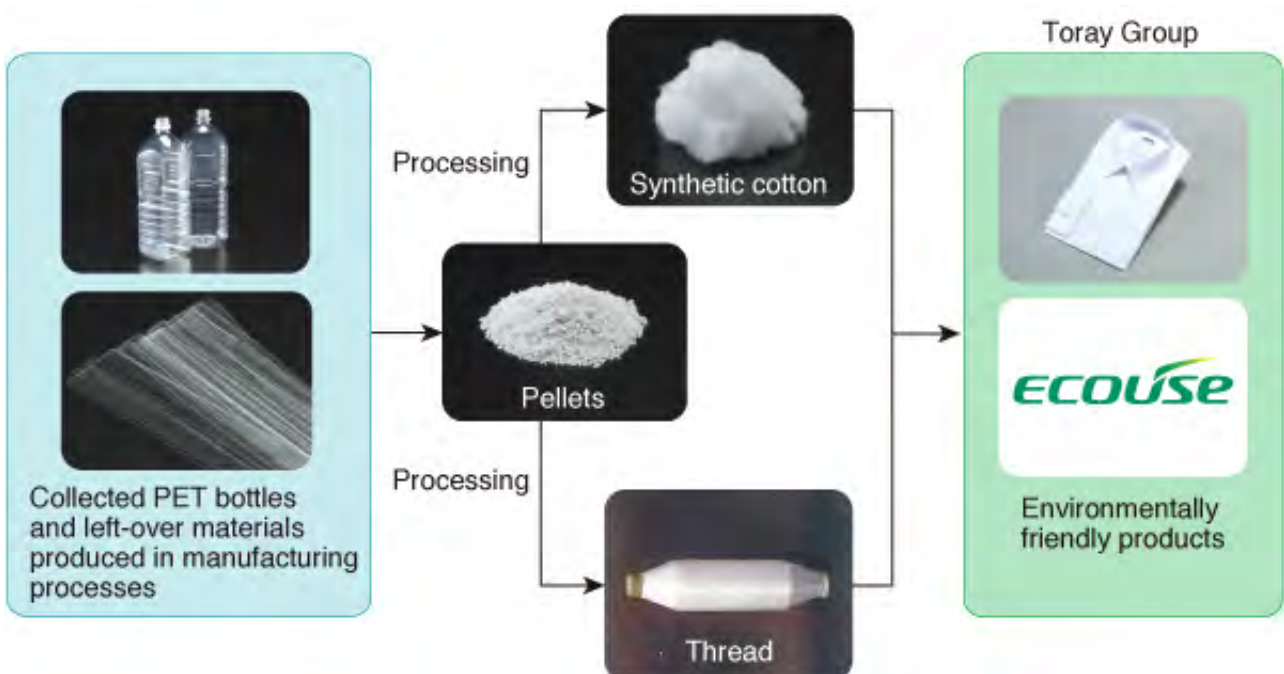
## **Collection and Circulation Type Recycling with CYCLEAD™**

**Fabric made from recycled fibers recovered from disposed nylon products**



## Regeneration Type Recycling with Ecouse™

Fabric made from recycled PET bottles for uniforms and functional sportswear

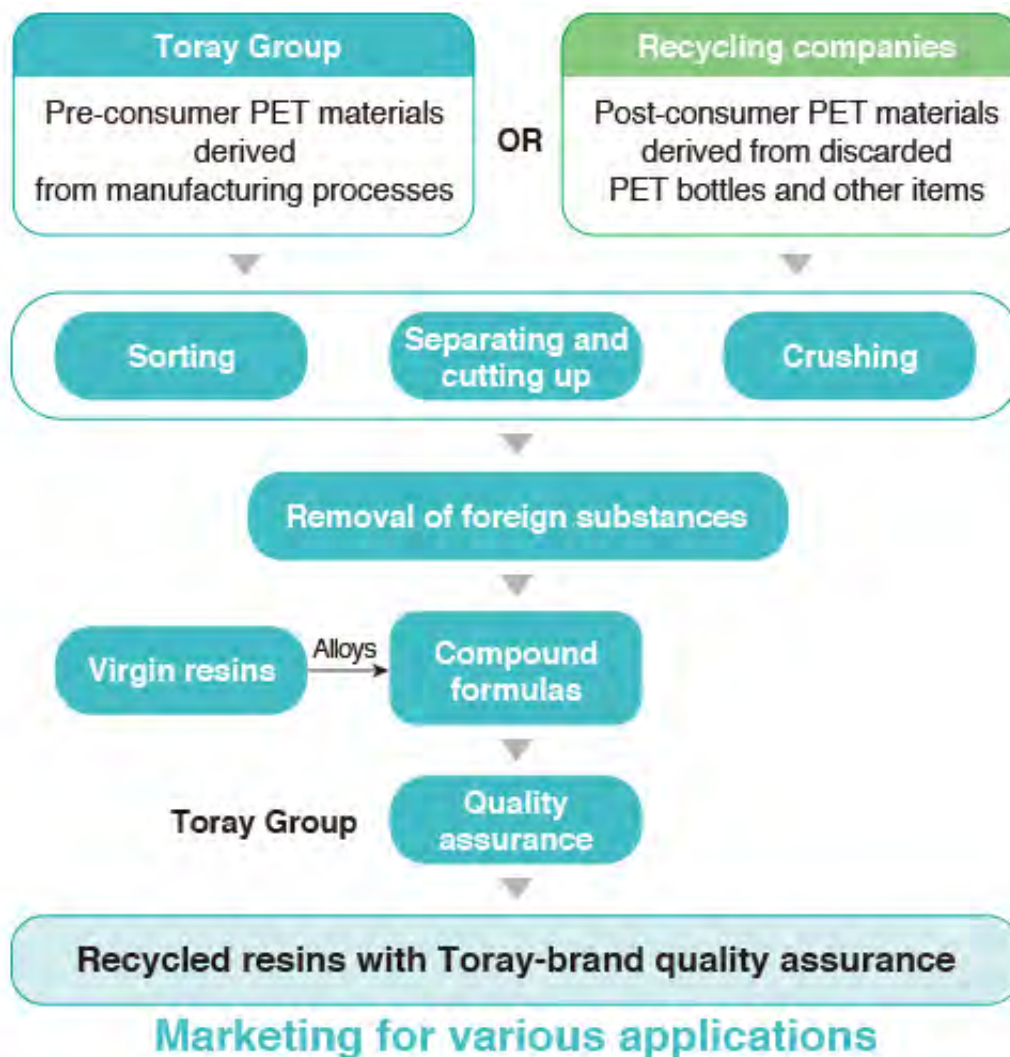


## Resin Recycling

The fans inside home air conditioners are designated for recycling under Japan's Act on Recycling of Specified Kinds of Home Appliances. While continuing to conduct closed-loop recycling (in which end-of-life products are recycled into the same product) of fans and other products, Toray is also diversifying its procurement sources for fans to address growing market needs.

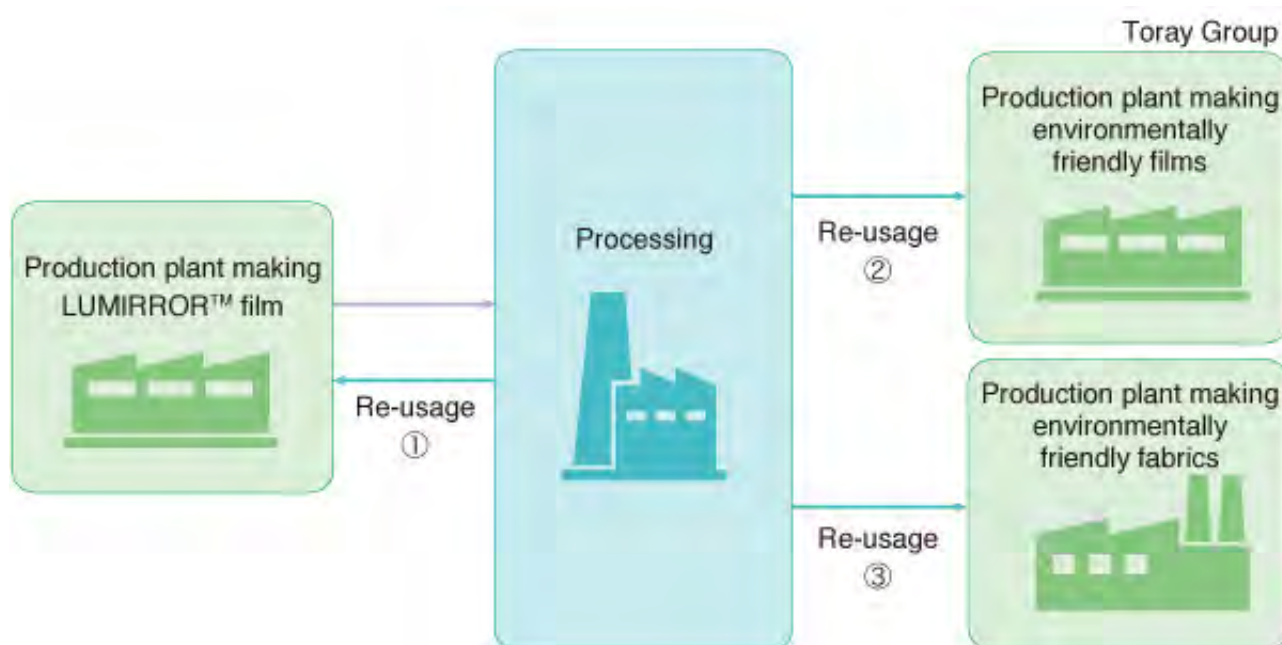
In addition, Toray actively engages in pre-consumer recycling, by reusing byproducts from internal manufacturing processes such as film scraps and fiber scraps. Furthermore, the Company promotes post-consumer recycling using PET bottle scraps and computer plastic scraps, in order to comply with green procurement regulations in and outside Japan.

### Pre-consumer/Post-consumer Recycling



## Film Recycling

Toray is recovering and processing raw materials used to make its LUMIRROR™ optical-use PET film and re-using them to produce environmentally friendly films and fabric products.



### Carbon Fiber Recycling

Carbon fiber is a lightweight material that significantly curbs CO<sub>2</sub> emissions over the entire lifecycle of the products in which it is used. It is viewed as an important tool for helping to solve global environmental issues. As a result, demand for carbon fiber is expanding across a wide range of applications, including aircraft and automobile parts. As demand grows, market expectations for the development of carbon fiber recycling technologies are also on the rise.

As a member of the Consortium for Carbon Fiber Recycling Technology Development (dissolved at the end of March 2015), Toray has taken steps to develop carbon fiber recycling technologies. The successful development of recycled carbon fiber and associated applications requires collaboration with a wide range of customers to explore various possibilities for use in specific parts and materials.

One example of this collaboration is the joint proposal made by Toray and Toyota Tsusho Corporation for the development of a highly efficient recycled carbon fiber manufacturing technology that uses an innovative and energy-efficient thermal decomposition method.<sup>7</sup> This proposal was selected by Japan's New Energy and Industrial Technology Development Organization (NEDO) as part of its fiscal 2015 "Strategic Innovation Program for Energy Conservation Technologies." This new technology uses combustible gas from matrix resin as the energy source for the thermal decomposition process, which is the process that consumes the most energy in this type of carbon fiber recycling. As a result, the companies expect to significantly reduce the amount of energy consumed in the recycling process.

In November 2016, Toray will start moving toward commercialization of this technology with the construction of a pilot plant, which will demonstrate energy-efficient recycled carbon fiber manufacturing technologies while also promoting the development of new applications for recycled carbon fiber.

<sup>7</sup> Thermal decomposition method: A recycling method in which carbon fiber is recovered by heating carbon fiber composite materials and thermally decomposing the matrix resins.



## Life Innovation Business Expansion Project

> Materiality Focus



Today, with the global population at over seven billion and life expectancy rising and birth rates declining not only in developed countries, but also in emerging countries, the world faces issues related to a rapidly aging population. The entire international community must find ways to provide healthcare that helps patients lead healthy, independent lives and ways to deliver high-quality medical care that reduces the burden on both patients and medical staff.

Recognizing that innovation is essential to solving these social issues, Toray introduced its Life Innovation Business Expansion Project in fiscal 2014. This project aims to apply the Group's technologies and business platforms to addressing social issues in the medical and healthcare field. The Life Innovation business was developed to help improve the quality of medical care, reduce the burden on medical staff, and contribute to health maintenance and longevity. The Toray Group selects important products and services for Life Innovation and is developing these businesses group-wide.

### Product Definitions and Guidelines

#### Improving the quality of medical care and reducing burden on medical staff

- Products used in medical treatment: Pharmaceuticals, therapeutic devices, materials/components related to preparation of therapeutic agents
- Products used in medical testing and diagnosis: Testing devices and diagnostic systems
- Supplies for hospitals: Functional, special-grade products
- Other: Analysis services, manufacturing equipment/facilities

#### Contributing to health maintenance and longevity

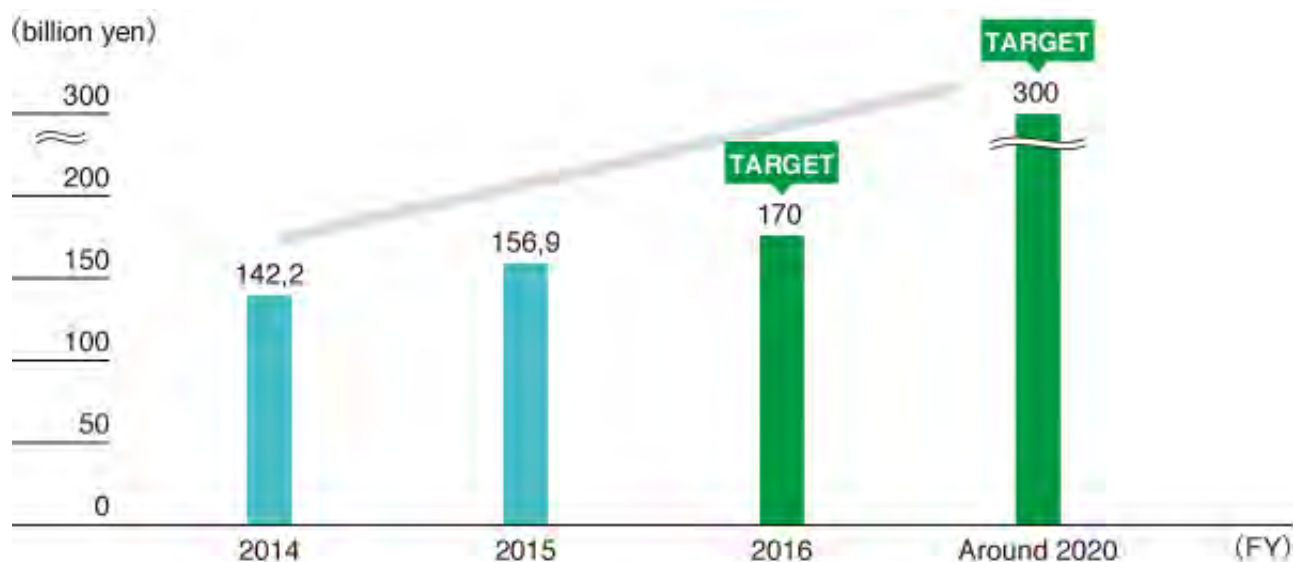
- Products that improve quality of life for the elderly, persons with disabilities, and patients
- Products that prevent diseases and disorders

- Nursing care products

Note: Includes materials and components used in the above products

The Toray Group's net sales from the Life Innovation business grew from 142.2 billion yen in fiscal 2014 to 156.9 billion yen in fiscal 2015. The Group has set a target of securing net sales of 170 billion yen by fiscal 2016.

**Sales of Life Innovation Businesses (Toray Group)**



## Fiscal 2015 Highlights

### Additional Indication for Pruritus Treatment REMITCH™ Capsules, Product Promotion Underway

In May 2015, Toray received approval of a new indication for REMITCH™ Capsules 2.5μg for improvement of pruritus in chronic liver disease patients. The approval of the new indication is expected to provide new treatment options for patients suffering from this disease.

Note: REMITCH™ is a registered trademark of Torii Pharmaceuticals Co., Ltd.

### Development of a Nucleic Acid Drug for Idiopathic Pulmonary Fibrosis

In December 2015, Toray acquired development, manufacturing and sales rights (excluding manufacturing rights of the active pharmaceutical ingredient) for the nucleic acid drug (BNC-1021/TRK-250) developed by BONAC Corporation, and at the same time accepted BONAC's new shares issued in third-party allocation. This drug is expected to treat patients diagnosed with idiopathic pulmonary fibrosis, which causes difficulty breathing and is registered as an



intractable disease by Japan's Ministry of Health, Labour and Welfare.

Nucleic acid pharmaceuticals are agents that act by utilizing the action of deoxyribonucleic acid (DNA) and ribonucleic acid (RNA) and may function as a new type of medication with fewer side effects. When commercialized, this drug is expected to be administered directly to the lungs with an inhaler, which will carry the agent efficiently to the target organ.

## Development of an Antiadhesive Material Based on Nano-Scale Polymer Thin Film Technology

In February 2016, Toray began joint development with Nanotheta Co., Ltd of a novel antiadhesive material that employs a nano-scale polymer thin film based on polylactic acid based polymer and can be used in intra-abdominal surgeries. The material is as easy to handle as gauze and is expected to function as an effective antiadhesive by acting as a protective film to prevent post-surgery adhesion.

## Full-Scale Marketing of New Hemodialysis Machine

In March 2016, Toray Medical Co., Ltd. launched general sales of the TR-3300S single-patient dialysis machine.

Most dialysis facilities employ systems that combine a dialysis monitor and single-patient dialysis machines. Using these new dialysis machines in combination with the TR-3300M dialysis monitor already on the market, automated dialysis without the need for physiological saline solution can be offered in almost all dialysis centers.

Operation procedure and disposable parts for the TR-3300S are standardized to other Toray dialysis systems to prevent human error such as machine operation error or blood tubing setup mistakes.



TR-3300S



Copyright © 2017 TORAY INDUSTRIES, INC.



# Governance

To maintain the confidence and support of society, the Toray Group employs a fair, effective governance structure and holds itself to a high standard of integrity.

With the strong leadership of top management, the Group takes a variety of actions to ensure that employees group-wide are fully aware of the importance of corporate ethics and legal compliance.

## Corporate Governance and Management Transparency

Management

Implementing CSR Activities and  
Improving CSR Education

## Corporate Ethics and Legal Compliance

Management

Prevention of Regulatory Infractions

Establishing a Corporate Culture of  
Total Respect for Corporate Ethics  
and Legal Compliance

Improving Training Related to Security  
Trade Controls

Compliance with Antitrust Laws and  
Anti-Bribery Rules around the World

Protection of Personal Information

## Risk Management

Management

Risk Management System and  
Initiatives

Business Continuity Plan Initiatives



Copyright © 2017 TORAY INDUSTRIES, INC.

## Corporate Governance and Management Transparency

**Continually revise management systems, strengthen internal controls and strive for timely and appropriate information disclosure as part of efforts to fulfill the company's social responsibilities**

### Fifth CSR Road Map goals

1. Enhance management transparency, continually reflect stakeholder feedback in management, and fulfill responsibilities to explain corporate activities
2. Perform monitoring based on the Basic Policy for Internal Control Systems, in accordance with Japan's Companies Act
3. Establish a group-wide management system for social responsibility, and stimulate initiatives by expanding training and education, etc.

### Management

From the outset, one of the Toray Group's managerial principles has been that the purpose of a company is to contribute to society. The Group has developed a Management Philosophy that incorporates this principle.

The Group's Management Philosophy is structured with the following components: the Corporate Philosophy, Corporate Missions, and Corporate Guiding Principles. The Corporate Missions specify the Group's commitment "To provide our shareholders with dependable and trustworthy management," and the Corporate Guiding Principles stipulate the Group's commitment to "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."

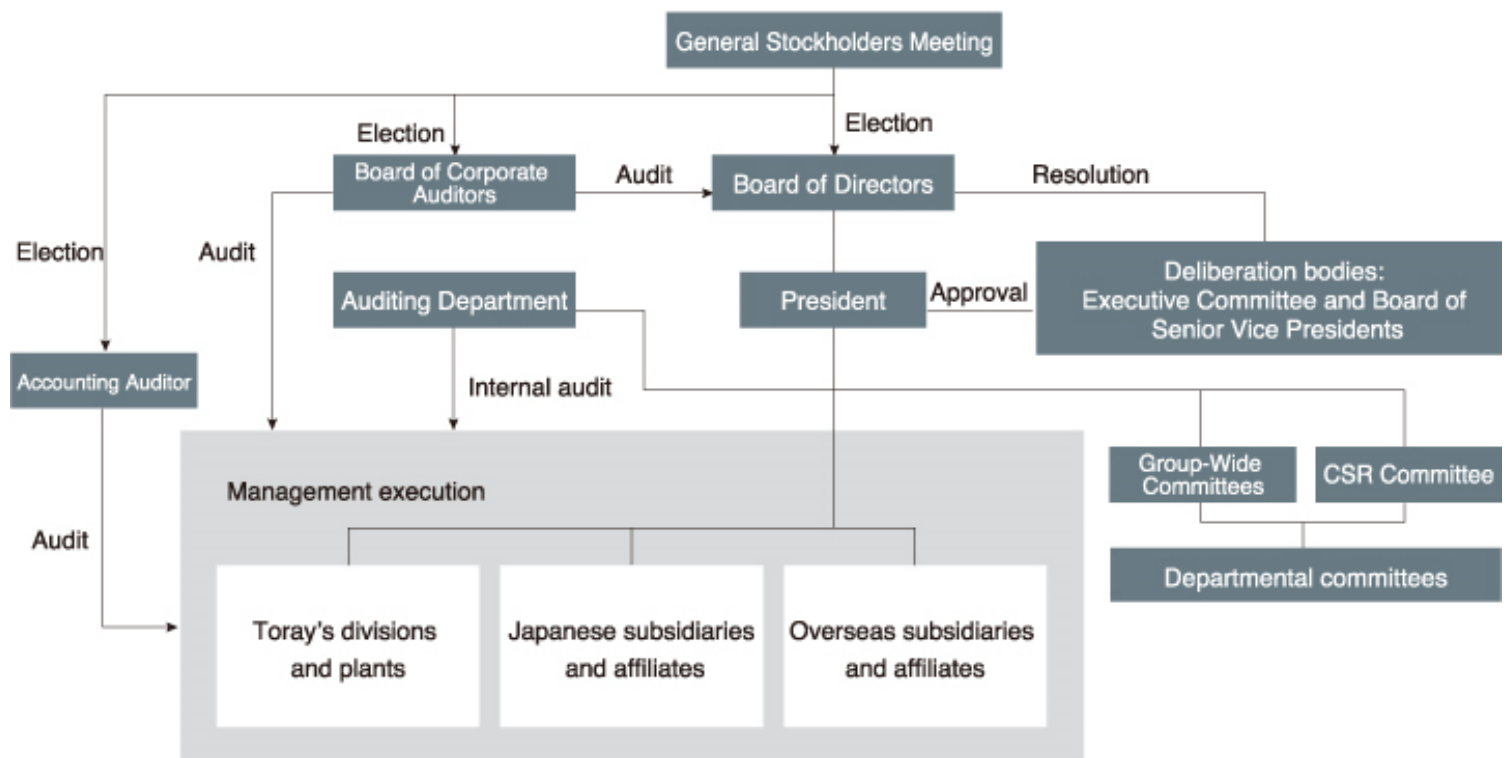
In all of its corporate governance efforts, the Group's basic policy is to live up to these philosophies.

### Toray's Management Structure

Toray's Board of Directors is made up of 25 members (two of whom are outside directors). The Toray Group operates in a broad spectrum of business fields at a global level. Business management and decision-making, as well as oversight, require expertise related to the day-to-day operations of Toray worksites. To that end, the composition of the Board of Directors is designed to ensure that members bring a diverse range of perspectives to management oversight and decision-making based on their expertise in the Group's businesses.

The Board of Corporate Auditors (four auditors, two of whom are outside corporate auditors) is entirely independent of the Board of Directors. Based on professional expertise in finance, accounting, and law, as well as an understanding of the Group's businesses, the Board of Corporate Auditors exercises oversight over directors' execution of their duties. In December 2015, the Toray Group formed the Governance Committee to serve as an advisory body to the Board of Directors. More than half of the members of this committee are outside directors, including the committee chairman. Remuneration for directors consists of monthly remuneration, a bonus and stock acquisition rights in the form of stock options; meanwhile remuneration for corporate auditors consists of monthly remuneration. The purpose of this structure is to ensure management transparency and fairness, and to provide enhanced incentives for the improvement of financial performance and corporate value in the short-, medium- and long-term perspectives. Furthermore, the amount of remuneration paid to directors and auditors is determined while taking into account the results of research conducted by a third-party organization to ensure an objective perspective.

## Toray Group's Corporate Governance System



### Related Information

- > [Corporate Governance](#)
- > [Corporate Governance Report](#)

## Ensuring Proper Business Conduct and Transparency



With the revision of its Basic Policy on Internal Control Systems, Toray began disclosing the status of internal control in its business reports in 2015. The Company will continue to make every effort to apply internal controls to ensure legal compliance, efficient execution of duties, information storage and management, and risk management against losses. Toray also employs internal guidelines on information disclosure and strives to secure management transparency, using its own indicators to measure information disclosure. As shown above, Toray reported a 76% achievement rate in fiscal 2015, slightly below its target.

In December 2015, Toray formulated its Basic Policy on Corporate Governance based on Japan's Corporate Governance Code and publicly released a Corporate Governance Report containing the information required.

### **Corporate Governance Report (Items)** Updated on June 29, 2016

- I. Toray's Basic Policy on Corporate Governance and Capital Structure, Corporate Attributes and Other Basic Information
- II. Organization of Management related to Management Decision-Making, Execution of Duties and Oversight, and other Corporate Governance Structures
- III. Implementation of Measures for Shareholders and Other Stakeholders
- IV. Items regarding Internal Control System
- V. Others

### **Related Information**

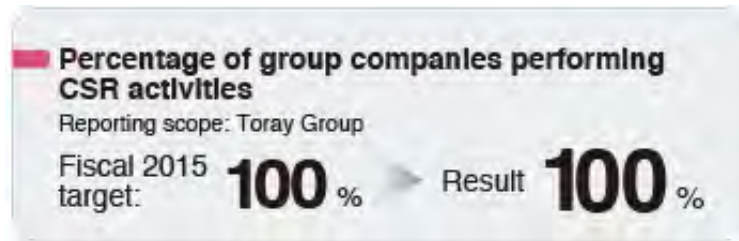
- [Basic Policy on Internal Control System](#)
- [Information Disclosure Principles](#)

## **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. In addition to briefing the union on management information, the meetings facilitate ongoing dialogue with the union. Resolution of labor issues is undertaken at separate Labor and Management Council meetings. As of March 2016, Toray Workers' Union membership stood at 8,451 workers.



## Implementing CSR Activities and Improving CSR Education



### Organizational Structure for Social Responsibility

The CSR Committee, which is chaired by the director in charge of CSR implementation and reports directly to the president, coordinates the activities of six group-wide committees. Furthermore, CSR/legal compliance committees have been established at each group company, division, and plant to help implement group-wide CSR activities.



At a meeting of the Toray Group Thailand CSR Committee, which is made up of representatives of seven worksites from four principal group companies in Thailand.

### Promoting CSR Initiatives in Every Workplace

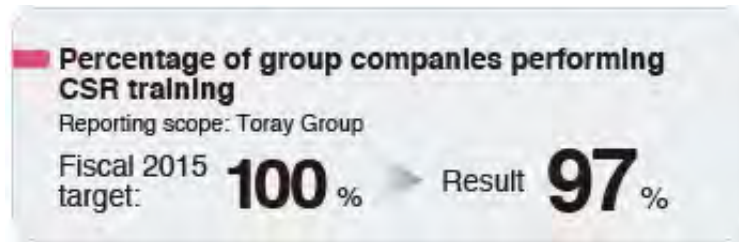
A special characteristic of Toray Group's approach to corporate social responsibility is its "CSR line activities," a unique employee participation system that emphasizes putting CSR into practice on the job. In every workplace, relevant departments present suggested tasks corresponding to each of the 10 items in the Group's CSR Guidelines. Based on those tasks, each workplace sets specific actions suited to their respective circumstances and continues to work accordingly.

#### Related Information

> [CSR Guidelines](#)



## In-House Training on CSR-Related Issues



The Toray Group strives to ensure that social responsibility is firmly rooted in its culture by providing various training opportunities. In April 2015, the Group distributed a CSR pamphlet (available in Japanese and English) to all employees.

The percentage of group companies that implemented CSR training in fiscal 2105 was 97%. The Toray Group was unable to achieve training at a full 100% of group companies due to the fact that certain companies had only just formed. In March 2016, representatives from the Toray head office provided a lecture at a training session for group companies in South Korea, and also attended a top management meeting of group companies in the South Korea to discuss issues related to CSR with presidents and executives.



Representatives of four principal group companies in South Korea meet for CSR discussions.

### **VOICE** Message from an Outside Director

#### **Applying my experience to strengthen Toray governance as management commitment is tested**

I have long believed that short-term management does not lead to long-term innovation and that the creation of sustainable value through collaboration between companies and investors is vital. Governance lays the foundation for earning stakeholder trust. Over the past two years, as companies have been expected to strengthen governance with the establishment of Japan's Corporate Governance Code and other regulations, Toray has bolstered its governance system with, for example, the revision of its Basic Policy for Internal Control Systems. The



**Kunio Ito**  
Outside Director

company now moves into the execution phase, when the level of commitment from management will be tested. I will draw on my professional experience to support all of Toray's efforts.



Copyright © 2017 TORAY INDUSTRIES, INC.

# Corporate Ethics and Legal Compliance

> Materiality Focus

**Ensure all executives and employees uphold a sense of responsibility, fairness and high ethical standards, and always act in accordance with the law to maintain the trust of society.**

## Fifth CSR Road Map goals

1. No major cases of non-compliance or violation notices throughout the Toray Group
2. Promote compliance activities in accordance with the conditions of each country or region
3. Enhance awareness-raising and educational activities relating to corporate ethics and legal compliance

## Management

The Toray Group recognizes the absolute importance of compliance with laws, regulations, and social norms. Top management takes a clear position on corporate ethics and legal compliance in the execution of their own duties and guides the entire Group's approach to compliance.

## Framework for Promoting Corporate Ethics and Legal Compliance at Toray

Toray operates a Corporate Ethics Committee chaired by the president. The committee oversees corporate policies relating to corporate ethics, and implements initiatives through the joint efforts of labor and management. As a subordinate organization of this committee, Toray operates a Company-Wide Legal Compliance Committee comprised of section managers of worksites which communicates with senior management and addresses company-wide compliance issues. This committee shares the approach of top management and the policies determined by the Corporate Ethics Committee, while also reporting progress on corporate ethics and legal initiatives on the frontlines to senior management. Furthermore, CSR/legal compliance committees are operated at the divisional and plant levels to implement initiatives rooted in the workplace and carried out by all employees.

# Framework for Promoting Corporate Ethics and Legal Compliance at Toray



Toray has established CSR/legal compliance committees at its group companies in Japan, and appointed executives and section managers in charge of legal compliance. Furthermore, relevant departments at Toray's headquarters collaborate to hold a group-wide corporate ethics and legal compliance meeting annually to improve understanding of revised laws and particular issues.

CSR/legal compliance committees have also been established at Toray's group companies around the world. With support from Toray's International Division, CSR Operations Department, and other relevant sections, the committees independently promote initiatives related to legal compliance and corporate ethics.

## Company-wide Activities in Fiscal 2015

Toray established or undertook the following company-wide initiatives in fiscal 2015 relating to corporate ethics and legal compliance. Group companies in and outside Japan also work independently on their own activities based on these initiatives.

- Introduced self-monitoring and mutual inspection system for internal control
- Provided thorough training on security trade controls
- Provided all employees with comprehensive information on antitrust laws and anti-bribery rules around the world
- Implemented initiatives to ensure strict compliance

## Prevention of Regulatory Infractions



In fiscal 2015, Toray experienced no incidents of major violations of laws or ordinances and no imposition of sanctions or fines.

Toray recognizes the importance of raising awareness of corporate ethics and legal compliance throughout the entire Group in order to continue its record of zero violations. The Company renamed its Legal Department the Legal & Compliance Department in October 2015, and established a dedicated compliance team in the department.

In response to the amendment of the Companies Act of Japan, Toray introduced a self-monitoring and mutual inspection system for internal control in fiscal 2016 as part of its efforts to strengthen the system of checks across all group companies.



# Establishing a Corporate Culture of Total Respect for Corporate Ethics and Legal Compliance

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

The Corporate Ethics and Legal Compliance Code of Conduct is a strict set of standards that every Toray Group executive and employee closely follows when performing corporate activities. In the event that a violation is discovered, strict discipline is carried out in consultation with the Company's Rewards and Sanctions Committee. All Toray executives and employees, including contracted, part-time and dispatched workers, receive a copy of the Corporate Ethics and Legal Compliance Handbook, which explains expectations for proper conduct in detail. All employees are expected to be well-versed in the stipulations of this code. In fiscal 2015, this handbook underwent a sizable revision. Items were added and amended as needed to reflect laws, internal policies and manuals that had been introduced or changed since the previous revision of this handbook. The overall content of the handbook was also enhanced and expanded. The latest revision expands the scope to include group companies in Japan. Toray is currently working to cover all operations by developing guidelines and handbooks tailored to each of the countries and regions in which it operates.



### Main Content of the Corporate Ethics and Legal Compliance Handbook

- Carrying out proper transactions based on free, fair, and transparent market competition (compliance with Japan's Antimonopoly Act, Subcontract Act, and Act against Unjustifiable Premiums and Misleading Representations)
- Protecting the intellectual property rights of Toray and other companies
- Respecting local laws and regulations in all countries where Toray Group operates
- Respecting human rights and prohibiting all forms of discrimination
- Using proper accounting practices (complying with all relevant laws including Japan's Companies Act, all tax-related laws, and the Financial Instruments and Exchange Act)
- Complying with Japan's Foreign Exchange and Foreign Trade Act, Political Funds Control Act, and Public Offices Election Act
- Prohibiting any form of bribery involving stakeholders
- Corporate Ethics and Legal Compliance Helpline, an internal hotline system
- Framework for promoting corporate ethics and legal compliance at Toray

## Related Information

> Corporate Ethics and Legal Compliance Code of Conduct

## Corporate Ethics and Legal Compliance Education



Toray posts information on CSR and legal compliance on its corporate intranet, and conducts monthly workshops at worksites where it reviews cases of external corporate misconduct. In addition, Toray relays important information about Japanese and other national legislation that relates to its business, such as antitrust laws, labor laws, and anti-bribery rules, to all group companies including those outside Japan.

Beginning in fiscal 2012, Toray has provided online training courses covering corporate ethics and legal compliance for all employees, including contracted, part-time and dispatched workers. In fiscal 2015, the training covered the Corporate Ethics and Legal Compliance Helpline. Group companies in Japan also conduct training using the same training materials.

## Expanding the Whistle-Blowing System

Toray established the Corporate Ethics and Legal Compliance Helpline as a whistle-blowing system in fiscal 2003 and expanded the system to include all Toray Group companies in Japan in fiscal 2010. Toray expects employees to take the initiative in managing conduct with regard to corporate ethics and legal compliance, and to consult with a supervisor as soon as an issue arises.

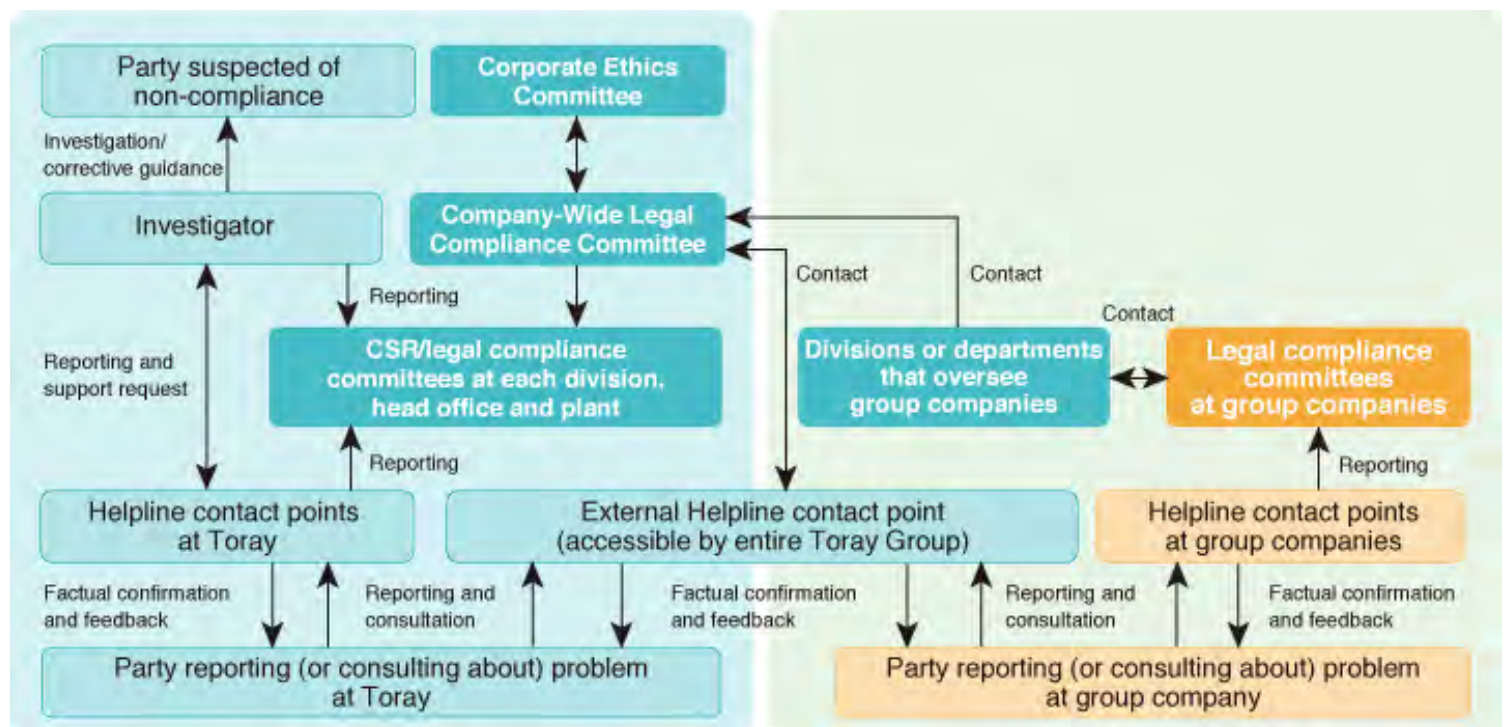
Recognizing that reporting or consulting with supervisors may be difficult, Toray ensures that employees have access to

alternative means of reporting and consulting at each of its divisions, departments, offices and plants, as well as through the labor union. Employees can also use a dedicated hotline or email service to directly contact the secretariat of the Company-Wide Legal Compliance Committee. In fiscal 2015, members of the Legal & Compliance Department joined this secretariat and the department began to serve as a Helpline contact point.

In addition, each Toray Group company in Japan has established a Helpline contact point. Moreover, Toray has also created an external Helpline contact point shared by all group companies in Japan to make it easier for employees to report and consult.

Toray also works to review and improve whistle-blowing systems for group companies outside of Japan. The Helpline has also been made available at certain companies and in certain regions, and Toray plans to roll it out globally, going forward.

## Corporate Ethics and Legal Compliance Helpline System (Toray and its Group Companies in Japan)



Copyright © 2017 TORAY INDUSTRIES, INC.



# Improving Training Related to Security Trade Controls

## Providing Thorough Training

The Toray Group recognizes that to effectively execute security trade controls it is essential to raise employee awareness of these issues and thoroughly train staff in the necessary expertise and management procedures. In order to boost the abilities of employees in this regard, the Group conducted 13 different types of training focused on specific topics for a total of 872 employees in fiscal 2015.

Furthermore, the Toray Group has been arranging for employees to take an exam authorized by the Center for Information on Security Trade Controls in Japan to test their abilities related to imports and exports governed by security trade controls. In fiscal 2015, a total of 308 Toray Group employees passed the exam, bringing the cumulative total of Toray Group employees who have passed the exam to 2,809.

## Executing Best Practices

The Toray Group performs risk management of security trade controls with regard to the export of products, devices, materials, and samples, as well as the transfer of technologies outside Japan. Particularly strict management is necessary for TORAYCA™ carbon fiber and its composite materials, semiconductor coating agents, and water treatment membranes, which are listed as restricted items requiring export permission from the Japanese Minister of Economy, Trade and Industry.

The following measures to enhance risk management associated with security trade controls have been implemented based on conditions in and outside of Japan.

### 1. Enhanced employees' capacity for accurate judgment

To correctly identify products and technologies categorized as restricted items, export control compliance checks conducted by employees are critical. Toray has created an original template to ensure simple yet highly reliable inspection and verification. In April 2015, the Company launched a new system that ensures that employees use the template efficiently. Toray developed and conducted special training sessions for users of this new system at major Toray offices and plants.

### 2. Conducted regular audits

Toray carried out paper audits and onsite audits of group companies, and provided individualized guidance based on the results to help group companies make improvements.

### 3. Enhanced information sharing and reporting

Toray integrated and centralized information on concerns such as suspicious trade inquiries, reported or consulted with the appropriate authorities as required, and took the appropriate measures. The Company also shared suspicious trade information at various company meetings, and took steps to improve its risk management.

#### **4. Improved inspection systems**

Toray pursued its three-year plan for developing the next security trade control system. As a result of the first stage of development, the Company launched a system in April 2015 to efficiently and unerringly conduct export control compliance checks and issue compliance certificates. In the second stage of development, Toray will develop a function to manage reviews of business deals.



Copyright © 2017 TORAY INDUSTRIES, INC.

# Compliance with Antitrust Laws and Anti-Bribery Rules around the World

## Training, Compliance Education, and Auditing

The Toray Group prepares compliance training materials and gathers examples of compliance violations to ensure that employees comply with national antitrust laws. Regular compliance training is also conducted, including at group companies outside Japan. With regard to regulations in and outside of Japan relating to bribery, from fiscal 2014 to 2015, voluntary standards regarding anti-bribery were formulated at group companies in Japan and at group companies at particular risk outside Japan. In fiscal 2015, the Group conducted 25 in-house audits.



Copyright © 2017 TORAY INDUSTRIES, INC.

## Protection of Personal Information

Toray operates internal rules for the management of personal information and conducts regular departmental inspections. Toray is currently working to verify that its group companies in Japan have appropriate rules in place for managing personal information.



Copyright © 2017 TORAY INDUSTRIES, INC.

## Disclosure of Information Regarding the Ethical Treatment of Laboratory Animals

Toray Industries Inc. carries out research and development on pharmaceuticals and medical device with the objective of contributing to human development and health enhancement through these productions. To evaluate the efficacy and safety of pharmaceuticals and medical device, it is necessary to conduct experiments using animals. Toray understands that such experiments must be carried out in an ethical manner from the perspective of animal welfare and the respects for life.

In order to ensure that animal experiments are conducted ethically, Toray has established its own in-house rules including the Guideline for the Animal Experiments on the basis of Japan's Act on the Welfare and Management of Animals, the Standards relating to the care and management, etc. of experimental animals, the basic policy on conducting animal experiments by organizations under the jurisdiction of the Ministry of Health, Labour and Welfare of Japan, and other related laws and guidelines. In accordance with its in-house rules, Toray has set up the Animal Care and Use Committee and strictly examines the appropriateness of animal experiments performed inside the company based on the 3R principles for animal experiments: refinement (minimization of pain), reduction (lowering the number of animals used), and replacement (preferred use of alternatives to animals).

Toray independently inspects and evaluates the results of animal experiments that have been conducted to confirm that they have been performed ethically. The company also provides its researchers with periodic training and education on animal research and ethics, and assists them in acquiring certification related to the handling of laboratory animals. Furthermore, Toray makes proactive efforts to collect relevant information by participating in academic conferences. Finally, Toray holds memorial services every year as a way to express its respect and appreciation for the laboratory animals that have been sacrificed for its research on pharmaceuticals and medical device.

In recognition of its efforts to care for laboratory animals and conduct animal experiments in an ethical manner, as described above, Toray was certified as an organization conducting animal experiments by the Japan Health Sciences Foundation in fiscal 2012.



Copyright © 2017 TORAY INDUSTRIES, INC.

## Risk Management

**Enhance group-wide risk management systems including those pertaining to information security. Build systems capable of rapidly responding to unexpected circumstances and disclosing accurate information.**

### Fifth CSR Road Map goals

1. Strengthen corporate risk management throughout the Group and reduce risks in global business development
2. Prepare and effectively operate business continuity plans for major earthquakes and influenza pandemics
3. Ensure implementation of information security measures and reduce number of incidents

### Management

The Toray Group believes risk management is a fundamental element of corporate management and periodically identifies potential management risks to reduce and prevent risks from materializing. The Group employs Crisis Management Regulations that set procedures for establishing an Emergency Quick Response System in the event of a major emergency to mitigate damage and rapidly secure business continuity.



Copyright © 2017 TORAY INDUSTRIES, INC.

## Risk Management System and Initiatives

### Developing a Risk Management System



Toray has established a Risk Management Committee under the CSR Committee to regularly monitor the progress of risk reduction measures across all group companies and conduct planning and promotion of risk management measures. Under the Risk Management Committee, local risk management committees have been established at each of Toray's divisions, departments, offices, and plants.

Group-wide measures determined by the Risk Management Committee are given to local risk management committees, which then incorporate these measures in their own initiatives to reduce risks particular to their respective division, department, office or plant, while carrying out coordinated risk management activities.

At group companies around the world, risk management systems are established under the leadership of their presidents. The system promotes initiatives to reduce the specific risks faced by each company. Each group company reports on the results of these initiatives to Toray's Risk Management Committee every fiscal year.

Toray evaluates overall risk and identifies priorities according to the scale of a risk's potential impact on the Toray Group's business. These issues are incorporated into plan-do-check-act (PDCA) cycles to reduce the risk that they pose.

### Toray Risk Management System



## PDCA Cycle for Enterprise Risk Management







Priority risks are reevaluated every three years, when Toray revisits initiatives to address the Company’s latest set of priority risks. In fiscal 2015, the initial year of the current three-year term, Toray focused on mitigating risk through a framework led by the department and/or cross-departmental working group responsible for implementing measures for each identified risk. As a result of these efforts, Toray surpassed its target for priority risks improved in fiscal 2015.

Group companies around the world identify their own specific priority risks and implements measures to reduce these risks, with Toray’s policy on handling priority risks as a guide.

Other major risks are managed separately from the priority risk schemes. The relevant departments are responsible for addressing these risks on an ongoing basis.

## Measures Implemented by Working Groups

### 1. Supply chain risk reduction

In fiscal 2015, in addition to revising its CSR survey for suppliers, Toray reviewed ways of addressing global human rights issues in the Toray Group supply chain. The Toray Group conducts checks for the use of conflict minerals<sup>1</sup> in all products and has been working to make its responses to customers’ requests for surveys quicker and more efficient by integrating data management.

<sup>1</sup> The four minerals of gold, tin, tantalum and tungsten mined in the Democratic Republic of Congo and the nine surrounding countries. The aim is to cut off sources of funding for armed groups in the Democratic Republic of Congo by imposing disclosure and reporting obligations on manufacturers that use conflict minerals.

### 2. Maintaining information security

The Toray Group continues to offer information security training via its online course. In fiscal 2015, 12,729 people at 14 group companies around the world utilized the group-wide online training system to participate in information security training.

Recognizing the increasing risk of targeted threats, Toray revised its Toray Group Electronic Information Security Policy based on security measure guidelines issued by the Information-Technology Promotion Agency Japan (IPA) and other resources.

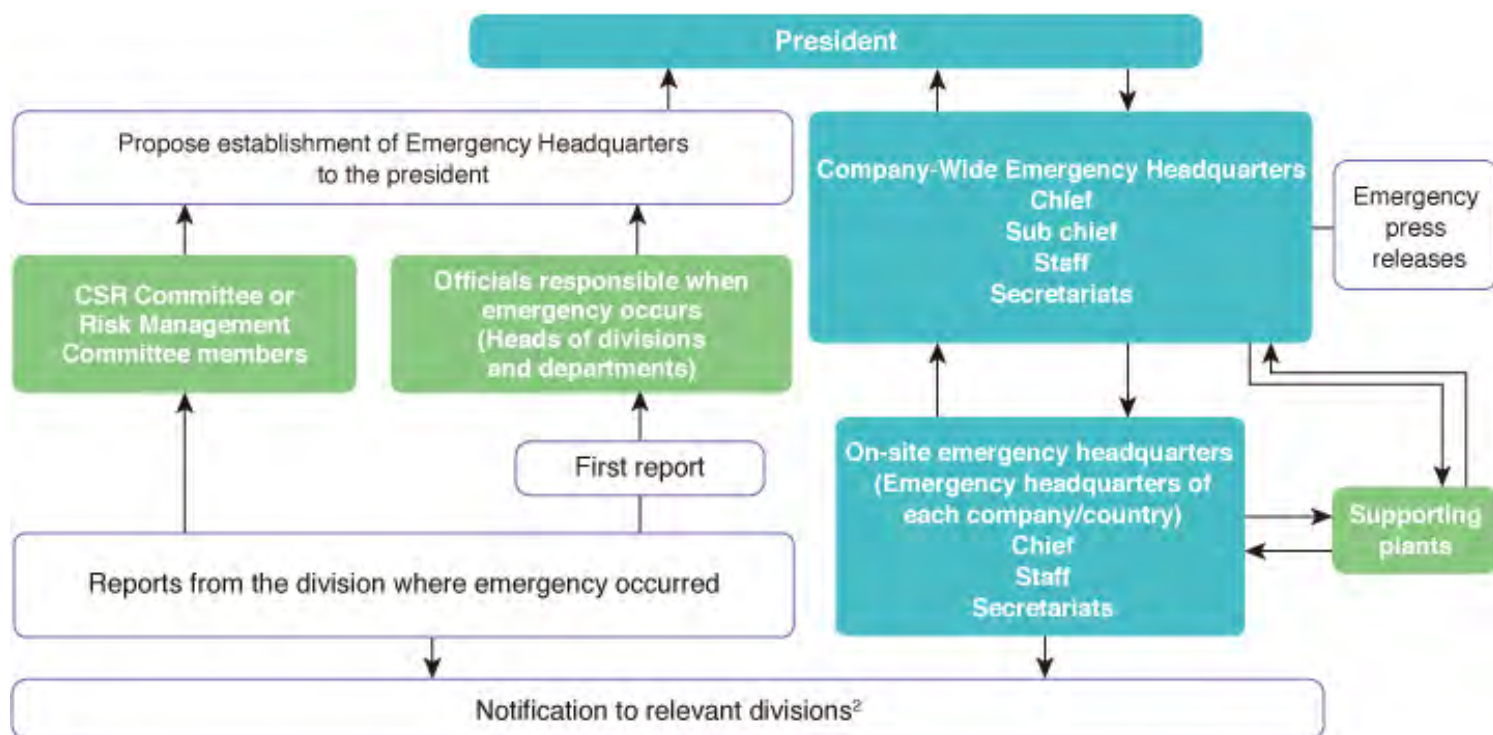
### Addressing Existing Major Risks

Toray is promoting ongoing risk reduction activities through group-wide committees that deal with existing major risks separately from the priority risk reduction measures. They include legal compliance, changes in raw material markets, business strategy, fluctuations in exchange rates and economic conditions, and security trade controls. Progress is reported to the Board of Directors as necessary.

## Crisis Management Systems

The Toray Group has established Crisis Management Regulations, a set of clear fundamental principles that form the basis of a company-wide response in the event of a major crisis. The Group works to ensure the thorough implementation of these regulations when required. Moreover, the Group reviews these regulations as appropriate to prepare for new risks that emerge due to changes in the social environment.

### Emergency Quick Response System



<sup>2</sup> Notification is conducted according to the Emergency Reporting Route for Significant Disasters, Environmental Accidents, and Other Crisis Outbreaks.



Copyright © 2017 TORAY INDUSTRIES, INC.

## Business Continuity Plan Initiatives



### Ensuring Preparedness for Major Earthquakes

The Toray Group has long taken seriously the risks posed by destructive earthquakes and has been carrying out initiatives based on its Major Earthquake Business Continuity Plan.

In fiscal 2015, Toray continued with work begun in fiscal 2014 to set up an employee safety verification system at group companies in Japan, conduct systematic seismic upgrades for plant buildings, and verify business continuity planning for products with a high social relevance.

Toray has carried out drills to practice setting up company-wide emergency response headquarters

since fiscal 2012. In fiscal 2015, this drill simulated a disaster scenario in which a major earthquake along the Nankai Trough caused extensive damage to group companies and plants situated in parts of Japan in Shizuoka Prefecture and further west. This year, Toray raised the level of training difficulty by not disclosing certain parts of the scenario.

To prepare for an earthquake with an epicenter directly under the Tokyo metropolitan area, Toray revised the Tokyo Head Office's Emergency Response Plan for Major Earthquakes for the first time in three years. The latest version has been distributed to all employees at the Tokyo Head Office and the information discussed and reviewed. Additional functions were also added to the Toray Disaster Map System, which was introduced after the 2011 Great East Japan Earthquake. The system is designed as a tool to help quickly and accurately ascertain damage sustained by group companies and Toray business partners in the aftermath of a disaster.



Employees practice setting up company-wide emergency response headquarters during training.

### Addressing Influenza Pandemics

Toray's recent preparedness efforts for influenza pandemics included revising the Toray Group Influenza Pandemic Response Plan in June 2015 to address high and low pathogenic viruses. Along with the revision, Toray's offices and plants reviewed existing risk management systems and measures to control infectious disease in the case of human-to-human transmission of infection in Japan and began rolling out an updated system and measures in fiscal 2015.



Copyright © 2017 TORAY INDUSTRIES, INC.



# Social Initiatives

Toray Group respects diversity in all areas including human rights and hiring, and strives to facilitate a work-life balance that puts people first. The Group practices CSR procurement in cooperation with business partners, and seeks to build trust by practicing good communication and listening to feedback from stakeholders about all of its social initiatives.

## Human Rights Promotion and Human Resources Development

Management

Committed to Human Rights

Developing and Retaining Human Resources to Create New Value

Promoting Diversity

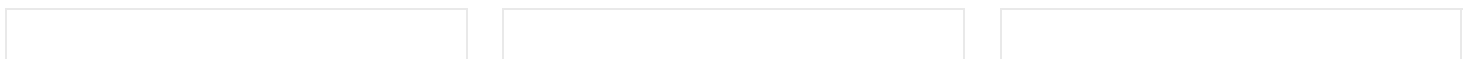
Creating a Positive Workplace for Employees

## Product Safety and Quality

Management

Initiatives for Product Safety and Quality Assurance

## Facilitating CSR Initiatives Throughout the Supply Chain



Management

Toray Group's GSR Procurement,  
Purchasing and Distribution

Toray Group Distribution Initiatives

## Communication

Management

Communication via Corporate  
Websites

Communication with Customers

Communication with Stockholders  
and Investors

Communication with Business  
Partners

Communication with Employees

Communication with the Media

Communication with Local  
Communities

## Social Contribution Activities

Management

Fiscal 2015 Result

Education

The Environment

Local Communities

Social Initiative Action Plan for Fiscal  
2016 and Beyond

Toray Science Foundations in ASEAN



Copyright © 2017 TORAY INDUSTRIES, INC.

# Human Rights Promotion and Human Resources Development

**Secure and train personnel, diversify and strive to protect employment, respect human rights, and continuously improve workplaces**

## **Fifth CSR Road Map goals**

1. Respect for human rights and fair promotion based on ability throughout the Toray Group by eliminating discrimination based on race, gender, education, nationality, religion, and physical attributes
2. Build a vibrant and rewarding workplace culture
3. Actively provide employees with educational opportunities, and secure and foster human resources who can play a vital role on a global stage

## **Management**

### **Human Rights Promotion System**

Toray has established a Human Rights Promotion Section in its Industrial Relations Department and has formed a Company-Wide Human Rights Promotion Committee along with sub-committees at the office and plant level. In addition, Toray has appointed human rights advocates in each workplace who are dedicated to making the working environment more pleasant and productive.

#### **Toray's Human Rights Promotion System**



Copyright © 2017 TORAY INDUSTRIES, INC.



## Committed to Human Rights

> Materiality Focus

At the Toray Group, respect for human rights is a mandatory management principle for ensuring the continuity of corporate activities and building positive relationships with all of the Group's stakeholders. The Group works to promote and raise awareness of human rights, for instance by declaring its commitment to the respect of human rights in its Corporate Ethics and Legal Compliance Code of Conduct. In the Code, discrimination of any kind based on race, creed, skin color, gender, religion, nationality, language, physical characteristics, socioeconomic status, place of birth, or any other personal characteristic is strictly forbidden in every process from recruiting and hiring to work placement, compensation, training, and retirement. In fiscal 2014, the Group expanded its commitment, also banning discrimination on the basis of sexual orientation or gender identity.

The Toray Group takes stringent measures to ensure compliance with all laws and regulations in the countries and regions around the world where it operates. The Group respects international standards related to human rights, including the United Nations Universal Declaration of Human Rights and the International Labour Organization's standards, prohibits all forced labor and child labor, and strives to ensure that its activities do not violate or in any way abet the violation of human rights.

Moreover, reflecting recent perspectives on global human rights in the international community, Toray formed the Human Rights Risk Working Group in fiscal 2015. Part of the Risk Management Committee, which serves under the CSR Committee, this working group is working to review measures to reduce the risk of human rights violations across the Toray Group. The working group began by conducting surveys and interviews at business sites outside Japan to assess current conditions.

### Human Rights Training



Toray holds human rights promotion campaigns annually to help increase awareness and understanding of human rights issues. In fiscal 2015, the campaign focused on building positive and caring workplaces by encouraging sensitivity to human rights on the part of each employee through better communication. The campaign was aimed at preventing sexual, power, and maternity harassment (the latter being discrimination against women who become

pregnant) by fostering a corporate climate that respects the dignity of others. The campaign also encouraged an understanding of the rights of lesbian, gay, bisexual, transgender (LGBT) persons, while communicating the increasing global emphasis that is being placed on human rights from a social responsibility perspective.

Training sessions were held for operational and administrative supervisors at the head office, and each office and plant. Workshops were also conducted in conjunction with workplace study groups. As in the previous year, in fiscal 2015 the Human Rights Promotion Section Manager visited Toray and its domestic group companies' offices and plants as part of the campaign, and held workshops for human rights advocates. Human rights training seminars were conducted at 53 group companies in Japan.

### Fiscal 2015 Human Rights Training and Seminar (Toray Group in Japan)

Type of training		Number of sessions	Number of participants
Toray	Training at head office <sup>1</sup>	48	2490
	Training at offices and plants	1,029	14,748
	Training at outside company	54	95
Group companies in Japan	Training at companies	159	9,779
	Training at outside company	125	198

<sup>1</sup> Total amount of time dedicated to training: 141,940 minutes



Copyright © 2017 TORAY INDUSTRIES, INC.

## Developing and Retaining Human Resources to Create New Value

> Materiality Focus



The success or failure of a company is decided by its people—employees shape its destiny. Guided by this concept, the Toray Group considers securing and developing outstanding human resources as one of its most important tasks and a fundamental management priority. The Toray Group works to secure and develop human resources that operate on a global level with strong aspiration and ambition to develop global business operations.

Based on the following three goals, the Toray Group is promoting human resource development.

- Development of fair-minded individuals who act with high ethical standards and a sense of responsibility
- Training of professionals with advanced expertise, technical skills and originality in problem solving
- Development of leaders who act with foresight and a sense of balance

To achieve these goals, the Toray Group conducts various kinds of training programs tailored to each of the three goals. These programs are systematic and logically organized, and they are offered to employees of all levels working in every field in the Group. With a view to strengthening international operations, Toray Group has designed the training to improve management capabilities, sales performance, production technical skills, and specialized skills.

In managerial level training, a new Executive Management Seminar was launched in fiscal 2013 to develop top management candidates for Toray and its group companies. This training is in addition to existing programs such as the Toray Management School and Toray Group Management School, which aim to foster the lead managers of the future; Manager Training for New Appointees, which is designed to teach the management skills and know-how essential for administration and professional duties; and Management Basic Training which focuses on early development of the frontline leaders of the future.

To cultivate professional expertise, the Group offers Strategic Marketing and Merchandising Training; Mid-level Engineer Training; the Practical Sales Course; and the Technical Management Course. In addition, voluntary training programs are prepared for employees who wish to develop their abilities even further.

In more recent years, the Toray Group has been enhancing and pursuing the development of international human resources. In addition to its Overseas Junior Training Program, the Toray Business English School opened in fiscal 2011.

The Group is also working to improve its Business English Proficiency Course, and has increased the number of joint sessions of its Toray Management School and International Senior Management Seminar.

The Group is focusing on ongoing initiatives to secure and develop diverse personnel regardless of gender or nationality, and to develop a vibrant and rewarding workplace culture. Since fiscal 2013, Toray has conducted global diversity seminars for its non-Japanese employees, with the fifth seminar held in fiscal 2015.

With the addition of these and other new programs, Toray's training investment per employee has gradually increased to an average of 101,924 yen per employee in fiscal 2015.

In addition to training, the Group is adopting diverse personnel programs to develop an organization in which human resources who are ready for new challenges can play a greater and more active part in the company.

### Toray's Personnel System

Management-by-objectives system <sup>2</sup>	Each employee establishes annual objectives. 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 <sup>2</sup>	Designed to facilitate a fair appraisal of employee contributions in terms of duties, responsibilities, capabilities, and performance.
Individual meeting system <sup>2</sup>	Employees meet with their supervisors twice a year in a one-on-one setting. Supervisors provide consultation on employee performance and new objectives.
Self-assessment system for managers, occupational specialists, and G Course <sup>3</sup> employees	Employees are surveyed annually on topics concerning work experience and desires for interdepartmental transfer. Surveys can then be linked to individual personnel transfers and placement.
Career assessment system for G Course <sup>3</sup> employees	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	Employees are given an opportunity to apply for jobs inside the Company and proactively develop their career, while ensuring optimal staff assignment.

2 Applies to 100% of managers, occupational specialists, and employees pursuing G Course<sup>3</sup> and S Course<sup>4</sup> career paths.

3 An abbreviation for Global Level Assignment Course, the G Course is the career path for employees who wish to pursue a career at the Toray Group in a top management position or advanced specialization.

4 An abbreviation for Specified Assignment Course, the S Course is the career path for employees who wish to pursue a career as a manager, supervisor or expert in a specified occupation.

### Systematic and Effective Training

## Company-Wide Training Course Enrollment in Fiscal 2015

Training category	Persons enrolled
Management	722
Technical	657
Sales, marketing, and administration	374
Global	279
General	354
General	2,386

### Early Leadership Development

To foster exceptional group management, Toray established the Toray Management School in 1991, designed to develop young mid-level managers into future executives. As of fiscal 2015, a total of 480 employees have participated in the school's programs over 24 terms. In 2006, the Toray Group Management School was established to foster future senior management and leaders for Toray Group companies. As of fiscal 2015, a total of 199 employees have participated in the school's programs over the ten terms.

Through Manager Training for New Appointees and Management Basic Training, Toray is developing outstanding frontline leaders by educating section and unit managers on coaching skills<sup>5</sup> and boosting their problem-solving skills. The Company has also established the Toray School of Technology and Business for training mid-level employees at plants. It offers selected employees a year of full-time education in a live-in schooling environment.

<sup>5</sup> Coaching skills: Communication skills designed to promote a greater degree of autonomous action by staff.

### Establishing a Global HR Management Fundamental Policy

The Toray Group established its Global HR Management ("G-HRM") Fundamental Policy in November 2011, with the goal of managing human resources from a common perspective shared by the entire Group, thereby surmounting differences between countries, regions, cultures, customs, and individual companies.

Under the policy, Toray practices a united approach to human resources management of each group company.

**Toray Global HR Management ("G-HRM") Fundamental Policy**    Established November 2011

True to its philosophy, “Contributing to society through the creation of new value with innovative ideas, technologies and products” and its embodiment through “Innovation,” and in order to continue being a highly valuable corporate group for every stakeholder, Toray focuses on recruiting, retaining, and developing employees with high aspirations for the Toray Group, with the understanding that “Human Resources” are the most important asset in management.

As Toray Group continues to promote further business growth and expansion, we set the following four principles as the Toray G-HRM Fundamental Policy, despite all differences between countries, regions, cultures, customs, and companies in order to facilitate HR management with a common basis for all Toray Group companies around the world.

Step by step, each company is encouraged to implement and maintain a concrete HR management system in line with the following Toray G-HRM Fundamental Policy. However, at the same time, it is essential to value the merits of local HR management in each company based on the individual circumstances of country, region, culture, custom and company. Thus, it is necessary to promote the policy while integrating both approaches properly.

**1. Consistently recruit and retain core staff and promote long-term HR development programs**

- (1) Consistently recruit core staff based on mid/long-term HR management views.
- (2) Sustain long-term HR development through promoting individual career development, implementing timely assessments of development progress, and carrying out on-the-job training (OJT), together with training programs (Off-JT) and self-development.
- (3) Promote HR development by following up on each individual through MBO (Management by Objectives) and performance appraisal systems.

**2. Select and develop core staff who can win a place in the global competition**

- (1) Recruit highly capable staff who understand and support Toray’s corporate philosophy, regardless of nationality.
- (2) Provide selected staff with opportunities for sophisticated high-level training and global careers.
- (3) Promote staff, who have skills to assume management responsibility for Toray Group companies, to top management positions of each company, and also give them opportunities for selection to executive positions as well as core positions of Toray Japan.

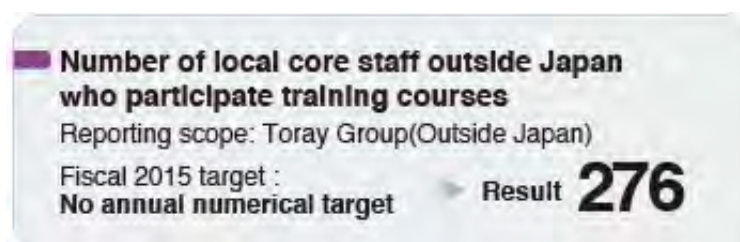
**3. Pursue a “placing the right people to the right jobs” policy while enhancing fairness, understanding (by employees) through convincing explanations, and transparency**

- (1) Make the best assignment for each employee and assigned organization by focusing on his/her ability and performance.
- (2) Place importance on fairness, understanding (by employees) through convincing explanations, and transparency when determining individual compensation, such as salary and bonus, by appropriately taking account all of the roles and responsibilities of the position, the employee’s ability, as well as performance appraisal results based on the MBO (Management by Objectives).
- (3) Enhance the HR development system and the compensation system to value challenges as well as enhance motivation of average-level performers who contribute to their team.

**4. Continue various management methods to further strengthen the company’s business structure**

- (1) Conduct head-count management and labor cost management as an entire company in a detailed and uniformed way.
- (2) Always sustain a flat, effective organizational structure and control the appropriate proportion of managerial staff.
- (3) Maintain and strengthen competitiveness through the appropriate utilization of diversified human resources such as contract employees, temporary staff sent from agencies, and external resources.

## Developing and Promoting Staff at Overseas Group Companies



The Toray Group regards the development of core staff at its overseas group companies as one of its priority management objectives. The Group makes active efforts to promote employees locally hired at these companies to executive management positions, as well as to key posts and management positions at Toray's head office. To ensure thorough understanding of the Toray Group's management philosophy and policies, core staff from overseas group companies participate in training programs in Japan, organized according to managerial level. The Toray Group, with direct involvement from the head office, is developing and providing management training courses outside Japan specially designed for the particular circumstances and needs of group companies in each respective country.

The Group operates a "Toray Global HR site" online, through which employees can access information about management policies and human resources management. Employees can also access the website to take online courses that are part of a group-wide framework for training.

## Training Courses Held for Core Staff outside Japan in Fiscal 2015 (Toray Group)

### Japan-based courses

Training program	Managerial category	Number of participants
Toray Group Senior Management Seminar	Department managers	25

### Courses held outside Japan

Training program	Managerial category	Number of participants
Toray Group U.S. Senior Management Seminar	Department managers	17

Toray Trainee Program	Section managers	27
National Engineer Key Person Training	Section managers	1
Toray Management & Technical Training	Unit managers	8
Total number of employees receiving training		61

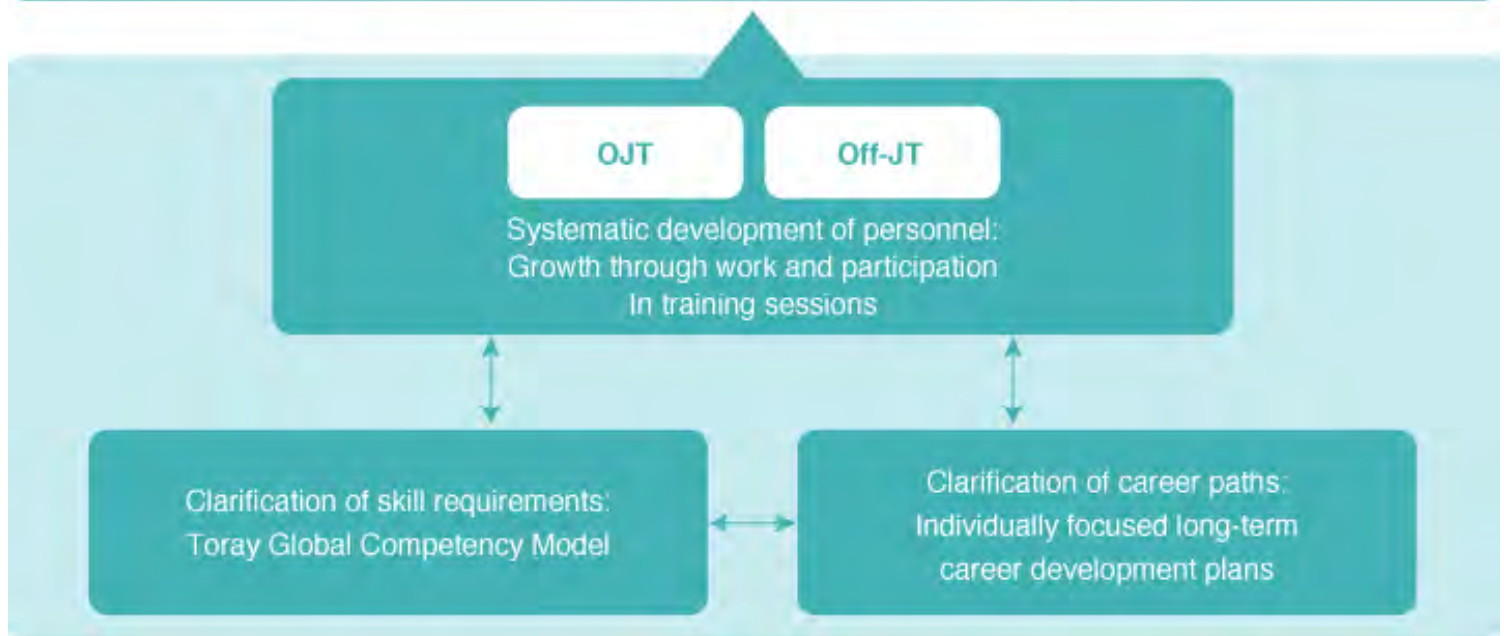
Toray Group U.S. Management Training	Section managers	17
Toray Group EU Senior Management Seminar	Department managers	9
Toray Group Indonesia Management Seminar	Section managers	24
Toray Group Thailand Senior Management Seminar	Department managers	25
Toray Group Thailand Management Seminar	Section managers	25
Toray Group Malaysia Management Seminar	Section managers	29
Toray Group Korea Senior Management Seminar	Department managers	17
Toray Group East and North China Management Seminar	Section managers	29
Toray Group South China Management Seminar	Department managers	23
Total number of employees receiving training		215

## Infrastructure for Developing and Promoting Local Personnel

Positions deemed critical for the global management of the Toray Group have been classified into four levels based on a group-wide standard. Toray's head office is working with overseas group companies to develop and promote local staff in these positions; the employees are known as National Core Staff. 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. In accordance, individually focused long-term career development plans are formulated.



## Appointment as executives at overseas group companies



### **VOICE** Message from a Toray Group Senior Management Seminar Participant

**I truly appreciated this priceless experience for the opportunity it gave me to acquire a broad-ranging view of the company.**

I was honored to have the chance to participate in the 20th Toray Group Senior Management Seminar. The 11-day seminar was an invaluable experience and a great opportunity to talk with and learn from so many different Toray people, from manufacturing, accounting, sales, engineering, quality control, IP, IT, CSR, and more.

The seminar was particularly meaningful in that it made me more aware of the Toray Group's broad corporate strategies and the challenges we face in creating materials that are useful and beneficial to society. It also demonstrated to me Toray's commitment to the enrichment of its employees and to human rights.

I returned from the seminar with a greater appreciation of sharing our corporate and larger group goals with my team and to encourage individual investment in our daily work, while keeping in mind how to continue to expand our business.



**Tara Natter**  
General Manager, Textile  
Garment Department, Toray  
International America, Inc.

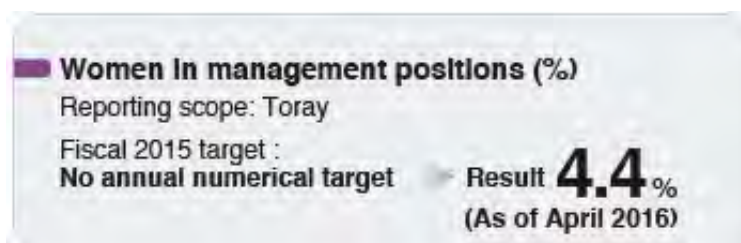
## Promoting Diversity

The Toray Group is committed to promoting employee diversity to help build thriving workplaces where each individual's abilities can flourish.

### Employing a Diverse Workforce

Since 1998, Toray has been expanding its efforts to recruit diverse human resources, in order to drive the globalization of its business. The Company actively recruits Japanese university graduates who have studied abroad, as well as non-Japanese graduates of Japanese universities. Then, it seeks to build a work environment where all employees are able to fully demonstrate their individual abilities and perform to their utmost potential.

### Fostering an Organizational Culture Conducive to the Career Advancement of Women



Toray has long encouraged women in the workplace and implemented policies to support women to build fulfilling careers. The Company promoted its first female manager in 1958 and introduced employee provisions for taking parenting leave, nearly 20 years before parenting leave became mandatory in Japan. In 2003, a woman became president of a Toray Group company. Then, in 2004, Toray launched the Advancement of Women Project. As of April 2016, women held 8.7% of unit manager or higher positions and 4.4% of section manager or higher positions. In June 2015, Toray welcomed its first female director (riji), a position that is equivalent in scope and level of responsibility to senior management.

In fiscal 2015, Toray undertook a review of conditions for female employees in its workplaces based on Japan's new Act on Promotion of Women's Participation and Advancement in the Workplace, which was then enacted on April 1, 2016. The Company found that, thanks to past efforts to enable employees to continue working while balancing work and family, overtime hours averaged 23 hours during peak months (Toray's regular working hours: 7.5 hours per day) and the average number of continuous years of employment at Toray was higher for female than for male employees. Still, at Toray, only 4.4% of management positions are held by women. This figure is low compared to other indicators, such as women in the total workforce (13.9%) and women in the G Course (the career path for management position candidates) (13.6%). The morale survey of managers and G Course employees conducted in the autumn of 2015 found that fewer

women than men want a promotion or feel they can envision their future career advancement.

Based on these results, Toray has developed an action plan to increase the percentage of female employees promoted to managerial positions by focusing on individualized career plans and awareness of career development. Under this action plan, Toray has set the following target, on average, for the five-year period from fiscal 2015 to fiscal 2020:

ensuring a women's promotion rate that is at least 80% that of men.<sup>6</sup> This figure is the Japanese Ministry of Health, Labour and Welfare's yardstick for determining whether or not excessive discrepancy exists based on gender.

Specifically, Toray will take the following measures to achieve this goal:

- Request individualized career plans each year to be faithfully followed;
- Conduct morale surveys every other year and follow up on issues requiring attention; and
- Bolster training designed to raise awareness of career building.

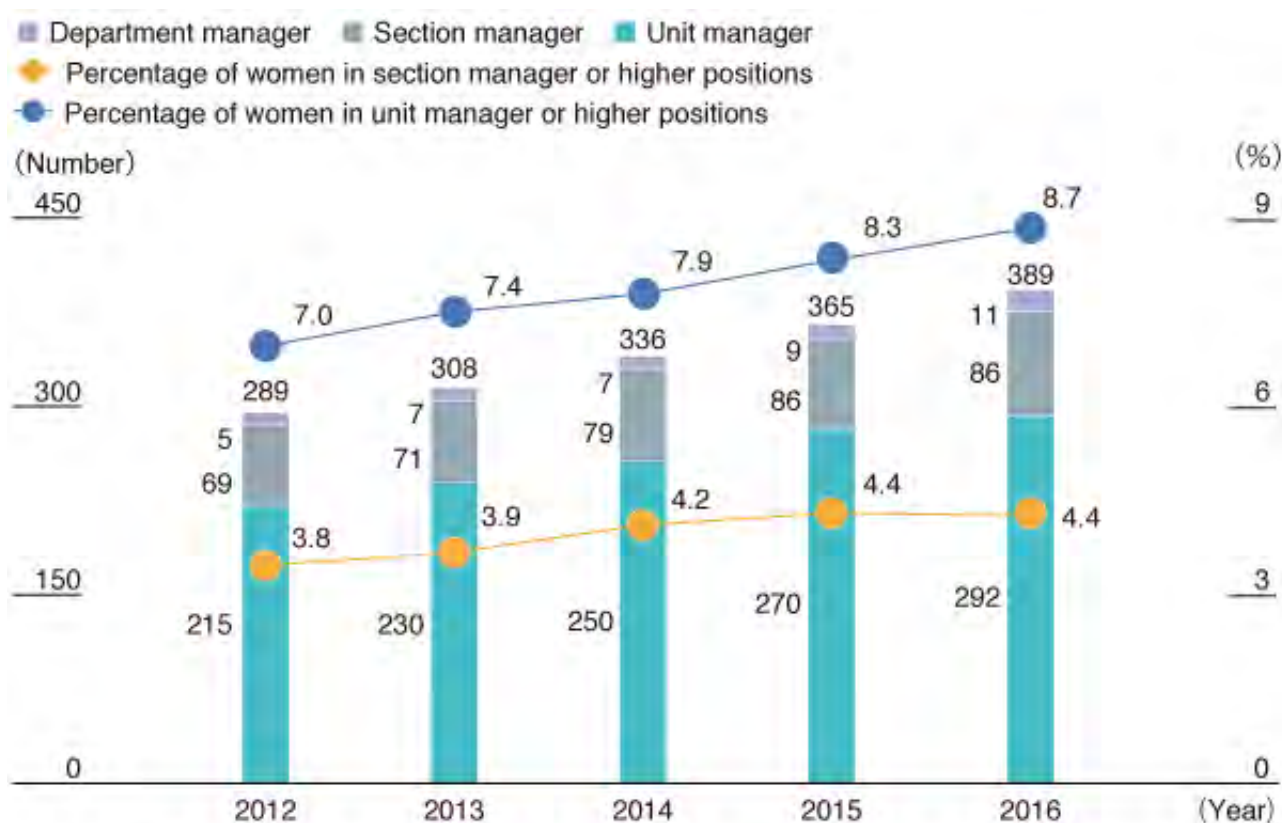
Career advancement seminars for female managers and professionals planned and developed by female general managers at the Toray Group were held in February 2015 and January 2016, with a third seminar planned for the current fiscal year. Toray is looking to incorporate these seminars into its general corporate training system in the future.

Recognizing that the advancement of women is an undertaking that will be accomplished one hurdle at a time, Toray will continue to work steadily and consistently to address this topic.

<sup>6</sup> Promotion rate of women to managerial positions compared to that of men = Percentage of female employees promoted to managerial positions / Percentage of male employees promoted to managerial positions

Percentage promoted to managerial positions = Individuals promoted to managerial positions / No. of employees who were initially hired into the G Course who are eligible for promotion to managerial position that year

### Number of Women in Management Positions and Women as a Percentage of Total Management (Toray)



## Column

### Promoting Continuous Employment of Women at Toray Research Center

As of the end of March 2016, Toray Research Center, Inc. employed 413 persons, 151 of whom were women (36.6%). The Center believes that, in order to ensure the advancement of women in the workplace, it is important to encourage continuous employment by reducing the workload during the childbirth and childrearing years so that employees are able to balance work and family.

To this end, Toray Research Center has introduced the following initiatives to make it easier for employees to return to the workplace after taking long-term childcare leave:

1. Set up a consultation desk and a general affairs desk for those on long-term childcare leave;
2. Provide wide-ranging information to those on long-term childcare leave; and
3. Introduced system to facilitate regular communication and dialogue between those on long-term childcare leave and their supervisors in the workplace.

These three measures over the past five years have resulted in an average of 14 people a year taking maternity leave and long-term childcare leave, as well as an average of 26 people a year using lower-hour work schedules for childcare. As of March 2016, 15 of the 101 employees in section manager positions or higher are women (14.9%). Toray Research Center will continue to promote work-life balance in order to create a work environment that allows skilled and experienced employees to be a dynamic part of the company for the long-term.

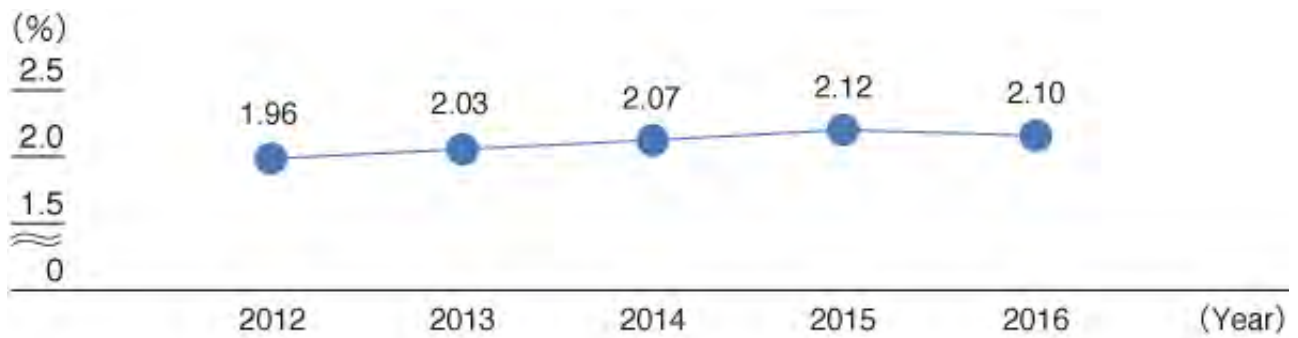
## Employment of Persons with Disabilities



The Toray Group hires and employs persons with disabilities, from those with physical challenges to persons with intellectual and mental challenges. The Group is making workplace improvements to remove physical barriers for persons with handicaps as well as instituting safety measures. Additionally, the Group provides comprehensive training upon work placement and gathers feedback from persons with disabilities to make workplace improvements. Further, Toray meets Japan's legal minimum of 2.0% persons with disabilities, as do 58.1% of Toray Group companies in Japan. Although group companies have made an effort to promote the hiring of persons with disabilities through public

organizations and placement agencies, certain conditions such as hiring difficulties and hired staff having to leave their jobs unexpectedly have made it difficult to maintain the legal minimum. Toray will continue to focus on this issue moving forward.

### Employment Rate of Persons with Disabilities (Toray)



Note: As of June 1 each year

### Re-employment System

As part of initiatives to encourage full utilization of skilled individuals over 60 years of age, in fiscal 2001 Toray introduced a re-employment system open to all of its unionized employees who wish to continue working. The Company expanded the system in 2005 to include employees in management and specialized fields.

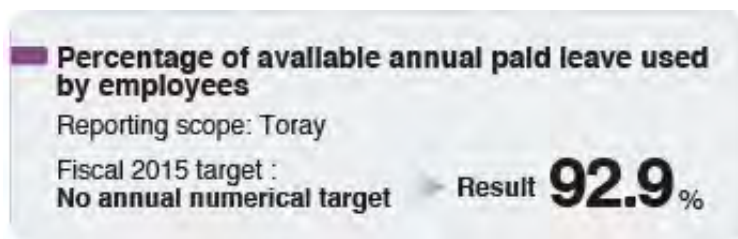


Copyright © 2017 TORAY INDUSTRIES, INC.

# Creating a Positive Workplace for Employees

> Materiality Focus

## Helping Employees Maintain Work-Life Balance



Toray has been working to further improve systems that help employees achieve a harmonious balance between work and family life, by offering a wider variety of lifestyle options for men and women. Support systems that exceed those legally mandated for childcare, family care, and maternity protection are provided, the result of Toray's commitment to making them accessible and responsive for a diverse range of employee needs. In 2007, Toray was granted certification as a general corporate entity meeting the requirements for supporting the development of the next generation by Japan's Ministry of Health, Labour and Welfare.



After acquiring the certification, Toray revamped its child care support systems in June 2010 in an effort to encourage male employees to make use of them. Then in April 2011, the Company launched the Toray Smile Support Program, a point-based system that lets employees choose from various programs that provide financial assistance for childcare and purchasing homes. Toray initiated a telecommuting program in April 2012, aimed at making it easier for employees to work while raising children or caring for family members. Toray also expanded the scope of its commuting allowance for taking the bullet train in October 2012. In April 2013, Toray improved its support systems once again, offering special leave for parents to prepare children for nursery school, and extending eligibility for leave to care for sick children. In July 2013, the Company also revised working hours under its reduced-time work systems for childcare and family-care.

### Major Support Systems for Employee Work and Family Life Balance

Category	Description
Long-term childcare leave	<ul style="list-style-type: none"> <li>Available for employees using child care center services offering a leave of</li> </ul>

	absence up to the end of March of the fiscal year in which the child turns one year of age or up to the time the child turns 18 months, whichever is longer
Lower-hour work schedules for childcare	<ul style="list-style-type: none"> <li>• A maximum reduction of two hours per day, calculated in 15-minute increments, available until the end of the fiscal year in which the child is in third grade of elementary school</li> <li>• May be used concurrently with flextime system</li> </ul>
Long-term family care leave	<ul style="list-style-type: none"> <li>• Available for a total of 365 days per situation requiring leave to provide care</li> <li>• May be used concurrently with flextime system</li> </ul>
Leave to care for sick children	<ul style="list-style-type: none"> <li>• Five days per year of leave per child available until the end of the fiscal year in which the child is in third grade of elementary school</li> <li>• Days not taken by the end of the fiscal year may be rolled over to the following fiscal year.</li> </ul>
Family care leave	<ul style="list-style-type: none"> <li>• Five days per year of leave available per family member</li> <li>• At maximum five additional days per year available when no other appropriate caregiver is available on those days (revised April 2013)</li> </ul>
Toray Smile Support Program	<ul style="list-style-type: none"> <li>• Welfare point system offering a selection of programs with an emphasis on providing support for childcare and home acquisition</li> </ul>
Childcare services payment assistance	<ul style="list-style-type: none"> <li>• Childcare coupons offering a 70% discount on services provided by participating companies issued as an additional Toray Smile Support Program service</li> <li>• No restrictions on number of coupons or age of participating employee's child</li> </ul>
Telecommuting program	<ul style="list-style-type: none"> <li>• Available for employees who meet certain requirements and have a family member requiring care or a child through the end of the fiscal year in which the child is in the third grade of elementary school</li> <li>• Available up to two days (15 hours) per week and no more than a maximum of six days (45 hours) per month for approved employees</li> </ul>
Registration system for reemployment	<ul style="list-style-type: none"> <li>• Registration system providing reemployment opportunities to former employees who resigned due to personal matters such as marriage, childbirth and childcare, nursing care for family members, or a spouse's work transfer</li> <li>• The registration period is ten years. Registrants may be immediately eligible for regular employee positions depending on the content of their jobs, expectations of their role in the company, and their personal situations.</li> </ul>
Commuting allowance for bullet train or other limited express travel	<ul style="list-style-type: none"> <li>• Allowance for tickets for applicable distances on bullet trains or other limited express trains available for employees who wish to avoid (cease) living apart from their families due to job transfers or employees who bear personal responsibilities such as caring for family members</li> <li>• In certain cases, employees may be required to pay a part of the commuting expenses out of pocket.</li> </ul>

## Utilization of Childcare and Family Care Leave Systems (Toray)

FY		2011	2012	2013	2014	2015
Employees taking childcare leave	Women	81	62	56	71	53
	Men	3	2	3	5	3
Employees taking family care leave	Women	1	2	0	2	1
	Men	0	0	1	1	4

Note: Figures show the number of employees taking leave.

As part of its commitment to workplace innovation, Toray makes provisions to help employees balance work and family life. Since fiscal 2008, regular workplace discussions are held in each workplace to raise awareness of different working styles, and working late at night or on holidays is prohibited, in principle. All lights in the workplace are turned off at a certain time at night, and company-wide “no overtime days” take place one day each month. Due to ongoing initiatives to reduce overtime hours and encourage employees to take annual paid leave, employees used 92.9% of available annual paid leave in fiscal 2015. In October 2010, Toray set up a Work-Life Balance Committee, made up of labor and management representatives. Through this committee, labor and management have been engaged in discussions on a number of issues oriented toward helping employees balance job responsibilities with home life, as well as creating workplace environments that facilitate diverse working styles, preventing overwork and reducing excessive working hours, and enhancing mental healthcare at worksites. In April 2014, the committee was renamed the AP-G 2016 Labor-Management Committee.

### Employee Health

Toray is working to promote better health among employees, encompassing both offices and plants. Employee health management is viewed as a management priority, and strategic initiatives are underway, including some undertaken in collaboration with the employee health insurance association.



Copyright © 2017 TORAY INDUSTRIES, INC.



# Product Safety and Quality

> Materiality Focus

**Provide safe, highly reliable products by striving to enhance management systems for product safety and quality assurance, and disclose appropriate information.**

## Fifth CSR Road Map goals

1. Achieve zero product accidents
2. Enhance the group-wide framework for product safety and quality assurance

## Management

To live up to its “customer first” and “quality first” commitments, the Toray Group has established policies on product safety and quality assurance and an organizational framework to pursue both in an integrated manner. Specifically, Toray’s Product Safety and Quality Assurance Committee deliberates on basic policies and other matters, while the Product Safety and Quality Assurance Planning Department plans and proposes measures. In fiscal 2015, the Group pursued concrete activities to address the issues designated in its medium-term management program, Project AP-G 2016. Moving forward, the Toray Group will strengthen its management systems across the Group, pursuing continued synergies to enhance both product safety and quality assurance.

## Product Safety Management Basic Policy    Established January 1992

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

## **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.
2. 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.
3. We meet quality requirements at the stage of design and development, and ensure and enhance these in the manufacturing process.
4. We continuously strive to organize, maintain and improve our quality management system.

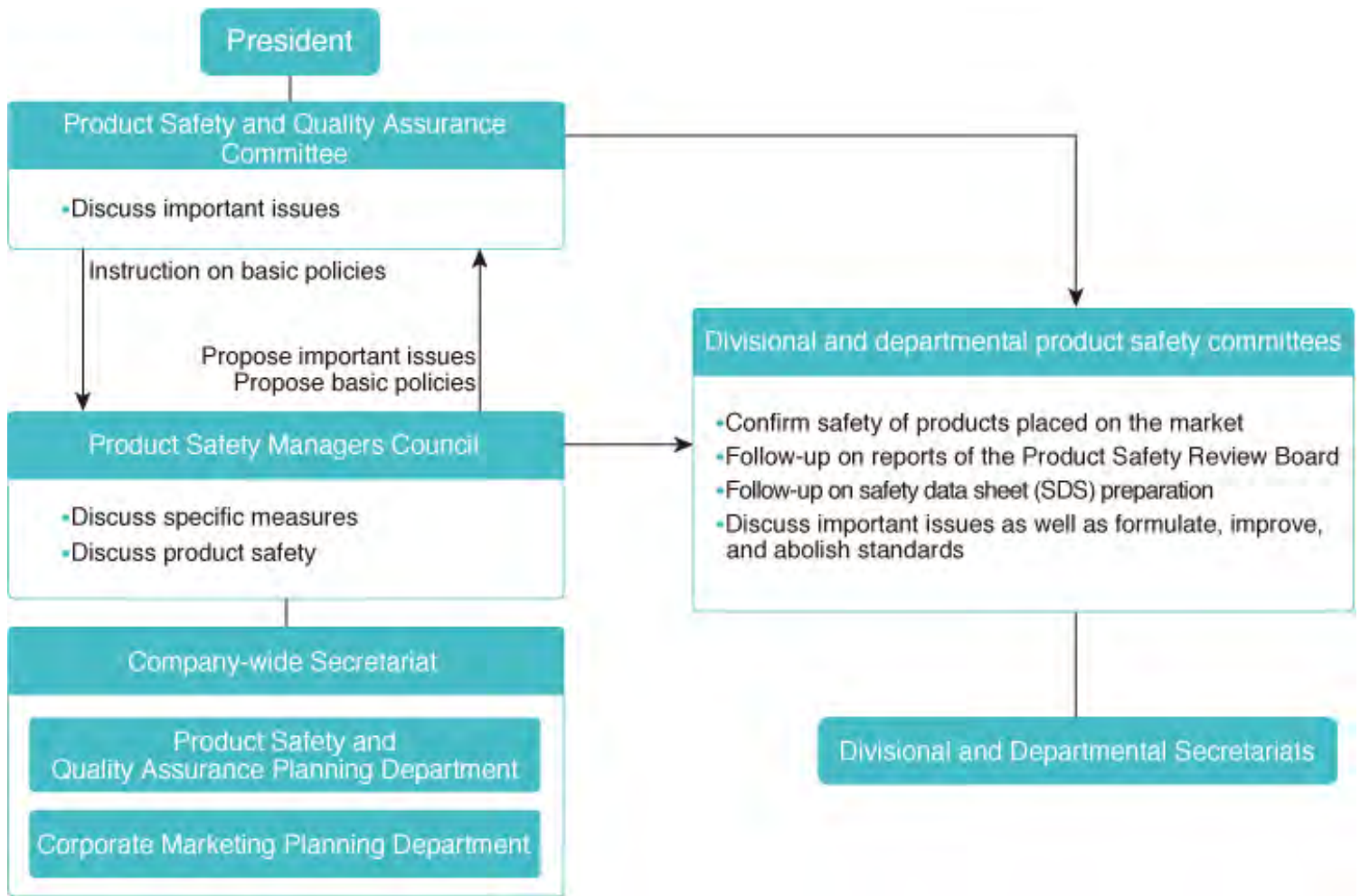
## **Framework for Product Safety**

Toray’s product safety framework is shown in the diagram. Based on Product Safety Control Regulations, Toray’s Product Safety Managers Council promotes and implements annual group-wide product safety themes that are established by the Product Safety and Quality Assurance Committee.

Product safety committees at the departmental and divisional level further examine the company-wide issues that have been identified by the Product Safety Managers Council, breaking them down into action items that are designated every year for implementation. The action items are executed in cooperation with production, technology, and sales organizations at the departmental and divisional levels, to ensure thorough management of product safety and continue raising the level of management.

Group companies around the world have also developed product safety frameworks tailored to their company size. These group company frameworks are supported and supervised by the relevant departments at Toray’s head office. The Toray Group has been centrally tracking statistics on product accidents and the execution of product safety reviews since fiscal 2011.

## **Product Safety Framework**



Copyright © 2017 TORAY INDUSTRIES, INC.

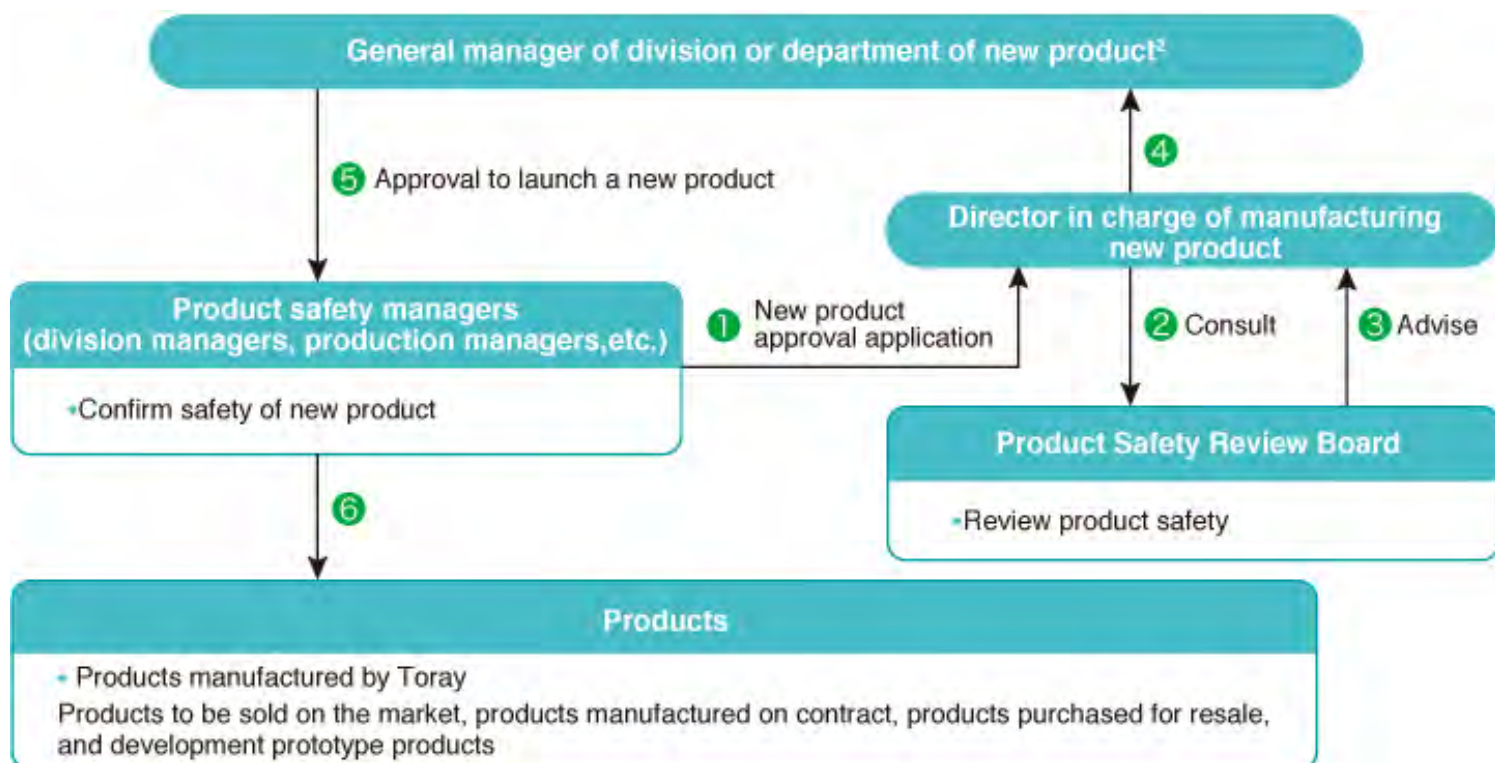
# Initiatives for Product Safety and Quality Assurance

## A Stronger Product Safety Review System

Safety reviews for new products are implemented under the responsibility of the directors in charge of manufacturing at Toray and the relevant directors at its group companies. These reviews encompass safety checks for the product itself as well as reviews of safety information supplied to customers such as safety data sheets<sup>1</sup> instruction manuals, warning labels, and catalogs. The reviews also examine the product's impact on the environment. If any doubts about product safety are identified, the Product Safety Review Board convenes a meeting comprised of impartial experts, including people from outside the Group when necessary. The product must then pass their review before being released to the market.

<sup>1</sup> Since fiscal 2012, the Toray Group has been phasing in safety data sheets (SDS) based on the latest JIS standards that comply with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS). This process is scheduled for completion in fiscal 2016.

**Product Safety Review Flow Chart**



<sup>2</sup> At group companies worldwide, this position is held by the president or a director.

## Education and Training for Product Safety and for Quality Assurance



Toray provides training every year for newly appointed department and section managers at the Company and its group companies in Japan. Sessions are focused on the importance of product safety, the relationship between product safety and quality assurance, relevant laws and regulations, and Toray Group's product safety review system and quality assurance framework. Since fiscal 2013, all group companies around the world have conducted original product safety training tailored to their operations.

### Preventing Product Accidents

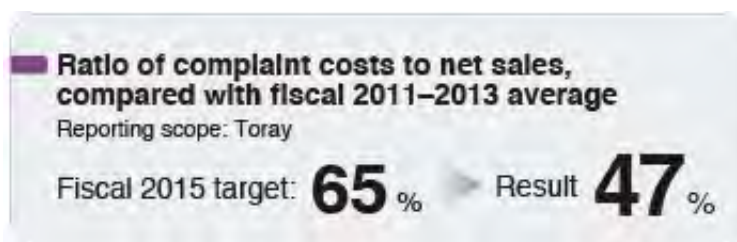


In fiscal 2015, the Toray Group achieved its goal of zero product accidents.

### Providing Product Safety Information

The Toray Group provides customers with product safety information specifically tailored to the product or service. In its efforts to create a convenient environment for customers, Toray makes available toll-free numbers for customers to call and inquire about its mainstay consumer products such as home water purifiers and contact lenses.

### Perfecting Systems in Support of Quality Assurance Activities



Every year, the Product Safety and Quality Assurance Committee determines company-wide quality assurance tasks. Each worksite works on the tasks under the direction of a Quality Assurance Manager Council.

In fiscal 2015, Toray continued efforts from the previous fiscal year to institute solutions that address the underlying

issues behind major product complaints from customers by investigating the cause and having relevant departments mutually monitor the execution of countermeasures. In addition, in order to strengthen quality control for products outsourced for manufacturing, Toray reviewed its quality control standards for each business, made them clear to partner companies, and conducted audits to raise the level of quality assurance management and firmly establish these practices.

## Respecting the Eight Basic Consumer Rights

In providing products and services, the Toray Group is fundamentally committed to respecting the Eight Basic Consumer Rights and strives to secure safety and quality of its products throughout the Group's business activities.

## The Eight Basic Consumer Rights Excerpted from the Consumers

### International website

1. The right to satisfaction of basic needs
2. The right to safety
3. The right to be informed
4. The right to choose
5. The right to be heard
6. The right to redress
7. The right to consumer education
8. The right to a healthy environment

### **VOICE** Message from a Quality Assurance Manager

#### **Aiming to Be the World's Undisputed Leader in Product Quality**

At Toray Battery Separator Film Korea, we manufacture and supply SETELA™, a separator film for secondary batteries, to leading battery manufacturers in Korea and around the world. In 2015, we acquired ISO/TS16949 certification for the automotive industry.

Our goal is to be the world's undisputed leader in product quality. In order to achieve this, we have been working since fiscal 2015 on quality assurance activities that focus on improving customer satisfaction.

Putting ourselves in our customers' position, we have designated five categories of issues—customer response, new product development, external appearance, standards, and dust and insect repellence—and formed cross-departmental teams to address each issue. All team members are actively working with top management and our parent company, Toray.



**Kang-Jin Bae**

Assistant General Manager,  
Quality Assurance Department,  
Toray Battery Separator Film  
Korea Limited



Copyright © 2017 TORAY INDUSTRIES, INC.

# Facilitating CSR Initiatives Throughout the Supply Chain

**Promote CSR activities throughout the entire supply chain by working closely with suppliers, processing vendors, customers and distribution companies**

## **Fifth CSR Road Map goals**

1. Request major suppliers and business partners to practice CSR procurement
2. Respond to all CSR procurement surveys from corporate customers
3. Build group-wide CSR procurement framework

## **Management**

Recognizing the importance of socially responsible procurement in its business activities, the Toray Group's CSR Procurement Guidelines mandate the delivery to customers of materials and products that meet social and environmental requirements via environmentally friendly modes of transport. The Group works with suppliers and distribution partners to build socially responsible value chains.

Under its Basic Distribution Policies, the Toray Group works continuously to ensure fair and equitable transactions, as well as to improve quality and reduce the environmental impact of the distribution process.

## **Related Information**

> [Toray Group's CSR Procurement Guidelines](#)



Copyright © 2017 TORAY INDUSTRIES, INC.



# Toray Group's CSR Procurement, Purchasing and Distribution

> Materiality Focus

As a manufacturer of advanced materials that supplies a wide range of materials and products, the Toray Group must engage in upstream management that reflects the needs of end users, including production facilities and the procurement of raw materials and products. Accordingly, the Group has established its Basic Purchasing Policies to emphasize this approach and ensure fair purchasing practices.

In its Basic Distribution Policies, the Toray Group pledges fair and equitable transactions as well as environmental preservation. The Group also emphasizes continuous initiatives to improve quality and reduce environmental impact related to distribution.

## **CSR Procurement Guidelines**    Adopted December 2004

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
3. Position safety, accident prevention, and environmental preservation as a management priority and practice green procurement and purchasing whenever and wherever possible
4. 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
7. 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

## **Basic Purchasing Policies**    Revised December 2004

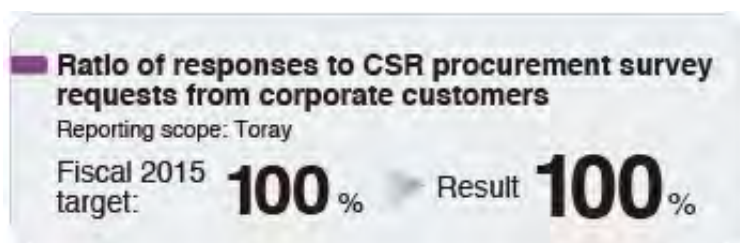
1. Toray does its utmost to select suppliers and determine actual purchases fairly and on the basis of economic rationality, with consideration for price, quality, capability to provide stable supplies, technological capabilities, reliability, and other factors.

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.
5. Toray works to uphold its corporate social responsibilities on a company-wide basis.

**Basic Distribution Policies** Adopted December 2004

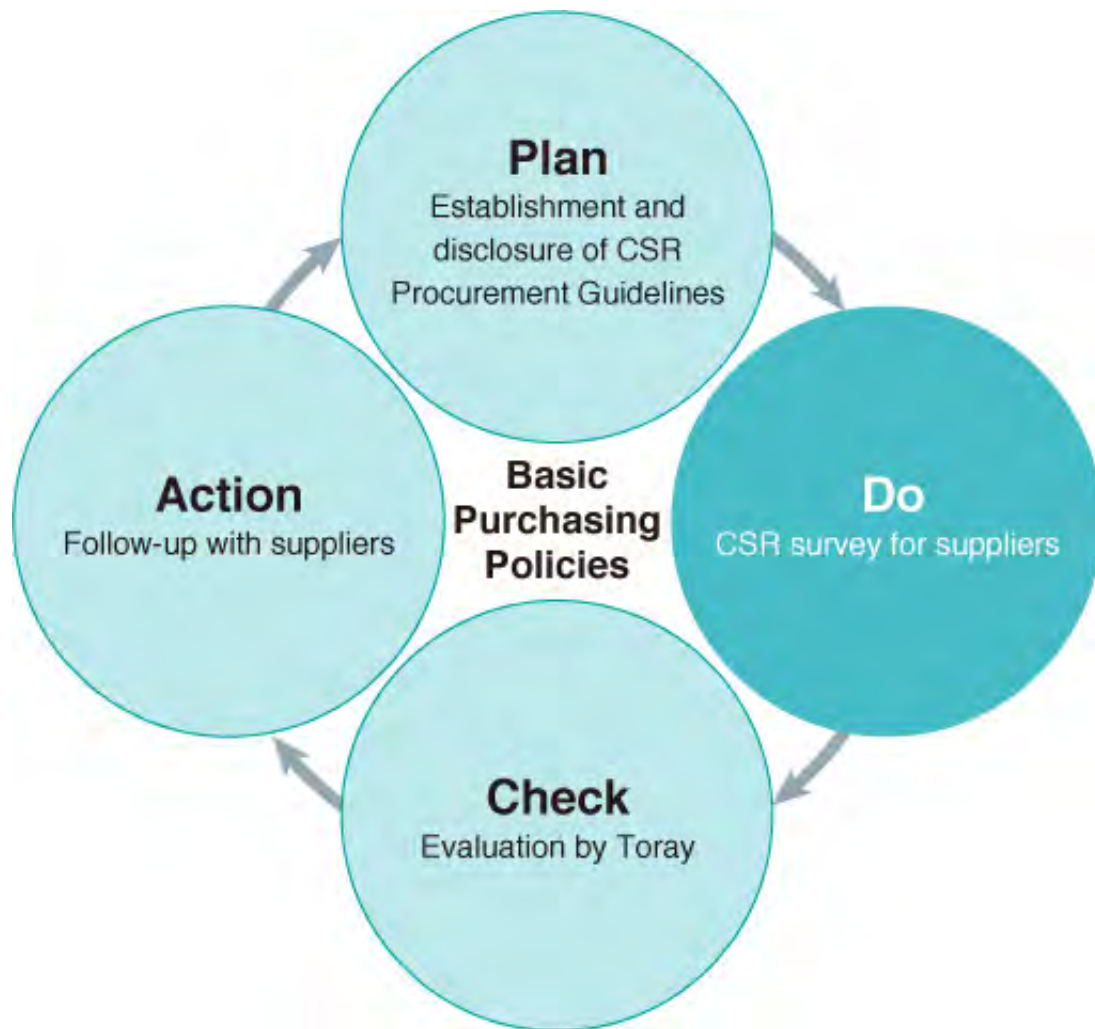
1. We shall select our transport and warehousing providers and determine individual agreements impartially and based on factors such as economic rationality with consideration given to price, quality, supply stability, technological capabilities, reliability, and efforts to reduce environmental impact.
2. 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 fulfil 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.

**Implementing CSR Procurement**



Toray operates corporate rules for socially responsible procurement and has a framework in place to rapidly and precisely respond to customer inquiries on Toray's materials and CSR practices. Information on customers and suppliers is centrally managed in a shared database.

Toray conducts regular questionnaire surveys to monitor socially responsible practices at suppliers, as part of a plan-do-check-action (PDCA) cycle to encourage socially responsible practices in supply chains.



### Surveying Suppliers about CSR

Toray asks its main suppliers and subcontractors to practice CSR procurement, targeting 90% compliance among business partners. Toray conducts a biannual survey on socially responsible practices, targeting major suppliers, manufacturing subcontractors, and sales agents who represent 90% of Toray's procurement by value. In fiscal 2016, Toray asked to survey 526 companies. The survey provides a comprehensive picture of socially responsible practices and includes questions specifically related to Toray Group's CSR Procurement Guidelines. The survey also gauges attitudes on areas of increased concern, such as biodiversity conservation and conflict minerals.

### CSR Survey Results Analysis, Written Follow-Up and On-Site Visits

An analysis of the results of the survey conducted in fiscal 2013 showed that 88% (total of "excellent," "very good," and "good") of respondents had made progress in CSR enough to build a sound partnership with Toray. Only 12% (total of "fair" and "needs improvement") of companies were considered to require a follow-up audit.

In fiscal 2015, written follow-up and on-site visits were conducted for a number of companies for which follow-up audits were deemed necessary. On-site visits included discussions of specific measures for improvement. Taking the on-site visit as an opportunity, some companies, realizing the importance of CSR, built a system to drive their CSR activities.

## **CSR Procurement Initiatives throughout the Supply Chain**

Toray has added conditions to its basic supplier agreement, regarding social responsibility in the areas of legal compliance, respect for human rights, environment, and safety. Both new suppliers and existing suppliers are asked to meet these conditions including upon contract renewal. Existing suppliers are also asked to sign written pledges.

## **Human Rights and Supply Chains**

Toray Group's CSR Procurement Guidelines mandate a commitment to respect human rights in procurement. Toray also works with suppliers to promote human rights in supply chains.

## **Addressing Conflict Minerals**

The U.S. Securities and Exchange Commission (SEC) has issued rules requiring companies to disclose their use of conflict minerals. To comply with the rules, Toray investigates the use of conflict minerals in all products offered by the Toray Group, as part of its supply chain management. If conflict minerals are used, Toray investigates the suppliers to determine the mining operations and geographic source of the minerals.

## **International Cooperation in the Textiles and Apparel Industry**

The Toray Group is a member of the Sustainable Apparel Coalition, together with other apparel manufacturers and retailers from around the globe. The coalition is dedicated to reducing the environmental impact of apparel and footwear products, and improving human rights for workers.

### **Column**

#### **CSR Lecture for Distribution Partners**

In fiscal 2015, Toray invited an outside lecturer to give a talk on the topic of corporate governance and risk management at Basic Distribution Policy Briefings. These briefings were held at 73 of the Group's distribution partners, and the information provided is expected to be utilized in their CSR activities.



Participants listen to talk at policy briefing.

## CSR Procurement at Group Companies in Japan



In fiscal 2014, the Toray Group achieved its target of ensuring that all group companies in Japan have a CSR procurement framework in place. A full 100% of group companies in Japan conducted CSR surveys of suppliers in fiscal 2015. The Group will continue to work to raise awareness of social responsible procurement and enhance these initiatives.

## CSR Procurement at Group Companies Outside Japan

In fiscal 2014, the Toray Group conducted a survey on CSR procurement at 52 group companies outside of Japan. In fiscal 2015, Toray focused on those group companies for which promoting CSR procurement activities was deemed a high priority in the previous year's survey and collected information on the current initiatives and identified the issues. Moving forward, Group companies will promote CSR procurement surveys and other activities that are tailored to the circumstances of the country or region in which they operate.



Copyright © 2017 TORAY INDUSTRIES, INC.

## Toray Group Distribution Initiatives

Toray holds annual Basic Distribution Policy Briefings as part of its ongoing effort to improve quality and reduce the environmental impact of its distribution process. In 2016, distribution managers from 67 distribution partner companies and 23 Toray Group companies in Japan participated in briefings to promote understanding of Toray distribution policies and improve distribution performance.

### Reducing the Environmental Impact of Distribution

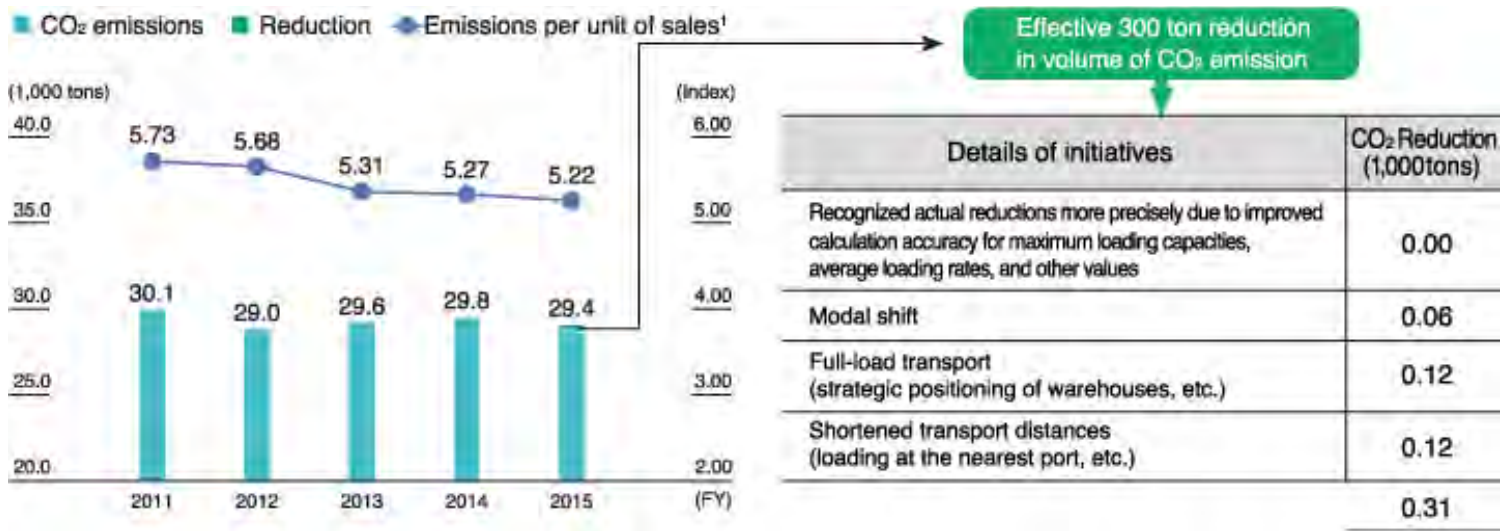


Toray is endeavoring to reduce CO<sub>2</sub> emissions in transport. These initiatives include reducing transport distances by reexamining inventory points and making use of regional ports, and shifting modes of transport by migrating to rail transport, which has less impact on the environment.

In fiscal 2015, CO<sub>2</sub> emissions from transport stood at 29,400 tons, down 2% year-on-year due to progress at Toray on its modal shift. CO<sub>2</sub> emissions per unit of net sales were down by one percent year-on-year, due to ongoing distribution improvements. This enabled Toray to meet its mandate as a specified consigner to reduce energy consumption per unit of net sales, by an average of at least one percent every year over the medium and long term.

Improvements through distribution policies are shared across the Toray Group (in Japan), CO<sub>2</sub> emissions at specified consigners Toray, Toray Advanced Film Co., Ltd., and Toray Ace Co., Ltd. are tracked using the Toray Group distribution platform, and steps are taken to reduce emissions per unit of net sales.

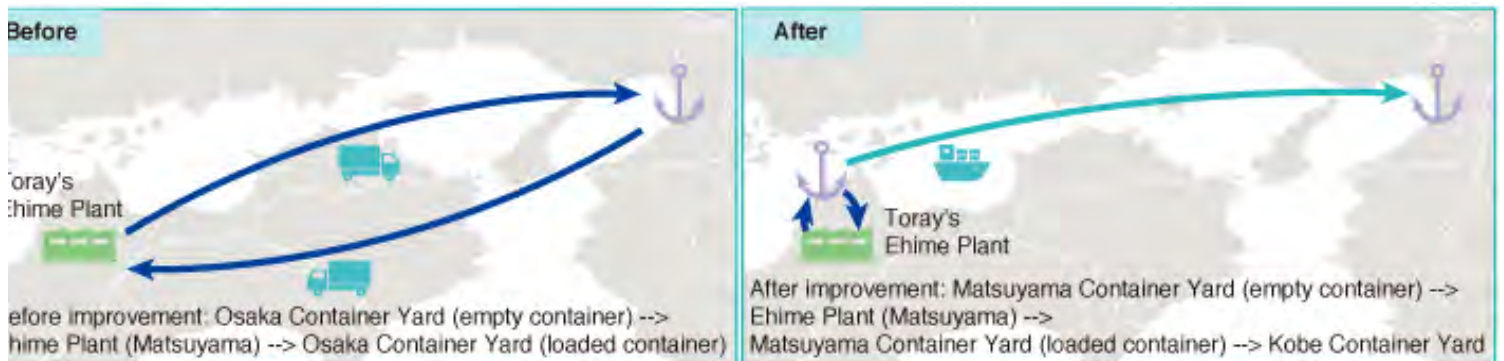
### CO<sub>2</sub> Emissions Resulting from Distribution Activities (Toray)



<sup>1</sup> CO<sub>2</sub> emissions at the transport stage divided by sales on a per unit basis

## Switching to Small Cargo Ships for More Eco-Friendly Transport

Toray's Ehime Plant used to carry synthetic fiber exports to Osaka-Kobe International Port by round road trip, which meant a truck with an empty container traveling from the port to be filled at the plant and then sent back to the port. The plant has started using marine transport by non-international coastal vessel for domestic transport from Matsuyama Port, the closest port to the plant, to Osaka-Kobe International Port. These ships have a lower environmental impact than the previous system, and the plant has succeeded in reducing CO<sub>2</sub> emissions by 33.7 tons per year.

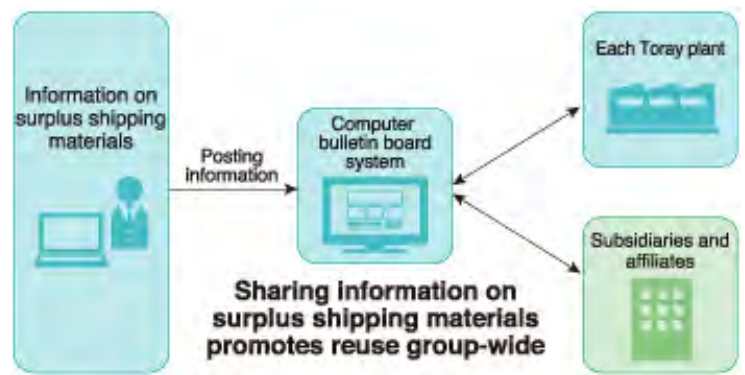


## Expanding Collection and Reuse of Packaging Materials

The Toray Group is establishing a global framework to collect and recycle packaging and shipping materials that are included with products used by customers. Group companies in Japan use an internal bulletin board to inform other companies if they have surplus packaging and shipping materials available for reuse.

Toray's System for Reusing Shipping Materials

Toray Group's Bulletin Board System for Sharing Surplus Shipping Materials



## Eco Rail Mark Acquisition

In March 2011, Toray was certified as an Eco Rail Mark Company by Japan's Ministry of Land, Infrastructure, Transport and Tourism and the Railway Freight Association. This recognizes Toray's active efforts to use rail freight transport, a relatively environmentally friendly means of transportation. The Company also obtained Eco Rail Mark Product certification for its TORAY TETORON™ polyester fiber.

In fiscal 2015, Toray's modal shift rate rose to 33.6%. Although marine shipping fell 0.6 percentage points due to an increase in frequent transport, railway usage rose 0.8 percentage points due to an aggressive move by Toray to switch to this mode of transport. The Company will continue to actively explore means of further promoting a modal shift.

## Breakdown of Toray's Transport Usage and Modal Shift Rate (Toray)



## Promoting a Modal Shift



## Initiatives to Improve Safety and Quality in Distribution

Toray is working on a project to improve transport quality. The project involves sharing accident analysis data, distribution quality enhancement reports, and distribution accident hazard prediction training. Partners that make outstanding contributions to improving quality are recognized through annual awards.<sup>2</sup> These initiatives are aimed at reducing the number of problems such as those involving breakage, and reducing transport delays and incorrect shipments of Toray products. Toray works with distribution partners to improve distribution quality and safety and to



reduce the incidence of problems by conducting on-site inspections and holding quality control meetings with partners. In fiscal 2015, the Toray Group distribution company Toyo Logistic Service Co., Ltd. took steps to further enhance the quality of services. These measures resulted in a 31% year-on-year reduction of incidents involving Toray products, including damage during transport and storage, a significant contribution to the Toray Group.

Toray will continue to work with its partners to improve distribution quality.

2 Distribution-partner companies receiving awards in fiscal 2015 (alphabetical order): Ajinomoto Logistics Corporation, Chigusa Kosan Co., Ltd., Daisei Warehousing & Transportation Co., Ltd., Fuji Logitech Holdings, Inc., Hamakyorex Co., Ltd., Meiko Trans Co., Ltd., Nagahama Reizo Co., Ltd., Shikoku Meitetsu Transport Co., Ltd., Touto Transport Co., Ltd., Toyo Logistic Service Co., Ltd.

## **VOICE** Message from a Safety Manager

### **Workplace-Driven Activities Significantly Improve Distribution Quality**

Improving the quality of the distribution process is an issue of critical importance to us. In fiscal 2015, each office set its own goals and worked on autonomous activities in addition to activities designated by the head office. Some offices focused, for example, on managing product handling information using visual controls; others held regular safety meetings with subcontractors or worked to identify problems and issues by analyzing case studies of previous incidents. Offices also conducted multiple reviews on handling methods tailored to each product.

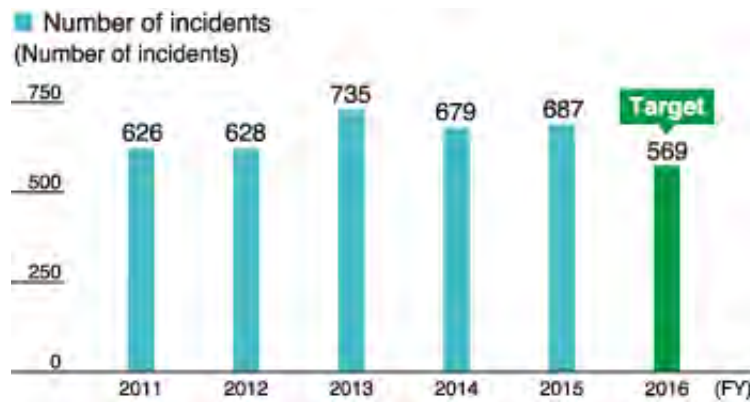
The number of incidents in fiscal 2015 was reduced by a significant 31% over the previous year thanks to these activities. We will continue to focus on improvements in order to achieve further reductions.

#### **Mikihito Ikeda**

Manager, Environment & Safety Department, Toyo Logistic Service Co., Ltd.



## **Distribution Incidents**



Incidents during fixed route transport, caused primarily by changes in the distribution environment, increased by eight over the previous fiscal year.

## Using Digital Tachographs to Improve Driving Safety

Toray is encouraging its distribution partners to deploy digital tachographs, which record and output vehicle operation data, in their vehicles, to enhance safety and realize better fuel economy. Companies use the driving data they collect from digital tachographs to advise their drivers on how to drive more safely, improve their driving technique, and be more conscious of safety. The data also helps to prevent dangerous driving and reduce accidents, and is used to promote fuel-efficient driving practices.

## Yellow Card Emergency Response Measures

Drivers of shipping vehicles carry a yellow card<sup>3</sup> detailing emergency measures to be taken to minimize damage in the event of an accident. Toray has also established an emergency communication system and carries out emergency training. In the unlikely event of such an accident, Toray has procedures in place enabling the necessary staff to be dispatched as swiftly as possible to the accident site for assistance.

<sup>3</sup> 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 accident response information.

## Initiatives to Prevent Overloading

The overloading of trucks causes vibration, noise, damage to roads and facilities, and also creates driving hazards. Consequently, Toray is putting considerable effort into the prevention of overloading.

## Compliance and Security Measures for Importing and Exporting

As a measure to ensure the legality and safety of imports and exports as part of Toray Group's expanding global operations, a US subsidiary of Toray International, Inc. enrolled in the Customs-Trade Partnership Against Terrorism (C-TPAT)<sup>4</sup> with the aim of strengthening global supply chain compliance. In order to realize more efficient imports and

exports of materials and to strengthen supply chain compliance and security measures, Toray is also encouraging its worldwide distribution partners to obtain Authorized Economic Operator (AEO)<sup>5</sup> status.

4 A voluntary program introduced by United States Customs and Border Protection in November 2004. The aim of the program is ensure and strengthen security through the global supply chain, based on international cooperation with private operators importing goods into the US.

5 A status implemented by the EU in December 2006 that gives priority in customs procedures to importers and exporters with a high level of compliance for cargo security. The Japanese Customs Act was also revised in 2007, and a similar qualification system was established to provide priority in customs procedures to highly compliant operators.



Copyright © 2017 TORAY INDUSTRIES, INC.

## Communication

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

### Fifth CSR Road Map goals

1. Improve stakeholder satisfaction in accordance with the Basic Policies to Promote Dialogue with Stakeholders
2. Reflect results of dialogue and collaboration with each stakeholder group in management activities in a timely and appropriate manner

### Management

The Toray Group communicates with diverse stakeholders throughout its business activities in accordance with its Basic Policies to Promote Dialogue with Stakeholders. A Corporate Communications Committee comprised of senior management personnel meets twice a year to discuss and receive regular reports on communication activities.

### Basic Policies to Promote Dialogue with Stakeholders    Adopted September 2005

1. 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.
2. 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 identify and strive to solve issues affecting stakeholder satisfaction as part of their CSR activities.



## Communication via Corporate Websites



The Toray Group has expanded its global website and launched websites for countries and regions where the Group operates as part of the group-wide initiative, the Asia, Americas and Emerging Country Business Expansion Project. By fiscal 2014, websites were launched for the United States, China, Indonesia, Thailand, Malaysia, India, and Taiwan, and in fiscal 2015, sites for Europe and Brazil were added. Toray will continue to grow its business in countries and regions around the world by developing websites for group companies outside Japan, as well. However, in fiscal 2015, Toray was unable to meet its website development goals for group companies in Japan due to delays in certain scheduled upgrades.

The Toray Group is working to make its websites easier to access for business in countries and regions worldwide with responsive design, which ensures optimum viewing on all screen sizes to accommodate the increasingly diverse range of devices such as smartphones and tablets that people use to access websites.



Toray Group's global website



## Communication with Customers

True to its “customer first” commitments, the Toray Group is committed to maintaining outstanding communication with customers, with its sales teams playing the central role. The Group also conducts regular customer satisfaction surveys to elicit feedback that does not come to light readily in routine business meetings. The survey results are made available at Board meetings and published via in-house newsletters to facilitate business improvements and motivate employees. Feedback is relayed as needed to specific departments to address particular issues, and employees are encouraged to take a personal role in improving the quality of work in placing and receiving orders and enhancing customer service. In addition, marking the 90th anniversary of its founding in 2016, Toray held the Toray Advanced Material Exhibition and Symposium in October as part of a series of events designed to commemorate the anniversary and promote greater communication with customers.



Copyright © 2017 TORAY INDUSTRIES, INC.



## Communication with Stockholders and Investors

In accordance with its Information Disclosure Policy, Toray makes sure to disclose information required under laws and regulations in an accurate, timely and appropriate manner, as well as a broad range of additional information beyond these requirements. Toray's Investor Relations Department was established directly under the president to liaise with stockholders and investors, aiming to create as many communication opportunities as possible.

### Holding Investor Relations Events to Meet Directly with Stockholders and Investors

Toray conducts same-day briefing sessions for institutional investors and securities analysts to coincide with the release of quarterly and annual earnings results, and fields interview requests from the media. The table below summarizes the main investor relations activities that were conducted in fiscal 2015. Feedback received at investor briefing sessions and through communication with investors and stockholders is regularly reported to the Board of Directors and Corporate Communications Committee, helping to guide management and business activities.

Activities	Attendees from Toray	Number of events	Number of participants/frequency
Briefings on business results announcements	President, Director in charge of Investor Relations Department, Director in charge of Finance and Controller's Division	4 times/year	567
Meetings and conference calls with investors and analysts	Director in charge of Investor Relations Department, General Manager and staff of the Investor Relations Department	As required	750

### External Evaluation of Information Disclosure to Investors

In the "Investor Relations" section of its corporate website, Toray provides information about its financial results and management policies and strategies for stockholders and investors. In an effort to disclose information fairly, Toray promptly posts financial data and presentation materials, including English translations, used in its briefings for institutional investors. In fiscal 2015, Toray's publications were evaluated externally by a number of organizations, as shown below.

Organization details	Evaluations
Daiwa Investor Relations Co., Ltd.	Awards for outstanding websites in 2015
Nikko Investor Relations Co., Ltd.	Most outstanding site in overall completeness, in a ranking of listed company websites in 2015
MerComm, Inc. (US)	2015/2016 Mercury Excellence Award in Annual Reports—Overall Presentation (Silver in the field of chemicals)
League of American Communications Professionals (LACP)	Gold Award in the corporate category of materials, 2015 Vision Awards Annual Report Competition

## Evaluations from the Perspective of Socially Responsible Investment

Toray was included in the following SRI indices as of March 31, 2016.

- Dow Jones Sustainability Index Asia Pacific
- MSCI Global Climate Index
- Ethibel Pioneer & Excellence Registers
- Morningstar Socially Responsible Investment Index (MS-SRI)
- Euronext Vigeo World 120 Index
- Sompo Japan Nipponkoa Asset Management (SNAM) Sustainability Index

## Convenient General Stockholders Meetings

For the convenience of its stockholders, Toray avoids holding its general meeting of stockholders on a date when many other companies in Japan hold their meetings. Toray also sends out notices of its general meetings of stockholders as early as possible to give sufficient time for stockholders to plan their attendance. In fiscal 2015, 1,972 stockholders attended the Company's ordinary general meeting of stockholders, up from 1,893 in fiscal 2014.



Copyright © 2017 TORAY INDUSTRIES, INC.

## Communication with Business Partners

The Toray Group holds policy briefings and carries out CSR procurement surveys for business partners to foster mutual understanding and closer collaboration.

### Related Information

> [Facilitating CSR Initiatives Throughout the Supply Chain](#)



Copyright © 2017 TORAY INDUSTRIES, INC.

## Communication with Employees

The Toray Group employs various forms of media such as printed in-house newsletters, intranet, and company-wide bulletin boards to stimulate communication among employees. Messages from the company president appear in all of these media. The in-house newsletter is published in three languages (Japanese, English, and Chinese) to keep employees informed about management and business topics as well as corporate projects. In response to requests from Toray Group employee readers in China, the Chinese edition in-house newsletter is now being supplemented with locally written content. A survey done in fiscal 2015 indicated that readers consistently find all of the newsletter content useful, with reader satisfaction exceeding 90%.

### Circulation of Toray Group's publications

**Japanese edition of *People* in-house newsletter:** :

Around 15,000 copies per issue (published six times per year)

**English edition of *People* in-house newsletter:** :

Around 3,000 copies per issue (published four times per year)

**Chinese edition of *People* in-house newsletter:** :

Around 6,500 copies per issue (published four times per year)

***Toray Management* newsletter for managers:** :

About 6,000 copies per issue (published five times per year)



Around the time of the customer satisfaction survey, Toray also conducts an employee attitude survey of Toray employees and personnel assigned to work at group companies in Japan. The results are used to gauge any gaps that might exist between customer needs and employee attitudes and are circulated internally to provide feedback.

## Communication with the Media



Toray recognizes that public relations and corporate communication activities have a role in fulfilling responsibilities for information disclosure as well as influencing public opinion. Accordingly, Toray's Corporate Communications Department reports directly to the president, and actively engages with a wide range of media organizations, linking the Company with the public.

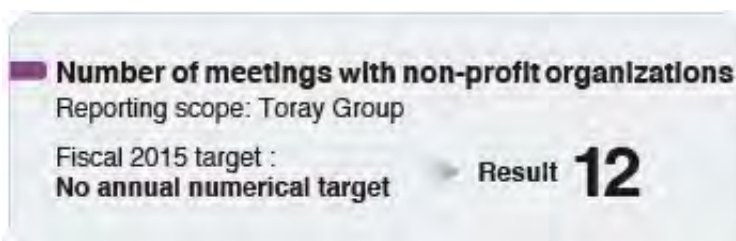
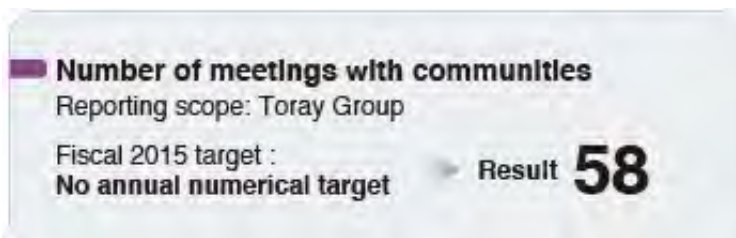
Based on Toray's Information Disclosure Principles, the department provides fair and impartial information, even if it may cast the Company in a bad light, in a timely and appropriate manner. In fiscal 2015, Toray issued 192 press releases and carried out 285 interviews in response to media requests.

### Related Information

> [Toray's Information Disclosure Principles](#)

## Communication with Local Communities

> Materiality Focus



The Toray Group strives to engage in active dialogue with nearby residents in a variety of settings. Some examples of these activities include regular community meetings with local residents, participation in events sponsored by local governments, and inviting local residents to summer festivals held on sporting grounds on plant premises.



Toray Group companies in Hong Kong participate in the Walk for Sight charity event sponsored by a non-profit organization.



Toray's Nagoya Plant holds a business and environment orientation session for local residents.



Toray's Ehime Plant hosts a summer festival attended by some 1,100 people, including residents of the local community.



Employees of Ogaki Fuso Spinning participate in a ceremony at a local shrine.

## Column

## Toray Project Presented as Case Study at Humanitarian Innovation Forum Japan 2016

Members of the Toray CSR Operations Department took part in the Humanitarian Innovation Forum Japan 2016<sup>1</sup> held in the city of Sendai on March 13, 2016. This forum fosters discussion on new forms of humanitarian aid among representatives from a wide array of sectors, including NGOs, corporations, and international organizations.

One of the case studies presented at this year's forum was a joint project by Toray and the international NGO Operation Blessing Japan under which TORAYSCUE™ compact emergency water treatment units were donated to areas in the Philippines struck by Typhoon Haiyan in 2013. The presentation focused on the preparations and logistics of the project, as well as its significance. At discussions during a break-out session on the topic of water and sanitation, Toray participants became more aware of the expectations people have for the Toray Group to make the most of its diverse technologies to contribute in the field of humanitarian aid.

<sup>1</sup> Organizers: the NGO Japan Platform, the Japan NGO Center for International Cooperation, the Japan CSO Coalition for Disaster Risk Reduction, Tohoku Gakuin University, and the Ministry of Foreign Affairs of Japan.



Participants discuss water and sanitation during a break-out session.

## TOPIC

### Toray Group CSR Report 2015 Honored at Environmental Communication Awards

The Toray Group was honored with a Prize of Excellence by the Environmental Communication Awards in recognition of the clear and comprehensible manner in which the report conveyed the Group's approach to CSR activities. The report presented important data on initiatives implemented in each sector based on the commitment of Toray's senior management to the medium-term management program and the Group's CSR Road Map.





## Social Contribution Activities

> Materiality Focus

**Promote social contribution activities, including those that help foster the next generation and encourage regional development, as a good corporate citizen**

### Fifth CSR Road Map goals

1. Voluntarily pursue ongoing social initiatives emphasizing education, environment, communities, and employees, focused on linking to CSR and in accordance with Toray Group Social Initiative Policies
2. Leverage Toray Group strengths and community attributes to support high quality education

### Management

The Toray Group considers the building of trust with communities as a foundation for doing business, and has identified community contribution as an issue that is material to its pursuit of social responsibility.

The Toray Group Social Initiative Policies that were adopted in 2005 are based on the corporate philosophy of “contributing to society through the creation of new value with innovative ideas, technologies and products.” The Group will endeavor to meet community expectations by helping to realize sustainable growth, working harder than ever to leverage its resources to effectively plan and implement social initiatives.

### 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.
2. 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.

3. 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.

### Priority Areas for Social Contribution



Copyright © 2017 TORAY INDUSTRIES, INC.

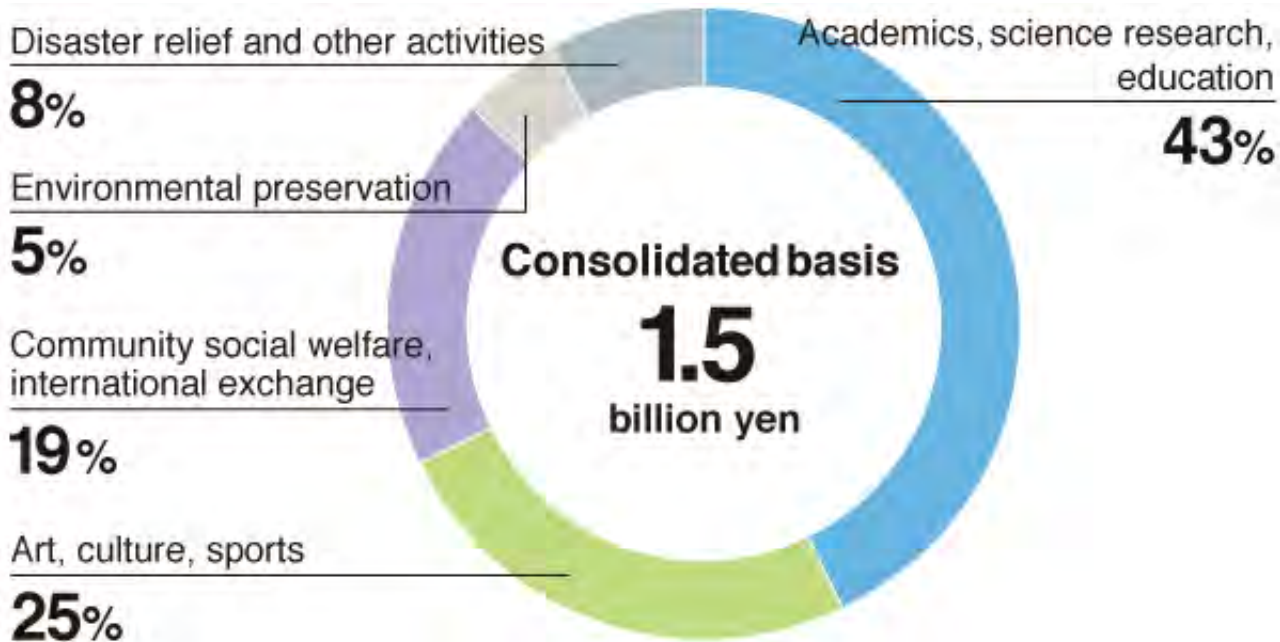
## Fiscal 2015 Result



As a member of the 1% Club, an organization founded in 1990 by Nippon Keidanren (Japan Business Federation), Toray has pledged to invest about 1% of its consolidated ordinary income into social contribution activities. In fiscal 2015 the Group invested some 1.5 billion yen on a consolidated basis (1.0% of consolidated ordinary income) and some 1 billion yen on a non-consolidated basis (1.5% of non-consolidated ordinary income), to achieve the one percent target. The main beneficiaries were the Toray Science Foundation in Japan and three ASEAN countries (Malaysia, Thailand, and Indonesia), and sponsorship of the Shanghai International Marathon.

The Toray Group has established three key performance indicators (KPIs) in the area of social contribution. The social contribution expenditure, measured as a percentage compared with the average from fiscal 2011 to 2013, was 135% in fiscal 2015 and met the target. The number of locations implementing social initiatives was 140 including 21 Toray business sites, 53 group companies in Japan, and 66 group companies outside of Japan. The Group also met or exceeded the following KPI targets: Number of persons reached through educational initiatives (13,600 persons versus a target of 10,000 persons or more), satisfaction rate of participants (97% versus a target of 90% or above), and satisfaction rate of employees involved in educational projects (98% versus a target of 90% or above).

### Breakdown of Expenditure in Fiscal 2015



Copyright © 2017 TORAY INDUSTRIES, INC.

## Education

For many years, as part of its efforts to promote science and technology, the Toray Group has been carrying out various educational programs for people pursuing science and engineering. The Group has broadened these activities to include elementary and junior high school students in recent years. Incorporating information on its products into teaching materials, the Group is implementing educational programs and other initiatives as it works to actively support education around the world.

### Supporting Science in the Classroom

The Toray Group has been sending employees to elementary and junior high schools to offer science workshops since 2007. In fiscal 2015, science workshops were conducted at 34 schools in Tokyo, Osaka, Aichi and other prefectures in Japan, as well as in the United States, one-third of which requested another workshop for the following year. The program was expanded in fiscal 2015 to encompass schools in Fukui and Shiga prefectures. The workshops won positive feedback from the schools for helping students to understand how advanced materials work and the role they play in society and stimulating their interest in science. Toray also donated laboratory equipment and teaching materials to 16 schools.



Science workshop in a classroom in Japan



Science workshop at a school in the United States

In June 2015, employees of Toray Plastics (Shenzhen) Co., Ltd. taught a workshop at an elementary school in Shenzhen, China on the importance of conserving global water resources.

In August 2015, employees of Thai Toray Synthetics Co., Ltd. taught a science workshop for 60 sixth-grade students at an elementary school near the company's Bangkok Factory. Since it was the first time for Toray employees to conduct a science workshop for students in Thailand, Toray staff made careful preparations before the workshop, including meeting with local government officials and school staff, creating teaching materials, and training the instructors. The school welcomed the Toray employees with a ceremony and the students enjoyed the workshops.



Environmental workshop in China



## Toray Conducts Science Workshops at Boeing-Sponsored Event

In September 2015, Toray conducted science workshops as part of “Boeing STEM Program in Japan—The Seattle Museum of Flight Comes to Japan,” an event organized by the Japan Science Foundation/Science Museum. Research staff from Toray’s Composite Materials Research Laboratories conducted workshops for elementary and junior high school students on high-performance fibers and the ways they are changing the world. Toray employees were eager to share their knowledge with the students in the hope that it would stimulate their interest in science and technology and perhaps lead them to consider careers in science.



Enthusiastic students during a quiz game.

## Supporting Career Choices

The Toray Group is supporting career education for students. In fiscal 2015, the Group cooperated with initiatives in various parts of Japan that aim to broadly expose students to career options, by receiving field trips and sending Toray employees to speak at schools.

In the city of Fuji in Shizuoka Prefecture, female researchers from the Medical Products Quality Assurance Department of Toray visited with junior high school students to talk about R&D and quality assurance work for pharmaceuticals and conduct a demonstration, as part of the gender equality curriculum.

Employees of the Global Environment Research Laboratories at Toray received a group of junior high school students and conducted a workshop on research into water treatment membranes, fulfilling a request to visit the laboratory as part of the science curriculum.





Toray researcher explains the equipment used in quality testing



Students examine an assessment device for water treatment membranes.

## Promoting Science and Technology

Toray established the Toray Science Foundation in 1960, founding one of the first private-sector research assistance organizations in Japan, which is still highly regarded today. The objective of the Foundation is to promote science and technology research and contribute to scientific, technological, and cultural progress. The Foundation subsidizes the work of young researchers in the natural sciences, recognizes outstanding achievements in science and technology together with science educators in junior and senior high schools, and publicizes the work of awardees.

From 1993 to 1994, Toray established foundations in Malaysia, Thailand, and Indonesia that work to facilitate science and technology progress in their respective countries.



Toray Science Foundation's 56th presentation ceremony

## Related Information

> [Toray Science Foundation](#)



Copyright © 2017 TORAY INDUSTRIES, INC.

## The Environment

Recognizing that raising awareness among a wide array of stakeholders is critical to building a more sustainable society, the Toray Group is carrying out initiatives intended to solve issues concerning the environment and water resources. Among these are tree-planting and cleanup activities surrounding worksites and plants, exhibitions, workshops, and collaborations with non-profit organizations.

### Environmental Conservation in Communities

The Toray Group is involved in ongoing clean-up activities to beautify communities near business locations and plants and to raise environmental awareness. Employees of Toray's Aichi Plant have been collecting refuse around the Shonai River as a part of the Adopt-a-River Program for the last 10 years.



Employees of Toray's Aichi Plant volunteering during the Adopt-a-River Program

### Collaborating with an NGO to Improve Water and Sanitation Conditions

Since fiscal 2011, Toray has partnered with the non-governmental organization Japan Water Forum to support projects aimed at enhancing water and sanitation conditions for 12 elementary schools on Lombok Island in Indonesia. In fiscal 2015, project staff assessed the condition of previously installed toilets and rainwater collection tanks and made repairs, held workshops for teachers and studied the self-management of facilities.



School visit by the chief of culture and education of West Lombok Regency

In March 2016, project staff visited schools with the chief of culture and education in West Lombok Regency, and met with school principals to exchange opinions.

### **VOICE** Message from Project Partners

Before the rainwater collection tank was installed, our only source of water was a well that the school shared with an adjacent home. Thankfully, the installation of the rainwater collection tank gave us another source of water. The project's efforts to educate schools about water and sanitation inspired us to get students to take turns cleaning the bathrooms. I am pleased that the water situation has improved significantly for our school. (Principal Mustalim, S.Pd.)

School health initiatives like this one are very important. In many households, soap isn't provided near the toilet. We hope that the students will take the sanitary practices that they learned at school and apply them at home. (Chief H. Ilham, S.Pd., M.Pd.)



Mustalim, S.Pd., Principal of DN Pelangan Elementary School (right) and H. Ilham, S.Pd., M.Pd., chief of culture and education, West Lombok Regency

### **Indonesia Synthetic Textile Mills Hosts Environmental Education Session**

In November 2015, P.T. Indonesia Synthetic Textile Mills hosted a joint environmental education session organized by the Indonesian government and the municipality of Tangerang. The company was chosen to host the session in recognition of its outstanding environmental achievements. The session was attended by 54 people from 41 companies and two government branches, and included presentations on safety and environmental initiatives at Indonesia Synthetic Textile Mills as well as discussions about wastewater treatment, recycling, energy conservation, and disaster mitigation.



Kazuyoshi Tsuji, President of P.T. Indonesia Synthetic Textile Mills, speaks to the participants.

### **Planting Mangrove Trees**

In December 2015, employees of Toray Plastics (Malaysia) Sdn. Bhd. helped to plant mangrove trees through an event organized by the non-profit Penang Inshore Fishermen Association. Twenty-four employees including the president attended the tree planting and learned about the importance of conserving coastal habitats as a shield against natural disaster, and preserving mangrove swamps as habitats for diverse living creatures. The company also made a donation to the association, in order to fund a portion of a wooden pedestrian bridge that is being constructed in the mangrove forest.



Toray employees planting mangrove trees in Malaysia

### Science Workshop on Water Purification Technology

On February 20, 2016, Toray conducted a science workshop as part of an event exploring water purification technology at the Ibaraki Kasumigaura Environmental Science Center. The center staff conducted a hands-on workshop in which the participants made filters using plastic bottles, which was followed by the Toray workshop in which employees explained how water is treated and purified. Some 30 children and their parents attended the Toray workshop. The center works in partnership with citizens, researchers, corporations, and governments to pursue lake and river conservation initiatives in the Kasumigaura area, and drew on Toray's expertise with water treatment technologies to help raise awareness for environmental conservation in the community.



A Toray employee explains how water treatment membranes work.



Copyright © 2017 TORAY INDUSTRIES, INC.

## Local Communities

Toray and its group companies pursue growth in balance with community development, striving for good corporate citizenship by honoring community ties and responsibilities.

### Beloved Hometown Project

In fiscal 2015, Luckytex (Thailand) Public Company Limited launched the Beloved Hometown Project, with the objective of assisting the improvement and development of schools and public facilities in the home towns of its employees. Employees submit proposals to have company funds used for improvement and development projects for schools and public facilities in their home towns, and selected projects are funded by Luckytex. In the first year of the program, three schools received funding to build and repair an outdoor passage at the school, and to build and repair school libraries.



Toray employees and students paint an outdoor passage at Bann Jomsri School.



Toray employees, together with students and teachers,

commemorate the new library at Bann Sumphu School.

## **VOICE** Message from a Project Manager

### **Proud to Support Employees' Home Towns**

Luckytex (Thailand) Public Company Limited launched the Beloved Hometown Project in 2015 as a community initiative to help realize the wishes of the company's employees, by assisting with the maintenance and improvement of schools and public facilities in their home towns. The employees are proud to be giving back to their home towns, and happy to see the joy and gratitude of the residents. We are grateful to the company for giving us these opportunities. The project is making a big difference in the development of faraway communities, and building better relations among the company, employees, and communities.



**Nantika Hirusus**  
Deputy General Manager,  
Human Resources Department,  
Luckytex (Thailand) Public  
Company Limited

## **Supporting University Education in Malaysia**

In 2013, Toray Group companies in Malaysia contributed 4 million ringgit to fund the construction of the Toray-USM Knowledge Transfer Centre at the University of Science, Malaysia (USM). A grand opening ceremony was held in December 2015.

USM is using the facility to conduct programs that preserve and perpetuate the culture, history, traditions, and environment of Malaysia. The companies will further collaborate with USM in various areas including joint research, researcher exchanges, receiving field trips, accepting interns, providing scholarships and strengthening the partnership.



Malaysia's Minister of Higher Education and other guests attended the inauguration ceremony of the center.

## **Agricultural Education in South Africa**

Toray and Mitsukawa Co., Ltd. launched an agriculture education program to deploy tube-shaped Roll Planter™ products made from ecodear™ plant-based polylactic

acid fiber at an elementary school in an impoverished region of South Africa. The program teaches students how to grow food to serve in school meals.

Toray supplied the school with Roll Planter™ and drip irrigation equipment, which are being used to raise crops, and the school takes care of the plants themselves. In April 2016, the students planted seeds and looked forward to raising spinach and cabbages. Roll Planter™ is a registered trademark of Mitsukawa Co., Ltd.



Students in South Africa plant seeds using Roll Planter™

## Sponsoring the Shanghai International Marathon

Toray and Toray Industries (China) Co., Ltd. are helping to promote sports in China by sponsoring the Shanghai International Marathon. In its 20th year, the 2015 event attracted some 35,000 runners, who participated in a variety of races including a full marathon, half marathon, 10 km, and 5 km runs.



At the starting line of the 2015 Shanghai International Marathon held on November 8, 2015

## Sponsoring Japan Dance Team Championship

Chori Co., Ltd. has been sponsoring the Japan Dance Team Championship since the inaugural event in 2013. The competition brings together the best dance teams from high schools in Japan to compete for the national championship. Exhibitions are also held during the event to showcase various dance performances, promoting dance as a lifelong sport and popular endeavor in order to support the healthy development of youth.



At the fourth annual Japan Dance Convention

## Lectures on the Olympics and Paralympics

In December 2015, ex-Olympian Nobuharu Saito of Toray Construction Co., Ltd., who appeared in the Beijing Olympics and is a former member of the Toray Arrows volleyball team, was invited to speak about the Olympics and Paralympics at an elementary school in Tokyo. In talking to the students, Saito stressed the importance of not giving up and displaying gratitude. In fiscal 2015, Saito also conducted volleyball clinics and spoke with students at three schools in Shizuoka Prefecture.



Nobuharu Saito speaks to students.

## Soft Volleyball Class at Elementary Schools

Starting in fiscal 2015, former players and coaches of the Toray Arrows men's and women's volleyball teams visited elementary schools to teach soft volleyball to their physical education classes. The classes were conducted at two Tokyo area schools and instructed students in basic techniques, which they then applied in practice games. The students enjoyed learning how to pass and share the ball among team members.



Former players of the Toray Arrows teach soft volleyball at an elementary school.

## Supporting Youth Sports

Toray Group employees who belong to corporate rowing, judo, kendo, and volleyball clubs are involved with communities by coaching youth sports and offering use of in-house facilities to youth sports camps. Toray is furthering its community engagement and encouraging personal development through sports.





Shuya Matsuda, who previously represented Japan in international competition, coaches the rowing club of Seta-kita Junior High School in Otsu.

## Disaster Assistance

Toray continues to donate a portion of proceeds from the sale of Toraysee™ microfiber cleaning cloths in seasonal designs, to a children's fund operated by the National Federation of UNESCO Associations in Japan that is assisting children who were affected by the Great East Japan Earthquake.

The Toray Group responded to the Kumamoto Earthquake in April 2016 by donating 34 million yen to help people in affected areas and providing various supplies valued at about 23 million yen, including compression stockings, cut-resistant gloves, compact emergency freshwater generators, and water purifiers.



Toraysee™ microfiber cleaning cloths in seasonal designs



Copyright © 2017 TORAY INDUSTRIES, INC.

## Social Initiative Action Plan for Fiscal 2016 and Beyond

In fiscal 2016, the Toray Group will continue to pursue social initiatives focusing on the promotion of science and technology. In addition, the Group will implement new projects, taking into account its priority areas for social contribution (education, the environment, communities, and employees), connections with its medium-term management program Project AP-G2016, its strengths, and the characteristics of local communities. The Group is using the corporate intranet and training programs to ask employees to propose new initiatives, and will focus on actively disseminating information to ensure accountability.



Copyright © 2017 TORAY INDUSTRIES, INC.

## Toray Science Foundations in ASEAN

Toray has established science foundations in three Southeast Asian nations where it has been doing business since the 1960s. These foundations are contributing to the advancement of science and technology in each country, with the objective of contributing to the progress of science and technology and promoting science education.

### Malaysia Toray Science Foundation

The Malaysia Toray Science Foundation was established in August 1993 through an endowment from Toray Industries, Inc., with the objective of contributing to the progress of science and technology in Malaysia and promoting science education. The Foundation uses interest income from the endowment, funds from the Toray Science Foundation, and annual contributions from Toray Group companies in Malaysia to recognize outstanding achievements in science and technology and science education, and to award research grants for research in the natural sciences.

The Foundation has extended awards and grants totaling 9 million ringgit to some 650 people, including science researchers, young researchers in basic science, and science educators.

The Foundation holds an annual award presentation ceremony that is attended by the Minister of Science, Technology and Innovation of Malaysia and the Japanese ambassador to Malaysia. The awards are a badge of honor for the award winners and grant recipients. During the solicitation period for entries, the Foundation collaborates with universities and the Malaysian Ministry of Education to actively publicize the grants for young researchers and science education awards throughout the country.

The Foundation aims to spark the development of science and technology researchers, youth, and educators, as well as to contribute to the medium- and long-term progress of science and technology in Malaysia. The Foundation also seeks to contribute to mutual understanding, friendship, and goodwill between Malaysia and Japan and to economic development in Malaysia.



22nd presentation ceremony of Malaysia Toray Science Foundation held in November 2015



Award winners describing their research and education efforts

## Thailand Toray Science Foundation

The Thailand Toray Science Foundation was established in June 1994 through an endowment by Toray Industries, Inc., with the objective of contributing to the progress of science and technology in Thailand and promoting science education. The Foundation uses interest income from the endowment, funds from the Toray Science Foundation, and annual contributions from Toray Group companies in Thailand to recognize outstanding achievements in science and technology and science education, and to award research grants for basic research in the natural sciences.

The Foundation has extended awards and grants totaling 113 million baht to 628 people, including science researchers, young researchers in basic science, and science educators.

The Foundation holds an annual award presentation ceremony. From the inaugural ceremony in 1995 through 2009, the ceremony was attended by President of the Privy Council His Excellency General Prem Tinsulanonda, and since 2010 has been attended by the Privy Councillor His Excellency General Surayud Chulanont. The ceremony is always a big moment for award winners and science and technology researchers receiving grants.

The Foundation aims to foster the development of science and technology researchers, youth, and educators, and to contribute to the medium- and long-term progress of science and technology in Thailand. The Foundation also seeks to contribute to mutual understanding, friendship, and goodwill between Thailand and Japan and to economic development in Thailand.



22nd presentation ceremony of Thailand Toray Science

Foundation held in March 2016



Professor Kovit Pattanapanyasat receives an award from Privy Councillor His Excellency General Surayud Chulanont.

## Indonesia Toray Science Foundation

The Indonesia Toray Science Foundation was established in December 1993. The Foundation uses interest income from its endowment, funds from the Toray Science Foundation, and annual contributions from Toray Group companies in Indonesia to recognize outstanding achievements in science and technology and science education, and to award research grants for science and technology. From the beginning, the Foundation has enlisted the cooperation of the Indonesian Institute of Sciences, whose Director-General also heads the Foundation.

The Foundation has extended awards and grants totaling 18.3 billion rupiah to 631 people, including science researchers, young researchers in basic science, and science educators.

The Foundation has assisted many individuals who are contributing to the progress of science and technology in Indonesia. Past recipients of science and technology grants now teach as professors and associate professors at leading universities, including the University of Indonesia, Bandung Institute of Technology, Gadjah Mada University, and Sekolah Tinggi Teknik Surabaya, and others conduct research at the Indonesian Institute of Sciences.

The Foundation aims to contribute to the medium- and long-term progress of science and technology in Indonesia, and to contribute to mutual understanding, friendship, and goodwill between Indonesia and Japan and to economic development in Indonesia.



22nd presentation ceremony of Indonesia Toray Science Foundation held in March 2016



Professor Mohamad Nasir, Minister of Research, Technology and Higher Education of Indonesia



Copyright © 2017 TORAY INDUSTRIES, INC.



# Environment

Safety, accident prevention, and environmental preservation are highest management priorities for the Toray Group. The Group endeavors to secure the safety and health of society and employees, and carefully considers environment factors in each stage of the product life cycle, from materials procurement and the manufacturing and distribution of products through disposal.

## Safety, Accident Prevention, and Environmental Preservation

Safety, Health, Accident Prevention and Environmental Preservation Management	Occupational Safety and Accident Prevention Activities	Results of the Fourth Medium-Term Environmental Plan and Formulation of the Fifth Medium-Term Environmental Plan
Conserving Energy and Curbing Global Warming	Voluntary Initiatives to Reduce Atmospheric Emissions of Chemical Substances	Initiatives to Prevent Air and Water Pollution
Initiatives for Managing Water Resources	Initiatives to Reduce Waste	Environmental Risk Management
Environmental Accounting	Biodiversity Initiatives	

## Environmental Data

--	--	--

Environmental Impact Overview Fiscal  
2015

Chemical Substance Emissions and  
Transfer Data

Sites with ISO 14001 Certification  
(as of March 2016)

Environmental Data for 12 Toray  
Plants and Principal Group  
Companies

### Third-Party Assurance

Third-Party Assurance



Copyright © 2017 TORAY INDUSTRIES, INC.



# Safety, Accident Prevention, and Environmental Preservation

Ensure the safety and health of society and employees, and protect the environment in all business processes, from procuring raw materials and manufacturing to the supply and disposal of products

## Fifth CSR Road Map goals

1. Clarify and fully comply with essential safety guidelines, and encourage employees to think carefully before taking action to prevent accidents
2. Implement centralized initiatives based on Toray Group Safety, Health, Accident Prevention and Environmental Activity Policy
3. Implement Fourth Medium-Term Environmental Plan and achieve targets by fiscal 2015

## Safety, Health, Accident Prevention and Environmental Preservation Management

### Action Policy and Main Activities

The Toray Group operates a policy for safety, health, accident prevention, and environmental activities. The policy is revised every year to reflect the results from the previous fiscal year, and specifies the main activities to implement in each policy area. The table below summarizes the 16 main activities that were implemented in fiscal 2015

#### Safety, Health, Accident Prevention, and Environment Activity Policy of Toray Group in 2015

Action policy		Main activities
Common	Accomplish risk management	<ul style="list-style-type: none"> <li>• Undertake measures to reduce risks</li> </ul>
Safety	3Z activities <sup>1</sup> for zero accidents	<ul style="list-style-type: none"> <li>• Continue to encourage all employees to think carefully before taking action</li> <li>• Further increase safety awareness of unit heads and shift leaders</li> </ul>

		<ul style="list-style-type: none"> <li>• Equip managers with better grasp of production floor</li> <li>• Expand communication to foster positive and communicative workplaces</li> <li>• Check all procedures involving rotary and bladed machinery and review relevant safety measures</li> </ul>
Health	Rigorous chemical substance management	<ul style="list-style-type: none"> <li>• Expand and strengthen management of hazardous chemical substances and toxic chemicals</li> </ul>
	Emphasize occupational health management	<ul style="list-style-type: none"> <li>• Take countermeasures against pandemic influenza</li> <li>• Enhance mental health management</li> </ul>
Accident prevention	Achieve zero fire accidents	<ul style="list-style-type: none"> <li>• Accomplish Fire Prevention Project's second phase</li> </ul>
	Improve large-scale earthquake response	<ul style="list-style-type: none"> <li>• Execute large-scale earthquake and tsunami response drills</li> <li>• Develop business continuity plans at group companies</li> </ul>
Environment	Implement the Fourth Medium-Term Environmental Plan	<ul style="list-style-type: none"> <li>• Reduce greenhouse gases</li> <li>• Reduce atmospheric emissions of chemical substances</li> <li>• Achieve waste reduction targets</li> </ul>
	Achieve zero environmental accidents	<ul style="list-style-type: none"> <li>• Implement strict measures to prevent environmental accidents</li> </ul>

1. Namely, power-up 3Z activities, which have been implemented as part of Toray Group's medium-term management program since 2011 and are intended to help realize the goals of zero accidents, zero problems, and zero claims.

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

Toray implements its system for safety, health, accident prevention, and environmental preservation through two group-wide committees: the Safety, Health, and Environment Committee and the Global Environment Committee. (See chart below.)

The Safety, Health, and Environment Committee establishes policies and strategies for the entire Toray Group. The Global Environment Committee discusses and sets strategies aimed at securing the growth of the Green Innovation business, fighting climate change, and helping to build a recycling-oriented society.

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



## Audits and Follow-Up Measures

The Toray Group conducts annual audits to objectively assess and improve the execution and management of safety, health, accident prevention, and environmental initiatives at offices and plants of group companies. Internal audits are conducted using a standardized audit checklist, and encompass visits and production floor guidance provided by directors and managers from other group companies.

In fiscal 2015, audits were conducted for all 12 plants and one research laboratory at Toray, 47 plants operated by 25 group companies in Japan, and 57

plants operated by 42 group companies outside of Japan. The audits focused on three areas: ensuring a continued increase in the safety awareness of unit heads and shift leaders, progress on the Fire Prevention Project's second phase, and ensuring prevention of environmental accidents. The audits helped to secure systematic improvements by identifying and addressing facility issues and issues relating to management.



Audit at Toray Coatex Co., Ltd.

## ISO 14001 Certification

The Toray Group is pursuing the acquisition of ISO 14001, the certification for environmental management system, by all of its group companies, offices, and plants. Toray had completed accreditation for all 12 of its plants by the end of 2000. By fiscal 2014, 36 plants at 22 group companies in Japan and 52 plants at 39 group companies outside Japan were certified.

In fiscal 2015, two plants at two companies (P.T. Toray Polytech Jakarta of Indonesia and Toray Jifa (Qingdao) Textile Co., Ltd. of China) newly acquired ISO 14001 certification.

## Related Information

> [Sites with ISO 14001 Certification](#)

## Responsible Care Program

Under Responsible Care programs, chemical companies pursue voluntary management of chemical substances, transparent disclosure, and communication with the public. Companies committed to Responsible Care take safety, health, and environmental measures across the entire product lifecycle—from development, manufacturing, distribution and consumer use to the disposal—and then disclose the results of their efforts.

Toray implements its program in accordance with the Responsible Care Global Charter.<sup>2</sup> In fiscal 2015, Toray set priority issues: implementing the Fourth Medium-Term Environmental Plan, strengthening accident-prevention countermeasures via the second phase of its Fire Prevention Project, and preparing for the chemical risk assessments specified in Japan's revised Industrial Safety and Health Act.

<sup>2</sup> The Responsible Care Global Charter was originally established in 2005 to encourage companies to take concrete action that is understandable to external stakeholders. The Charter was revised in 2014, and Toray was a signatory to both the original and revised Charter.

## Complying with REACH and Other International Chemical Substance Regulations

All business divisions of Toray, as well as its group companies in and outside Japan, have systems in place for securing compliance with European regulations on the Registration, Evaluation, Authorization and Restriction of Chemical Substances (REACH). The Toray Group is systematically working toward registration of designated substances by the final deadline of May 31, 2018. The Group monitors chemical substance regulations in other regions and countries including Taiwan and South Korea, sharing the information about changes and providing support to secure compliance. Toray and some of its group companies in Japan use the List of Lists (LOLI) Database,<sup>3</sup> a comprehensive database of chemical hazard and toxicity information and regulations in countries around the world, to ensure that they handle chemical substances safely and in compliance with relevant laws and regulations worldwide.

<sup>3</sup> Provided by the U.S. company, ChemADVISOR, Inc., LOLI is a search tool and database of regulatory lists from many countries around the world.

## Complying with Japan's Chemical Substances Control Law

With the revision of Japan's Chemical Substances Control Law<sup>4</sup> in April 2011, companies have been required to report on the manufacture, import, and utilization of general chemical substances. Toray and its group companies in Japan systematically responded to the revision and completed their report covering fiscal 2014 in June 2015.

<sup>4</sup> Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.



Copyright © 2017 TORAY INDUSTRIES, INC.

# Occupational Safety and Accident Prevention Activities

> Materiality Focus

Employees are key stakeholders of the Toray Group. Needless to say, ensuring their safety is the prerequisite to their capacity to make the most of their potential. Officers and employees work together to implement persistent safety initiatives with the goal of zero accidents, out of respect for humanity and the sanctity of life.

To raise the awareness, every year, the Toray Group creates a group-wide safety slogan. In fiscal 2015, the Group urged employees worldwide to always think carefully before acting in conducting their work, through the unique keyword of “Anzen Koh-Doh” (“thoughtful safety action”). The Toray Group is working hard to ensure that the message reaches all of its employees including those at group companies outside of Japan.

Due to the potential impact of an accident not only within the company but on surrounding communities, the Group places the highest priority on accident prevention.

## 2015 Safety Slogan

AP-G 2016

We Should Achieve “Zero Accidents”. Each of us does “Anzen Koh-Doh”!

~ “Seriousness” “Motivation” “Awareness” ~

Every year, company presidents, directors, and worksite and plant managers from Toray and its group companies around the world meet at the Toray Group Safety Meeting. At the meeting, presentations on safety action policies and main activities, lectures by external experts, and activity reports from worksites are offered to raise awareness of safety. The Group’s employees are all united under the leadership of top management in working on safety activities with the aim of achieving zero accidents.

Furthermore, the Safety Summit, safety lectures by Toray’s directors, and other events are held on a national and regional basis, and at each group company and plant of the Group. These efforts promote a common awareness of the Toray Group safety slogan, policies, and main activities, enabling centralized management of safety activities across the Group.



2015 Toray Group Safety Meeting in Toray Human Resources Development Center



Toray Group Safety Summit in Malaysia

## Toray Group Safety Record





In 2015, a group company outside Japan recorded an injury to an employee due to a malfunction with rotary machinery. Toray also recorded a fire that caused an equipment malfunction in a building. To prevent such accidents from occurring again, the Toray Group is implementing a comprehensive inspection of risks due to the malfunction of rotary machinery at all plants, and is reviewing the procedures for managing accident prevention for equipment.

The Group investigates the root cause of accidents and implements measures to prevent recurrence with the continued goal of achieving zero accidents, making safety its highest priority.

Toray has collected data on all occupational accidents since 1980, and for the Toray Group since 1990. Information on past accidents is used by all group companies as valuable data for implementing preventative measures. Both the number of occupational accidents and frequency of occupational accidents resulting in lost work time have declined, compared with when the data was first collected.

Meanwhile, the frequency rate for occupational accidents resulting in lost work time for the Toray Group overall in 2015 was flat compared to the previous fiscal year, at 0.14. Although this is a positive result compared with that of Japan's manufacturing industry (1.06), the target of 0.05 or lower was not achieved. Therefore, the Toray Group will seek to scrutinize the essential causes of individual accidents to comprehensively prevent the occurrence of similar accidents, while also encouraging employees to think carefully before taking action and holding active discussions on safety at each worksite.

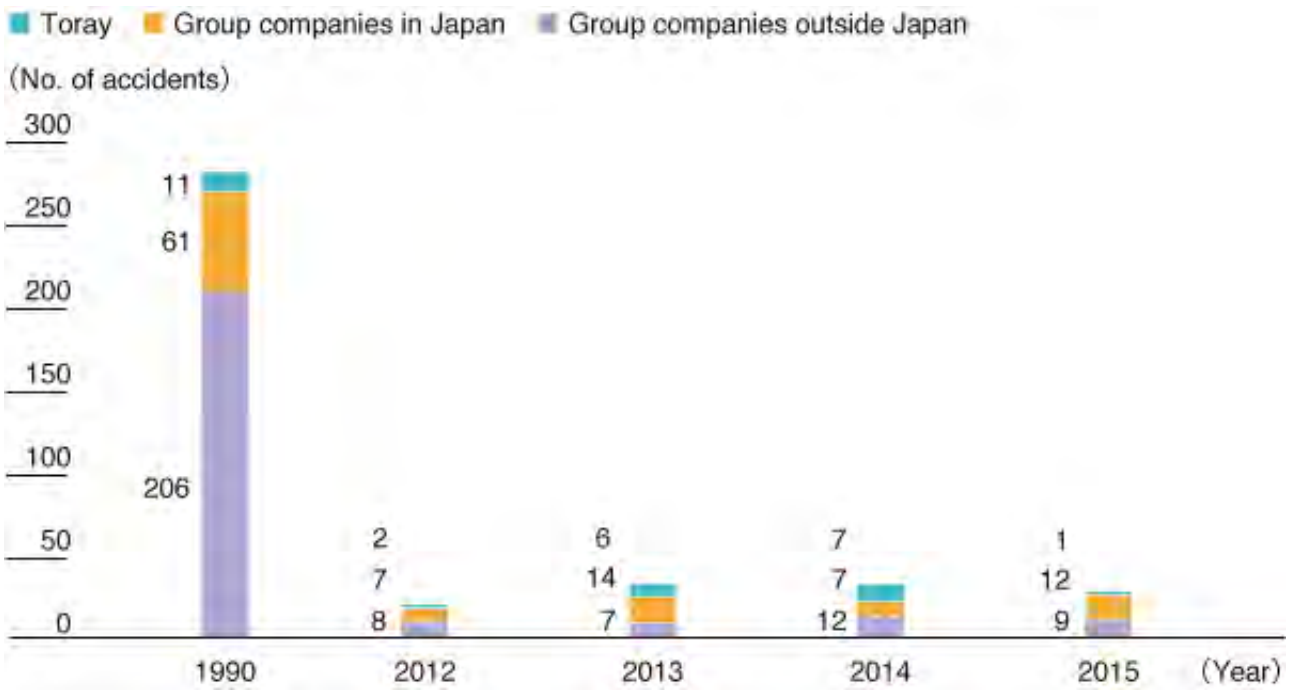
The Group will pursue a wide variety of activities to improve safety levels further, aiming to achieve the goal of zero accidents.



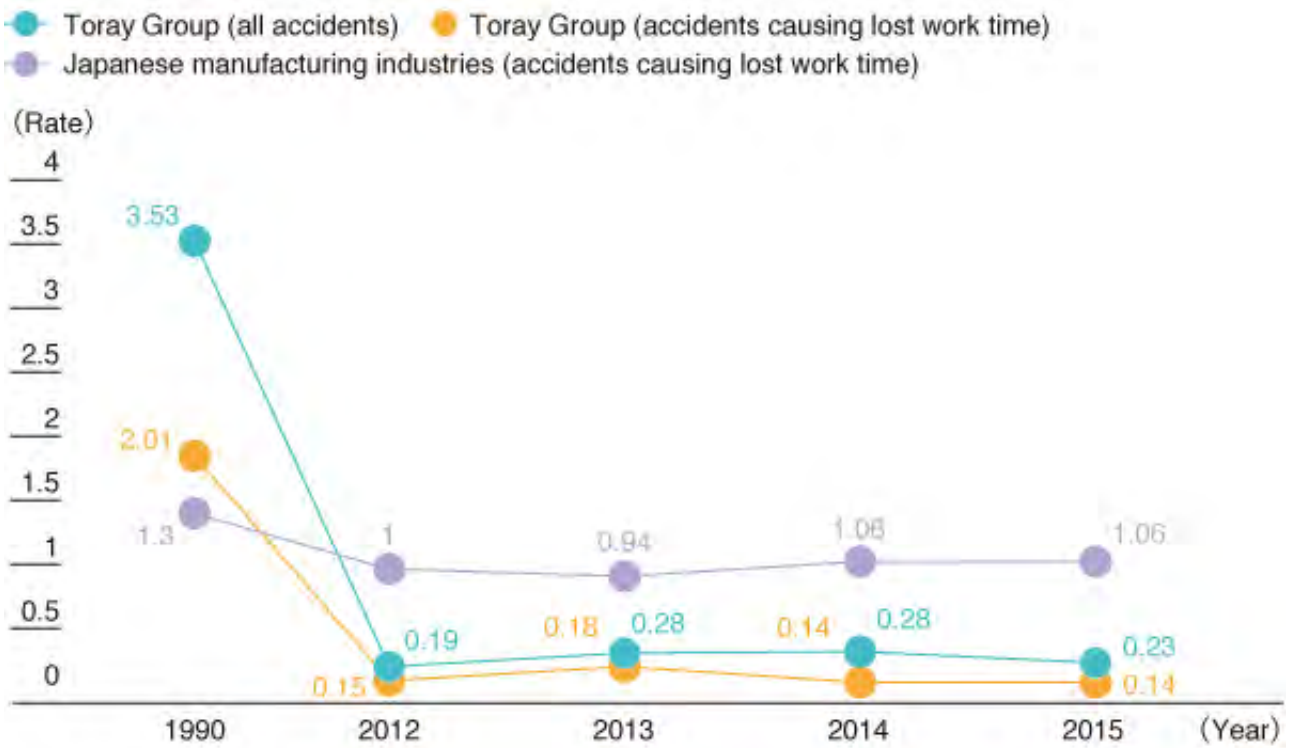
Unit manager meeting to share result of worksite discussion on safety (Toray's Okazaki Plant)

**Number of Occupational Accidents: Toray Group (Lost work time and non-lost work time)**





### Occupational Accident Frequency Rate<sup>5</sup>: Toray Group



<sup>5</sup> Occupational accident frequency rate: The number of fatalities and injuries at worksites per one million cumulative working hours

### Enhancing Safety and Accident-Prevention Training

As part of their safety and accident prevention training, Toray Group companies and plants provide workshops and hands-on simulations to sensitize employees to dangers and hazards. Safety devices are used to simulate dangers such as getting caught up in rollers, electrocution, and residual pressure. The Group also implements forklift training led by skilled forklift operators. In the area of accident prevention, the Group conducts simulation training to teach employees about the risk of fires and explosions, and provides training on the fundamentals of accident prevention. Additionally, the Group publishes articles on safety and accident prevention in its in-house newsletter, *People*. In 2015, the newsletter published a feature that examined the basics of fires and explosions, responding to an increase in these kinds of accidents at chemical plants in Japan.



Demonstrating the danger of fires and explosions at Toray Advanced Film Co., Ltd.



Forklift training conducted at Toray Amtecs Inc. by a trainer from Toyo Jitsugyo Co., Ltd.

**VOICE** Message from a Trainer for Plant Operators

**Using Our Training Plant to Improve the Skills of Chemical Plant Operators and Enhance Accident Prevention**

The chemical industry in Japan experienced numerous explosions at chemical plants from 2011 to 2012. To apply the lessons learned from these accidents, Toray's Tokai Plant established a training plant in March 2014 in order to improve the skills of chemical plant operators and enhance accident prevention. The training plant currently provides basic training for younger operators, ranging from new employees to those with up to six years of experience. The training covers the following aspects:

1. Handling of tools and pumps, and operation of distribution panels;
2. Preparation of flow charts, and overview and operation of instrumentation and distributed control systems; and
3. Starting, steady state operation, and stopping of chemical plant.

The training for younger employees comprises classroom training and practical training on the production floor, and covers plant operations as well as basic principles and operating procedures. Employees earn certifications after testing their understanding. As an instructor myself, I am continually working to find ways to maximize the understanding of our employees and their acquisition of the training content.

To enhance accident prevention, we established the following curriculum goals that have been implemented since fiscal 2015:

1. Improve the ability to solve virtual problems;
2. Improve the understanding of alarm and interlock settings; and
3. Assess hazards using hazard and operability study (HAZOP) techniques.

Moving forward, we are planning to further expand the training curriculum and provide training for employees from other Toray plants and business partners.



**Masahiro Koike**

General Affairs Department,  
Tokai Plant, Toray Industries,  
Inc.



Practical training (left) and training for distributed control systems

The Toray Group recognizes its duty to ensure the safety of the many subcontractors working at its sites. For example, representatives from subcontractors are invited to participate in monthly meetings of Toray's Safety and Health Committee. Safety meetings are also held regularly as a means to ensure that subcontractors are fully aware of Toray Group's policies, plans, and measures related to safety. In addition, Toray encourages its subcontractors to actively participate in general safety activities, such as by submitting ideas for safety posters and entering slogan contests.



Mutual safety inspection at Ishikawa Shokusan Inc.

In fiscal 2015, presidents of 10 Toray affiliates that provide ancillary services for plant operations cooperated to conduct mutual safety inspections of their facilities. The inspections served to verify the progress of safety initiatives, by monitoring hazardous work including forklift and packaging operations. Personnel advised each other on areas needing improvement and monitored the progress of improvements.

### Preparing for Accidents through Fire-Prevention Drills

All companies and plants in the Toray Group are making efforts to improve their accident-prevention capabilities by carrying out fire-fighting drills specifically intended for fires and explosions. The drills involved spraying water as well as simulated rescue of injured persons and response to a chemical leak.

Group plants that are next to the sea conduct evacuation drills in the event of a tsunami triggered by a large-scale earthquake.



Tsunami evacuation drill at Toray's Ehime Plant

### Initiatives for Improving Fire-Prevention Capabilities

In recent years, a spate of fires and explosions has occurred at major chemical companies in Japan. Since July 2012, the Toray Group has been implementing the second phase of its Fire Prevention Project to step up its fire-prevention capabilities.

In fiscal 2015, the Group continued to focus on recheck of ductwork and promotion of countermeasures, and deployment and penetration of the four key measures identified by an expert committee the previous year across the Group. Plants in which fire related incidents occurred investigated the underlying cause based on onsite audits conducted by the expert committee, and then developed countermeasures.

## Four Key Measures Identified by Expert Committee and Activity Results

Key measures	Details/objectives	Results of 2015 activities
Utilize fire-prevention checklist	Enhance and effectively utilize fire-prevention checklist	<ol style="list-style-type: none"> <li>1. Issued a revised fire prevention checklist that is easier to use, with procedures for using the checklist</li> <li>2. Appointed key person for departments operating the checklist and conducted training (about 550 persons)</li> </ol>
Enhance employee training	Review and issue fire-prevention textbook; prepare and implement company-wide fire-prevention training system	<ol style="list-style-type: none"> <li>1. Prepared and issued revised training materials for fire prevention, along with a summary version</li> <li>2. Established a training system for fire prevention, encompassing basic principles for fire prevention and skills training at the pilot plant</li> </ol>
Enhance management of manufacturing process change	Standardize manufacturing conditions, work and equipment change procedures	<ol style="list-style-type: none"> <li>1. Prepared and adopted corporate standards encompassing facilities, workers, work methods, and manufacturing conditions</li> <li>2. Conducted briefings sessions for the new corporate standards at 12 Toray plants</li> </ol>
Strengthen work security	Standardize hot work rules and procedures	<ol style="list-style-type: none"> <li>1. Adopted Japanese- and English-language safety guidelines for hot work</li> <li>2. Revised the standards for hot work at Toray and its group companies in Japan, and conducted follow-up activities to confirm implementation</li> </ol>

## Distribution Safety Initiatives

Toray is working to ensure safe distribution in its operations. In an effort to manage safety when transporting hazardous substances, Toray concludes security agreements with certain customers, raw material manufacturers, and shipping companies to designate their specific safety responsibilities and roles with regards to safety.

## Health Effects and Response to Asbestos

The Toray Group has manufactured and imported building materials containing asbestos in the past. In addition, certain buildings and facilities were constructed using such materials and thermal insulation containing asbestos. Starting in 2005, when asbestos-related health hazards became a social concern in Japan, Toray took action to address the issue of its own asbestos-containing facilities. The health program offers medical examinations to current and former employees who handled even small amounts of asbestos and wish to undergo an

examination. The Toray Group is working in good faith with individuals diagnosed with asbestos-related health issues by assisting with their applications for workers' compensation and providing an ongoing program of medical examinations. The Group has not been contacted about health issues by residents living near affected plants.

The health effects on former and current the Toray Group employees as of March 31, 2016 are described below.

- Certified occupational accidents arising from handling asbestos (Toray Group): 78 (58)
- Certified health victims based on Japan's Act on Asbestos Health Damage Relief (Toray Group): 8 (8)
- Medical examination recipients involving asbestos (Toray Group): 3,959

Note: Figures in parentheses refer to fatalities.



Copyright © 2017 TORAY INDUSTRIES, INC.

## Results of the Fourth Medium-Term Environmental Plan and Formulation of the Fifth Medium-Term Environmental Plan

Under the Fourth Medium-Term Environmental Plan, which covered fiscal 2011–2015, the Toray Group worked proactively to reduce greenhouse gas emissions, atmospheric emissions of chemical substances, and wastes. As a result, the Group achieved all targets of the plan by fiscal 2015.

### Results of the Fourth Medium-Term Environmental Plan

Area	Toray Group fiscal 2015 target	Fiscal 2015 results
Curb global warming	Maintain greenhouse gas emissions at least 10% below the fiscal 1990 level (Toray)	17% reduction
	15% or greater reduction in greenhouse gas emissions per unit of sales compared to fiscal 1990 (Toray Group in Japan)	16% reduction
Management of chemical substances	Atmospheric emissions of PRTR Law-specified substances: 70% reduction compared to fiscal 2000	71% reduction
	Atmospheric emissions of volatile organic compounds (VOCs): 70% reduction compared to fiscal 2000	72% reduction
Waste reduction	Zero emissions goal: Achieved at 30 Toray Group plants	Achieved at 40 plants of 22 companies
	Simply disposed waste rate : 25% or lower (Toray Group)	21.1%
	Maintenance of a recycling rate of 85% or more (Toray Group)	87.2%
	Landfill waste rate: 2% or lower (Toray Group in Japan)	1.5%

Building on the results of the Fourth Medium-Term Environmental Plan, the Group formulated its Fifth Medium-Term Environmental Plan, which runs through the target year of fiscal 2020, looking to further expand its environmental initiatives. Amid further projected increases in production volumes for high-performance films and carbon fiber, the Group will continue to pursue environmental initiatives in order to achieve the challenging targets of the new plan.

## Fifth Medium-Term Environmental Plan Targets

Area	Toray Group fiscal 2020 target
Curb global warming	Maintain greenhouse gas emissions at least 15% below the fiscal 1990 level (Toray)
	15% or greater reduction in greenhouse gas emissions per unit of sales compared to fiscal 1990 (Toray Group in Japan)
Management of chemical substances	Atmospheric emissions of PRTR Law-specified substances: 70% reduction compared to fiscal 2000 (Toray Group)
	Atmospheric emissions of volatile organic compounds (VOCs): 70% reduction compared to fiscal 2000 (Toray Group)
Waste reduction	Zero emissions goal: Achieve at 45 or more Toray Group plants
	Simply disposed waste rate: 22.5% or lower (Toray Group)
	Recycling rate: Maintain at 86% or more (Toray Group)
	Landfill waste rate: 1.3% or lower (Toray Group in Japan)



Copyright © 2017 TORAY INDUSTRIES, INC.



# Conserving Energy and Curbing Global Warming

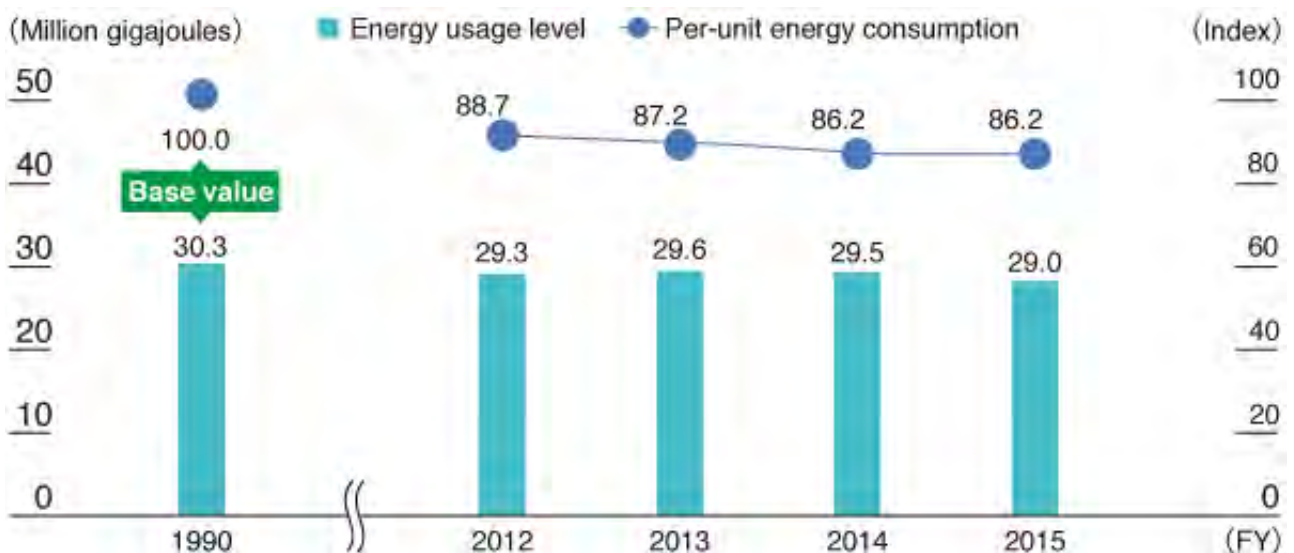
> Materiality Focus

With a view to helping realize sustainable, low-carbon societies, the Toray Group is pursuing initiatives for reducing greenhouse gas emissions. Toward this end, the Group worked to save energy by improving manufacturing processes and introducing cogeneration in accordance with its Fourth Medium-Term Environmental Plan, which was launched in fiscal 2011. The Group will be working to meet new targets for reductions in greenhouse gas emissions in fiscal 2016 and beyond.

## Toray Energy Conservation Activities

Toray has set a goal of reducing its per-unit energy consumption by 2% annually. In fiscal 2015, Toray reduced energy consumption by 1.6% year-on-year and improved its per-unit energy consumption by 0.04% year-on-year, bringing it down now to 13.8% below the base year of fiscal 1990. The reduction was achieved due to productivity improvements combined with steady implementation of energy conservation initiatives at plants, as well as energy conservation diagnostics performed by the Company's own energy efficiency specialists.

Energy Consumption and Per-unit Energy Consumption Index (Toray)



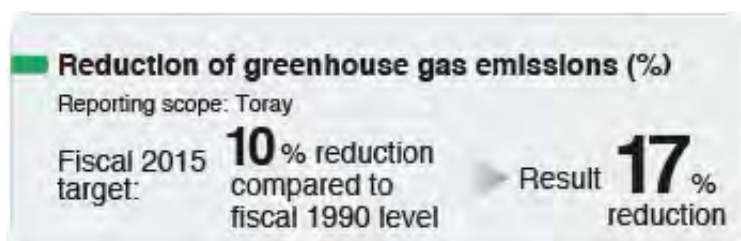
## Promoting Energy Conservation Diagnostics

The Toray Group organizes energy conservation teams to help carry out energy conservation diagnostics at plants according to a plan. In fiscal 2015, these activities were conducted at four of Toray's plants, along with six group company plants at in Japan and one outside Japan. The energy saved during the year was equivalent to about 25,400 tons of CO<sub>2</sub>.



Reviewers meeting during energy conservation diagnostics program at Polymerization Department of Toray's Tokai Plant

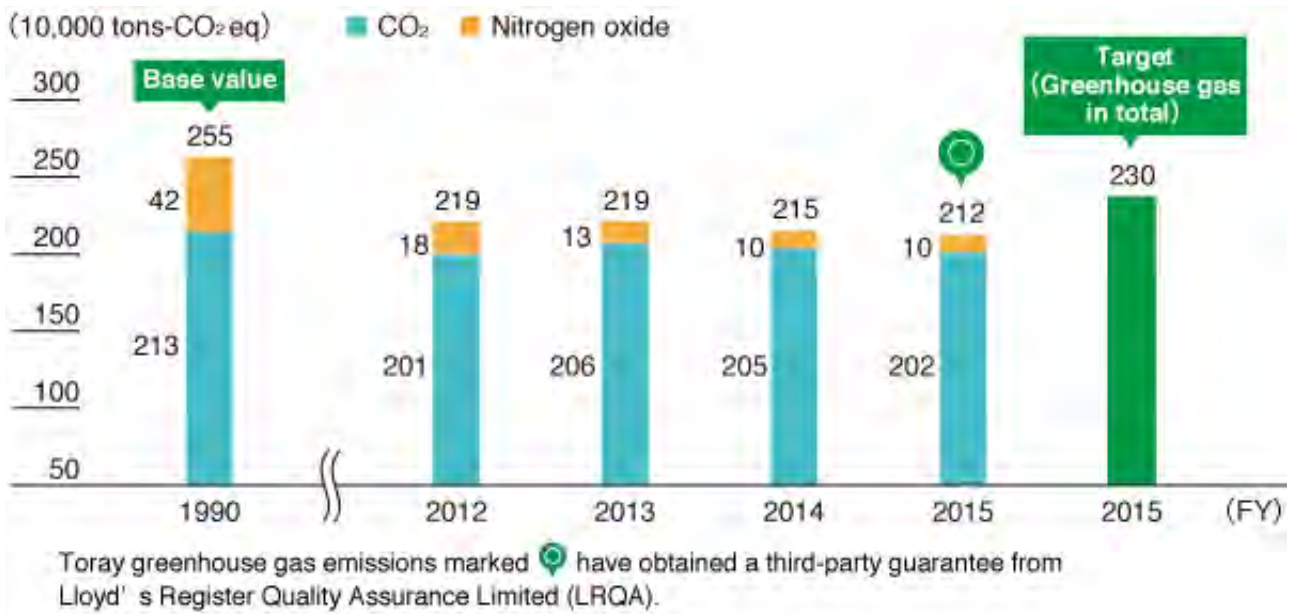
## Toray's Efforts to Fight Global Warming



Under the Fourth Medium-Term Environmental Plan, which covered fiscal 2011–2015, Toray systematically worked to reduce greenhouse gas emissions, with the goal of maintaining greenhouse gas emissions at least 10% below the 1990 level. In fiscal 2015, Toray reduced its CO<sub>2</sub> emissions by 32,000 tons year-on-year. Greenhouse gas emissions were down 1.4% year-on-year at 2.12 million tons, which was 17% below the 1990 level, continuing to meet the reduction target.

Moving forward, Toray will endeavor to meet its reduction targets despite the higher production volumes projected due to business growth.

### Greenhouse Gas Emissions (Toray)



### Gas Cogeneration and Mixed Combustion of Biomass Fuel

The Toray Group is systematically switching to natural gas and installing cogeneration systems to conserve energy. In fiscal 2015, Toray's Mishima Plant began operation of a cogeneration system.

The Group is also focusing on the use of biomass fuel made from wood chips for power generation. Toray's Tokai Plant is expanding the mixed combustion of wood chips for its private boiler power generation facility, to reduce CO<sub>2</sub> emissions from boiler operations.

These measures are projected to reduce approximately 40,000 tons of CO<sub>2</sub> emissions annually in fiscal 2016.



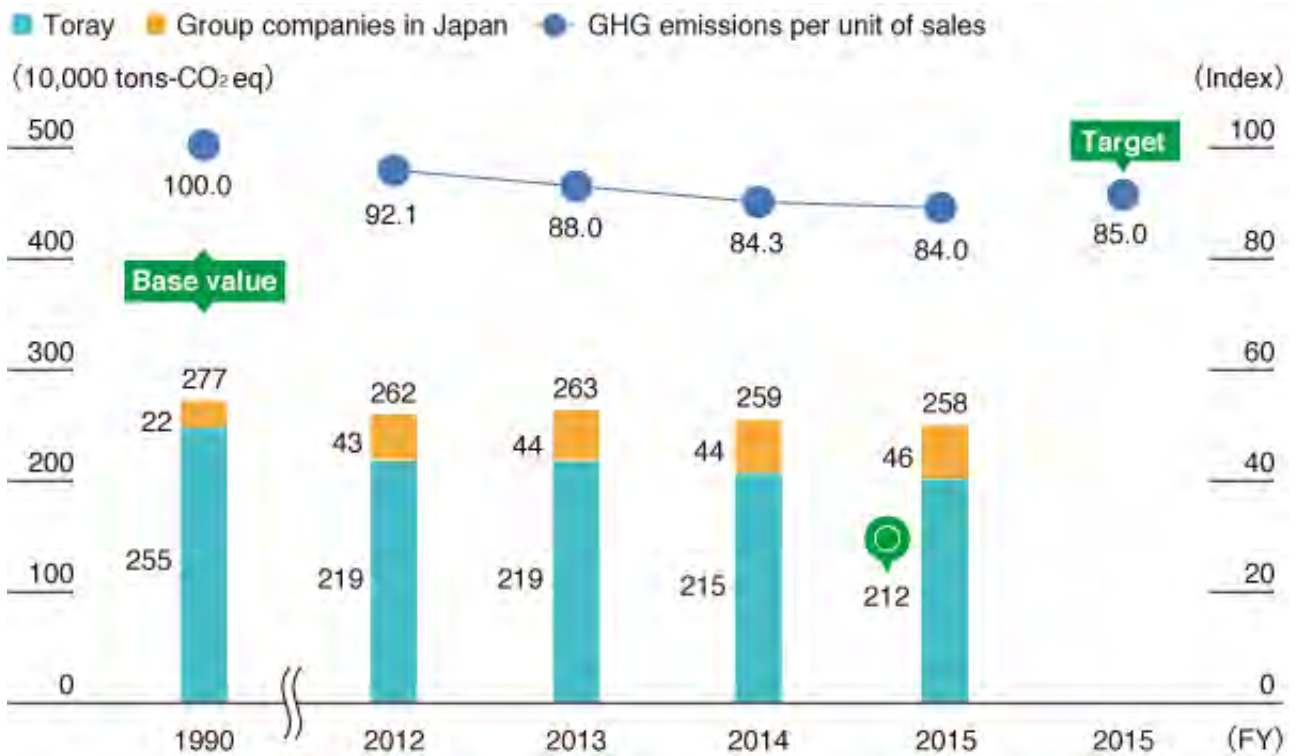
Expanded biomass fuel facilities at Toray's Tokai Plant

### Greenhouse Gas Emissions (Toray Group in Japan)

Toray and its group companies in Japan worked to curb global warming with the goal of reducing emissions by 15% on a per-unit-of-sales basis by fiscal 2015 compared to the fiscal 1990 level.

Greenhouse gas emissions were down 0.4% in fiscal 2015 compared to the previous fiscal year. Greenhouse gas emissions per unit of sales improved by 0.3 points compared to the previous fiscal year and were 16% below the base year.

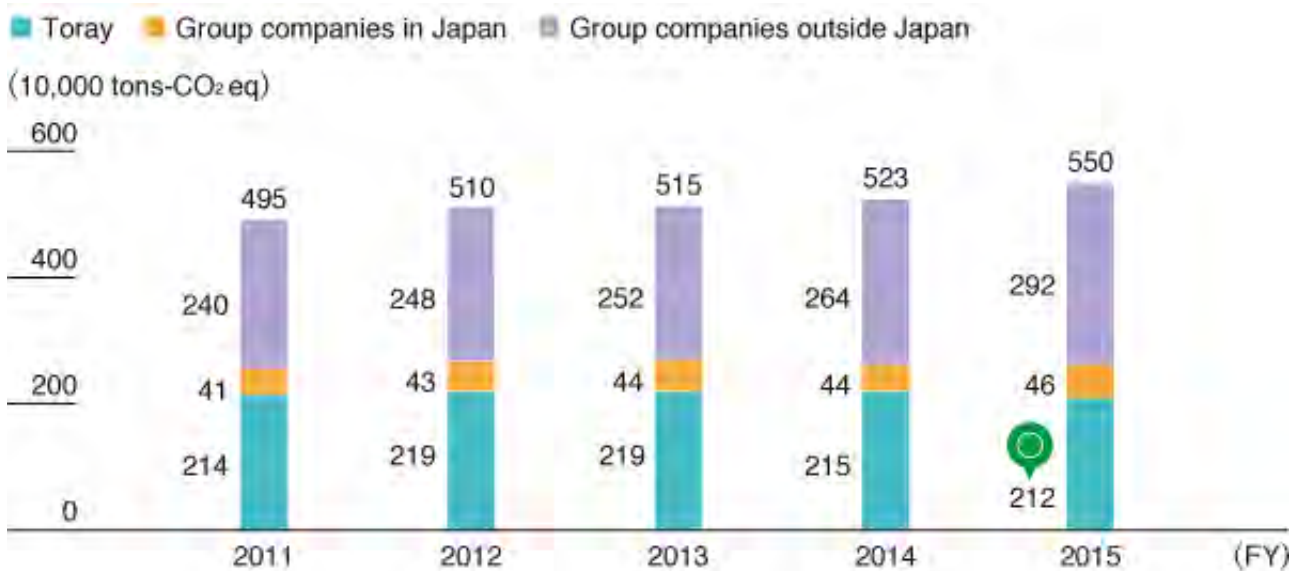
### Greenhouse Gas Emissions and Greenhouse Gas Emissions Per Unit of Sales (Toray Group in Japan)



### Greenhouse Gas Emissions (Toray Group)

Fiscal 2015 greenhouse gas emissions for the Toray Group worldwide were 5.5 million tons-CO<sub>2</sub> equivalent, an increase of 5.2% compared to the previous year. All Toray Group manufacturing companies and plants will continue to work to achieve the Group's goal of reducing the per-unit energy consumption rate by 2% each fiscal year.

### Greenhouse Gas Emissions (Toray Group)



#### Related Information

> [CO<sub>2</sub> Emissions Resulting from Toray's Distribution Activities](#)

## Initiatives to Protect the Ozone Layer

Toray successfully ceased using chlorofluorocarbons (CFCs) in all manufacturing processes in 1994. The Company has also stopped purchasing CFCs for use in refrigeration equipment and will finish upgrading refrigeration equipment that uses CFCs by fiscal 2019.



Copyright © 2017 TORAY INDUSTRIES, INC.

## Voluntary Initiatives to Reduce Atmospheric Emissions of Chemical Substances

> Materiality Focus

As a corporate group that does business in the chemicals sector, the Toray Group places the highest priority on reducing emissions of chemicals into the atmosphere in order to reduce its environmental impact.

Under the Fourth Medium-Term Environmental Plan, which covered fiscal 2011–2015, the Group achieved its targets for reducing atmospheric emissions of volatile organic compounds (VOCs) and substances specified under Japan's Pollutant Release and Transfer Register Law (PRTR Law).

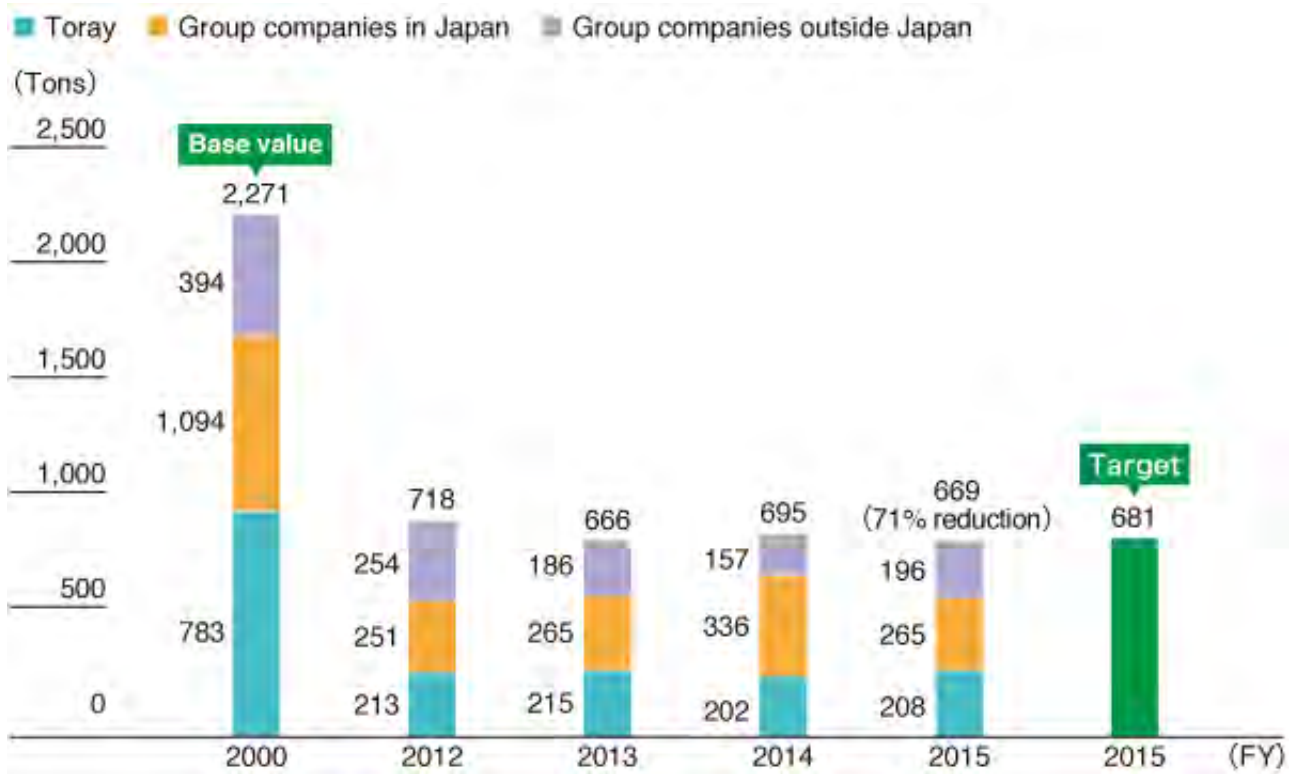
The Group is projecting a further increase in production volumes due to business growth, and will take comprehensive steps to reduce atmospheric emissions in order to achieve its latest reduction targets for fiscal 2020.

### Reducing Atmospheric Emissions of PRTR Law-Specified Substances

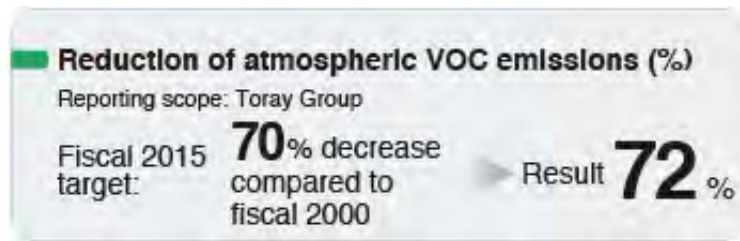
In fiscal 2015, the Toray Group's atmospheric emissions of PRTR Law-specified substances were 669 tons, which represented a 71% reduction compared to the base year of fiscal 2000. The Group achieved the target of a 70% reduction compared with the base year under the Fourth Medium-Term Environmental Plan.

The main improvement in fiscal 2015 was a reduction of two tons of atmospheric emissions of PRTR substances, realized through adsorption and collection of waste gases at Toray's Ehime Plant. Additionally, Toray Battery Separator Film Co., Ltd. realized a 25 ton reduction in atmospheric emissions in fiscal 2015 from the operation of adsorption and collection equipment.

### Atmospheric Emissions of PRTR Law-Specified Substances

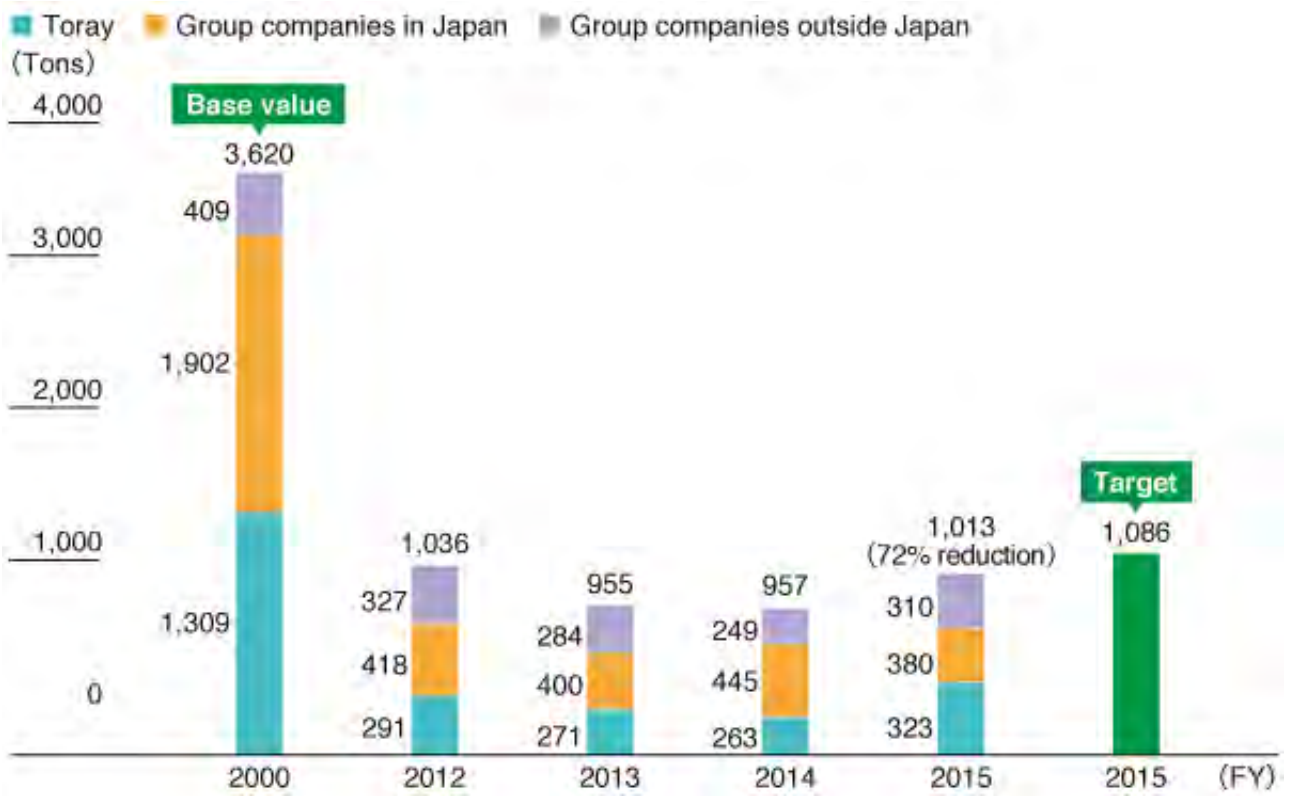


### Reducing Atmospheric Emissions of VOCs



In fiscal 2015, the Toray Group's atmospheric emissions of VOCs were 56 tons, an increase of 6% compared to the previous fiscal year. The emissions were 72% below the base year of fiscal 2000, achieving the fiscal 2015 target of a 70% reduction compared to the base year.

### VOC Atmospheric Emissions



# Toray Group

Copyright © 2017 TORAY INDUSTRIES, INC.



## Initiatives to Prevent Air and Water Pollution

> Materiality Focus

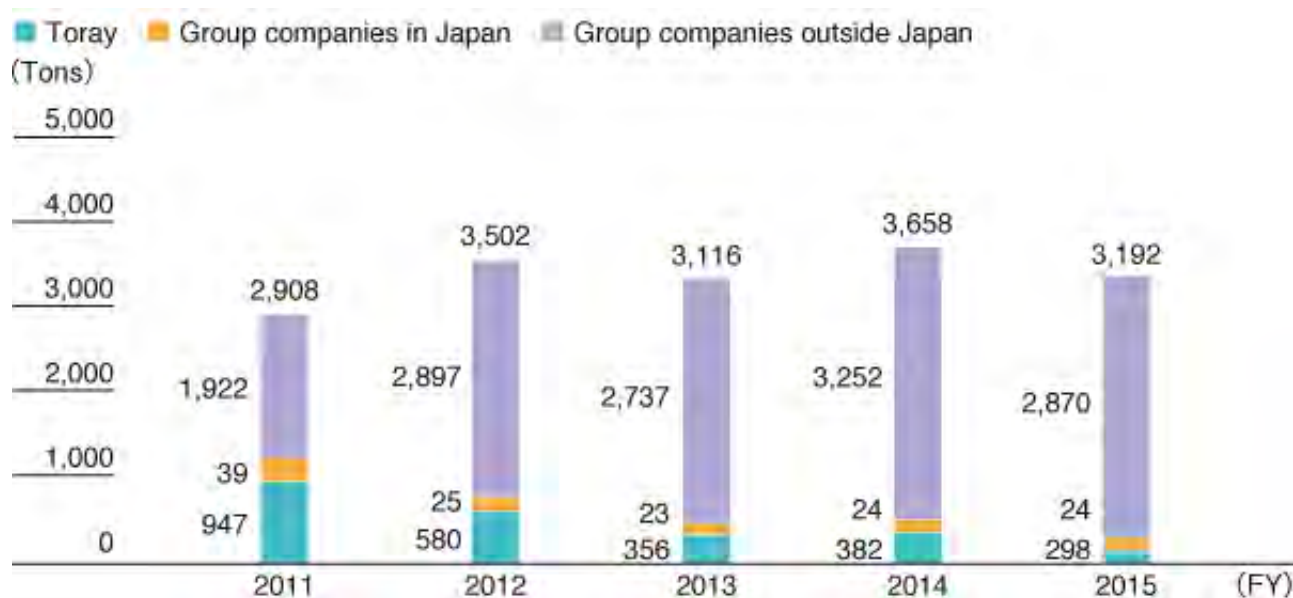
The Toray Group implements ongoing initiatives at production sites to reduce sulfur oxide (SOx) emissions by installing desulfurization equipment and switching to cleaner fuels, and reduce chemical oxygen demand (COD) by expanding wastewater treatment facilities.

### Air Quality Management

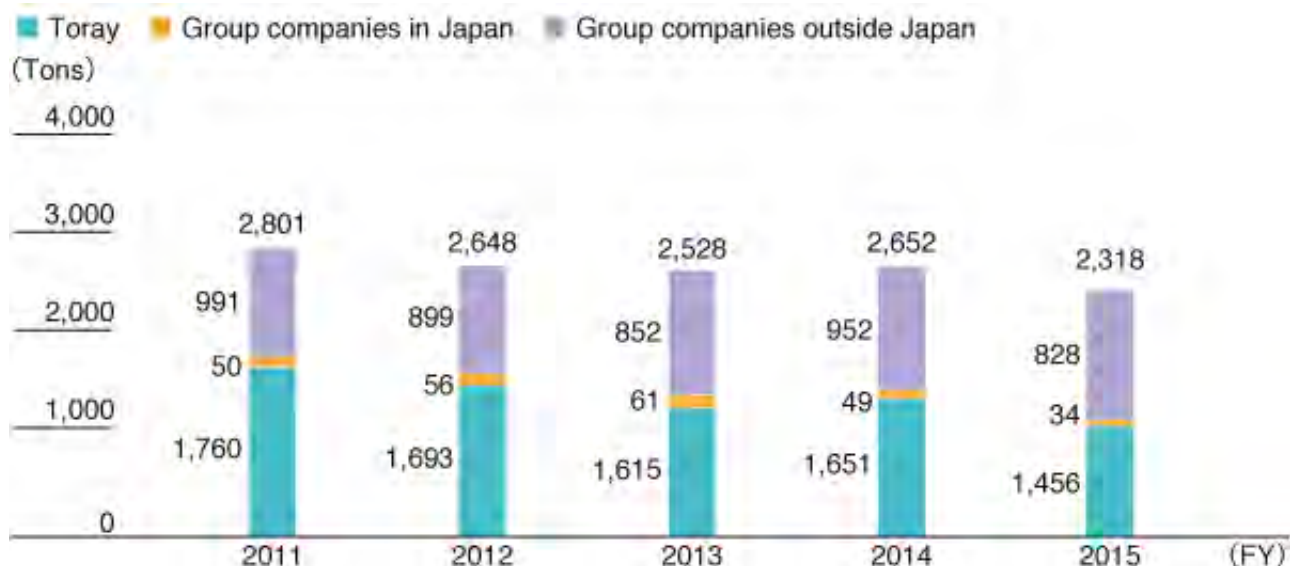
In fiscal 2015, the Toray Group recorded 3,192 tons of SOx emissions (down 13% year-on-year) and 2,318 tons of NOx emissions (down 13% year-on-year). Due to increased production volumes, the Group recorded 331 tons of dust emissions (up 13% year-on-year). On a non-consolidated basis, Toray recorded 298 tons of SOx emissions (down 22% year-on-year) and 1,456 tons of NOx emissions (down 12% year-on-year) due to the factors such as introduction of a cogeneration system at the Mishima Plant. However Toray recorded 108 tons of dust emissions (up 6% year-on-year), due to increased production volumes at the Ehime Plant and other factors.

Group company P.T. Indonesia Synthetic Textile Mills also reduced its SOx emissions by switching to higher quality fuels.

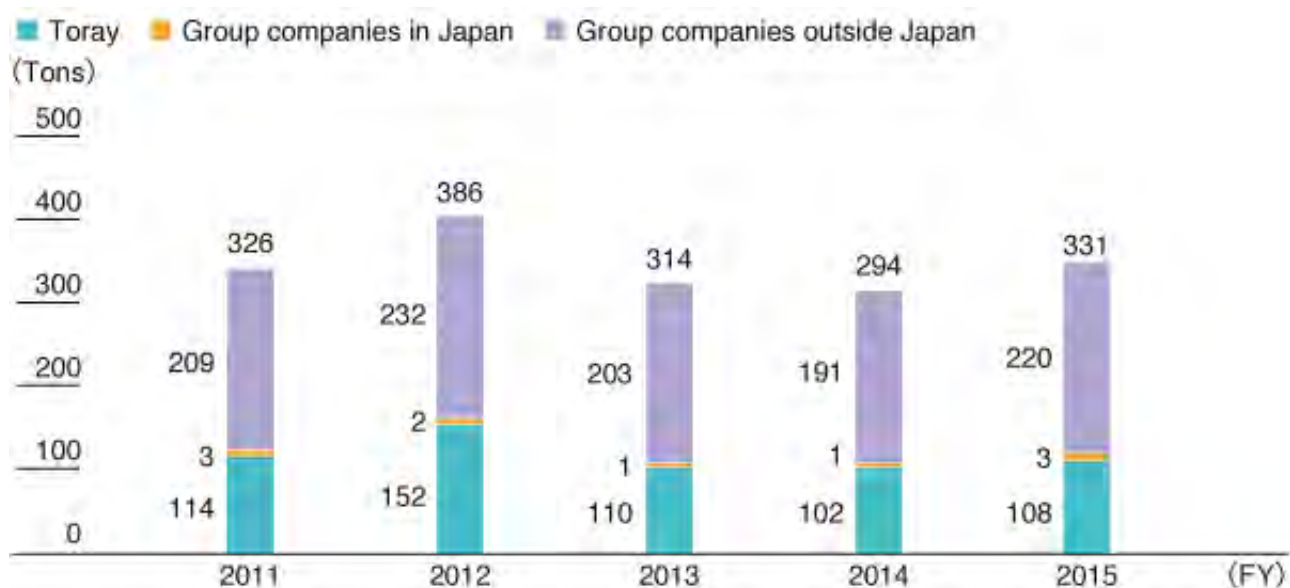
### Atmospheric Emissions (SOx)



### Atmospheric Emissions (NOx)



### Atmospheric Emissions (Dust)



### Water Quality Management

In fiscal 2015, the Toray Group recorded BOD emissions of 973 tons (up 4% year-on-year) and COD emissions of 2,385 tons (down 3% year-on-year). BOD emissions increased due to higher production volumes, while COD emissions decreased due to expanded wastewater treatment.

### Water Emissions (BOD)



### Water Emissions (COD)



In fiscal 2015, the Group expanded its wastewater treatment facilities at the following plants: the Ehime and Tokai Plants of Toray, the Fukui Plant of Dow Corning Toray Co., Ltd., and the No.2 Plant of Luckytex (Thailand) Public Company Limited. These upgrades further stabilized wastewater treatment to realize benefits.

The Group brings together wastewater managers every year to share and discuss strategies for enhancing wastewater management at production sites. The fiscal 2015 meeting was attended by 27 persons from nine Toray plants and five persons from five Group companies in Japan.



Wastewater facility at Luckytex (Thailand) Public Company  
Limited



Toray experts responsible for wastewater meet to share best  
practices



Copyright © 2017 TORAY INDUSTRIES, INC.

# Initiatives for Managing Water Resources

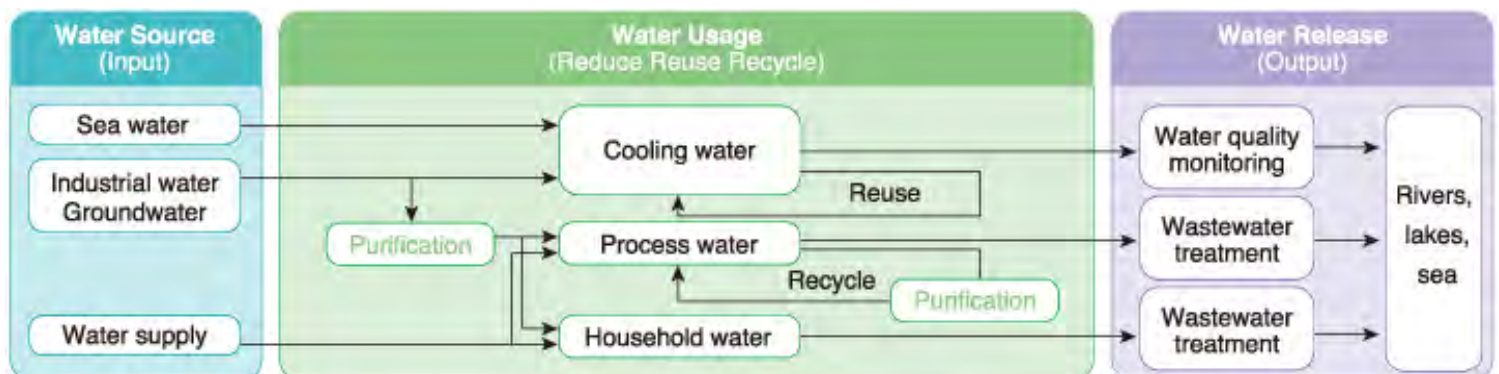
> Materiality Focus

The Toray Group is working to provide solutions to water resources problems around the world, based on the following policies. In its own operations, the Group effectively uses and recycles water and properly manages water resources.

1. The Toray Group recognizes that water is one of the most important resources for humanity, and that people are confronting problems related to water resources in many areas of the world.
2. The Toray Group is committed to helping to solve global water resources problems through its products, technologies and services.
3. The Toray Group continuously monitors the state of regional water resources, and conducts appropriate management of water resources according to the basic principle of sharing precious water resources with the local communities where the Group operates.

The Toray Group practices the 3Rs (reduce, reuse, recycle) in consuming water resources, and monitors the quality of water that is released into public bodies of water.

## Water Resource Management by the Toray Group



### Water Usage

The Toray Group used 222 million tons of water in fiscal 2015, a decrease of 5% from the previous fiscal year. Compared to the amount used per unit of sales in fiscal 2001, set to an index value of 100, usage in fiscal 2015 stood at 56.2 points, down 3.5 points from the previous fiscal year.

### Related Information

> [Environmental Data](#)

### Comparative Water Usage Per Unit of Sales (Toray)

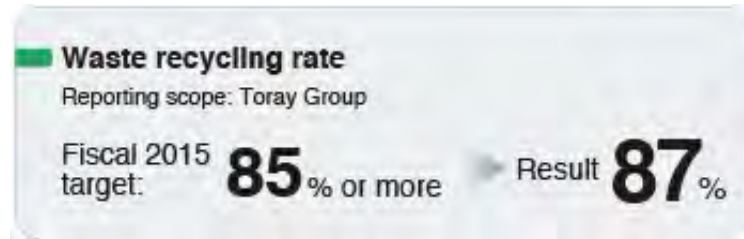
(FY)	2001	2011	2012	2013	2014	2015
Comparative water usage per unit of sales	100	76.7	75.6	66.7	59.7	56.2



Copyright © 2017 TORAY INDUSTRIES, INC.

## Initiatives to Reduce Waste

> Materiality Focus



The Toray Group is carrying out zero emission initiatives as it works toward the realization of a sustainable, recycling-based society. Under the Fourth Medium-Term Environmental Plan, the Group worked to achieve its fiscal 2015 targets for rates of simply disposed waste,<sup>6</sup> landfill waste<sup>7</sup> and recycled waste,<sup>8</sup> which have been set as indicators for measuring progress toward attaining zero emissions.

<sup>6</sup> Simply disposed waste rate = (incineration + landfill) / total waste

<sup>7</sup> Landfill waste rate = landfill waste / total waste

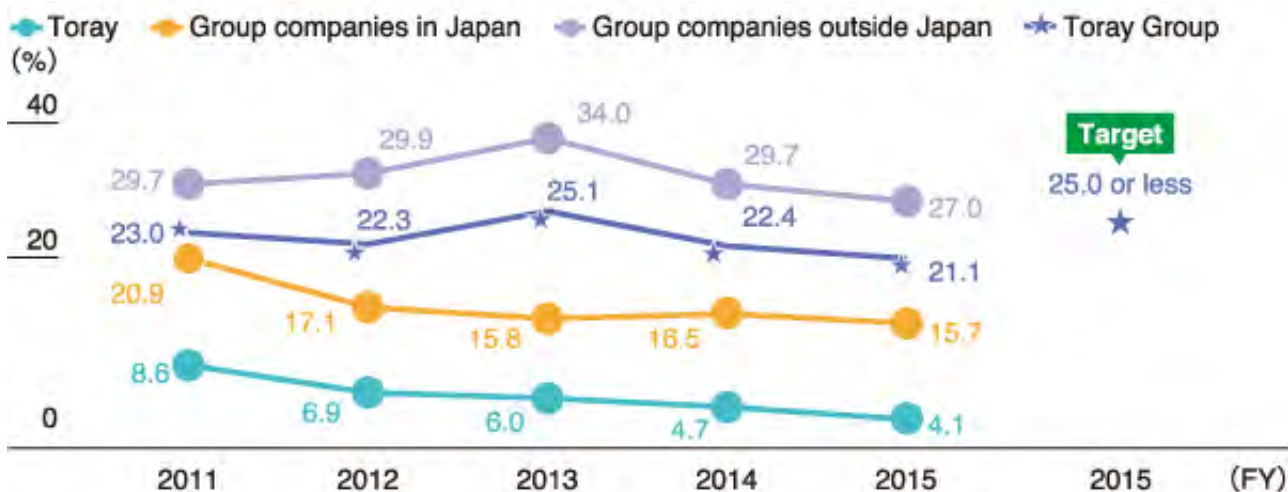
<sup>8</sup> Recycling rate = (recycled resources + resources with monetary worth) / (total waste + resources with monetary worth)

### Results in Fiscal 2015

## Simply Disposed Waste Rate

Each Toray Group company worked on waste reduction and recycling. As a result, the simply disposed waste rate for the Toray Group decreased by 1.3 percentage points year-on-year to 21.1% in fiscal 2015.

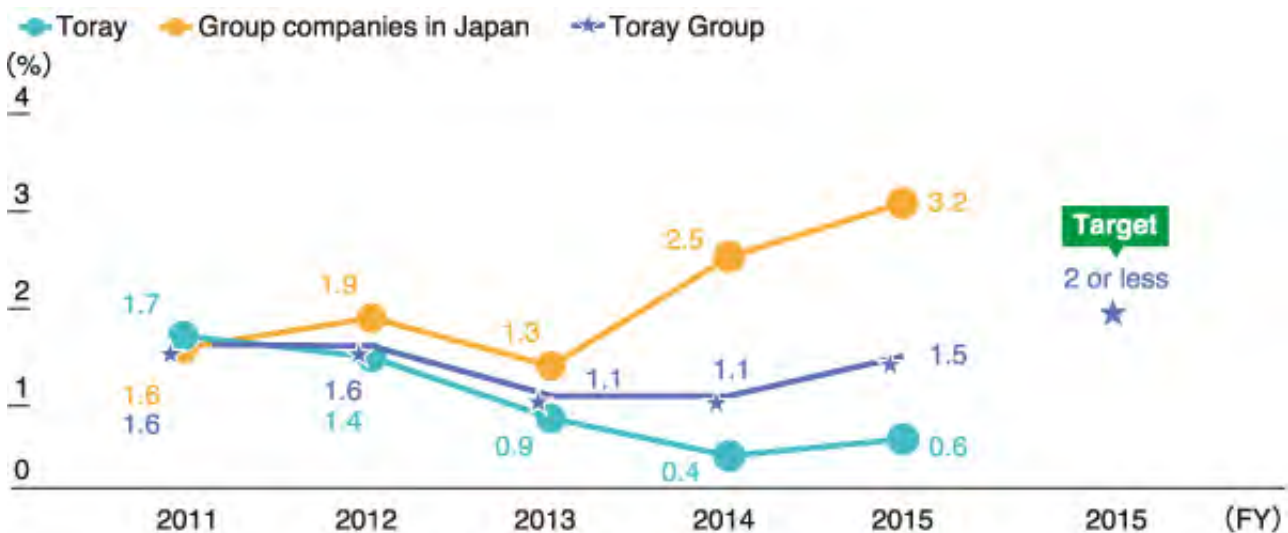
### Simply Disposed Waste Rate (Toray Group)



## Landfill Waste Rate

In fiscal 2015, the rate of landfill waste for the Toray Group increased by 0.4 percentage points to 1.5%, primarily due to the disposal of inventory that became necessary when a warehouse operated by a group company in Japan was damaged.

Landfill Waste Rate (Toray and Its Group Companies in Japan)

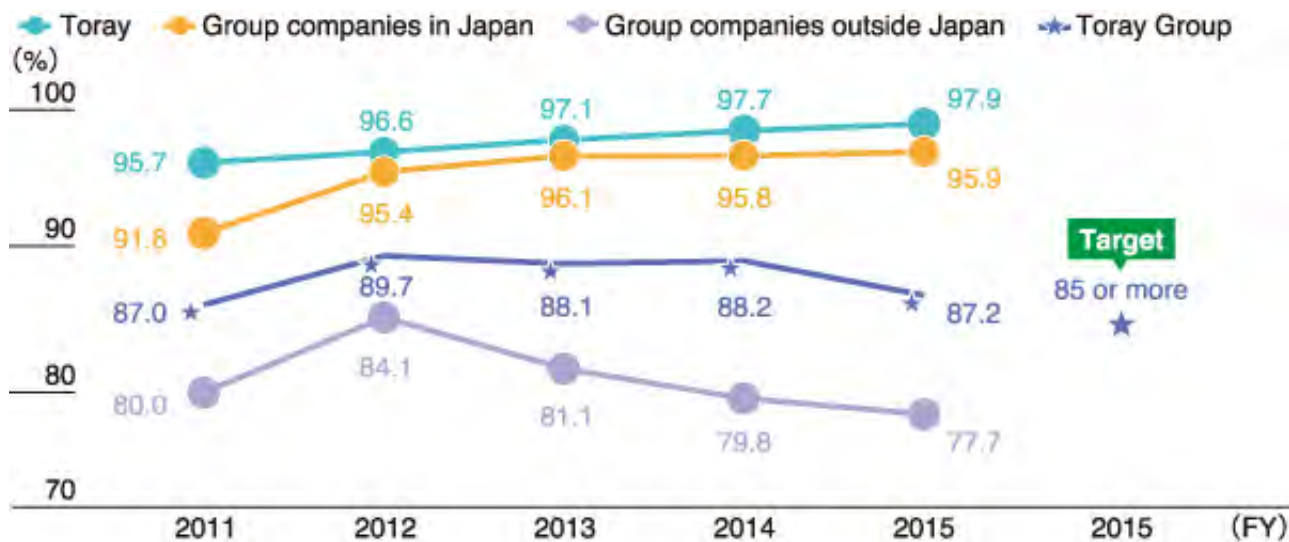


## Recycling Rate

In fiscal 2015, the recycling rate for the Toray Group decreased by one percentage point to 87.2%. The recycling rate increased slightly at group companies in Japan, but recycling of valuables decreased at Group companies outside Japan.

Recycling Rate (Toray Group)





## Zero Emissions Initiatives at Companies and Plants

The Toray Group considers a plant to have achieved zero emissions when the amount of simply disposed waste accounts for 1% or less of the total waste it generates. The Group surpassed its fiscal 2015 target of achieving zero emissions at 30 or more plants, with 40 plants at 22 companies achieving zero emissions. Six plants newly achieved zero emissions, but three plants that achieved it the previous year did not.

### Companies and Plants with Zero Emissions Status in Fiscal 2015

Toray	Shiga Plant, Seta Plant, Ehime Plant, Aichi Plant, Okazaki Plant, Mishima Plant, Chiba Plant, Tsuchiura Plant, Gifu Plant, Ishikawa Plant
Group companies in Japan	Ogaki Fuso Spinning Co., Ltd. [Fuso], Toray Coatex Co., Ltd., Maruichi Fiber Co., Ltd., Toray Monofilament Co., Ltd., Toray Hybrid Cord, Inc., Toray Engineering Co., Ltd. [Shiga, Seta], Toray Precision Co., Ltd., Toray Opelontex Co., Ltd., Du Pont-Toray Co., Ltd., , Toyo Plastic Seiko Co., Ltd. [Mishima, Okazaki], <b>Toray PEF Products Inc.</b> , Toray Advanced Film Co., Ltd. [Nakatsugawa, Mishima, Takatsuki, Fukushima], Toray Fine Chemicals Co., Ltd. [Moriyama, <b>Matsuyama</b> ], <b>Toray Medical Co., Ltd.</b>
Group companies outside Japan	Toray Plastics (America), Inc. [Virginia, Rhode Island], <b>P.T. Easterntex</b> , <b>Penfibre Sdn. Berhad</b> , Toray Jifa (Qingdao) Textile Co., Ltd., Toray Plastics (Shenzhen) Ltd., Toray Chemical Korea Inc. [ <b>Gumi 2</b> , Anseong, <b>Yugu</b> ]

\* Names in **green** indicate companies and plants that achieved zero emissions in fiscal 2015 for the first time.

\* Information in brackets refers to the names of the plants.

## Pursuing Diverse Initiatives to Reduce Environmental Impact

The Ehime Plant of Toray Industries develops and manufactures carbon fiber composites that are used in aircraft structural components, water treatment equipment, polyester, acrylic, and nylon fibers, and high-performance resins. We place the highest priority on safety, accident prevention, and environmental conservation, and pursue initiatives to reduce the environmental impact of our operations and take preventative measures.

The Toraylon section that I work in oversees the production of acrylic fibers as well as directing the operational management of wastewater treatment processes. My job is to improve wastewater treatment processes. In fiscal 2015, we successfully developed and installed a device that propagates and continuously adds the water purifying AI-1 enzyme manufactured by Group company Toyo Shokusan Inc., and the Mitagen enzyme (a type of *natto* enzyme), to enhance biological treatment and realize a consistent environment for wastewater treatment. We also conduct wastewater training and drills for plant employees, to further increase environmental awareness throughout the plant. Furthermore, we successfully implemented an upgrade to improve the emergency collection system in case of an irregularity, as part of our ongoing efforts to realize environmental improvements.



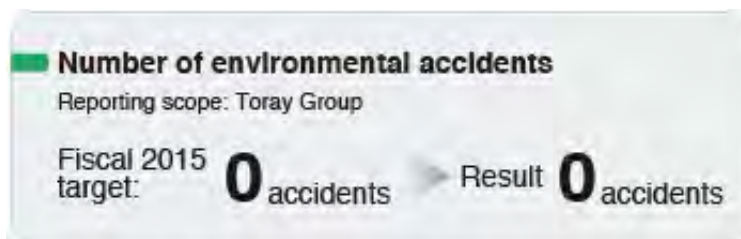
**Kazuho Ninomiya**

Fibers & Textiles Manufacturing  
Department, Ehime Plant, Toray  
Industries, Inc.



Copyright © 2017 TORAY INDUSTRIES, INC.

## Environmental Risk Management



### Incidents Involving Environmental Disasters, Legal Compliance, and Worksite Accidents in Fiscal 2015

Toray Group companies and plants recorded no regulatory violations in fiscal 2015.

However, the Group recorded one accident involving a fire (see “Toray Group Safety Record”), which was immediately addressed by implementing preventative measures. The Group received 12 complaints and requests from residents near its facilities concerning noise and odor, which were seriously examined and addressed by implementing improvements.

#### Environmental Incidents in Fiscal 2015 (Toray Group)

Administrative disposition due to violations of laws or ordinances <sup>9</sup>	0
Accidents (fires, explosions, environmental accidents, etc.)	1
Slight but temporary exceeding of standard values <sup>10</sup>	0
Complaints/requests (noise, odor, etc.)	12

<sup>9</sup> Includes improvement orders and fines. Improvement guidance and recommendations are included in accident figures.

<sup>10</sup> No improvement guidance or recommendations were received from authorities, as there was no harm to the environment.

### Preventing Soil and Groundwater Pollution

The Toray Group constructs protective embankments around its facilities and storage tanks for hazardous chemicals, and takes precautions to ensure that none of these dangerous substances leak or discharge into the surrounding area or contaminate the soil onsite. In fiscal 2015, remediation using wells to clean up groundwater pollution continued at Toray Monofilament Co., Ltd., and remediation to address soil pollution continued at Toray’s Nagoya Plant.

In addition to these ongoing remediation efforts, the Toray Group voluntarily implements regular surveys to monitor soil and groundwater pollution. Should any pollution be identified through these surveys, rules are in place to ensure that immediate action is taken to remediate the pollution.



Copyright © 2017 TORAY INDUSTRIES, INC.

## Environmental Accounting

Toray has been practicing environmental accounting since 1999, to track investments and gauge their cost effectiveness.

### Fiscal 2015 Environmental Accounting Report (Toray)

In fiscal 2015, Toray's environment-related investment amounted to 2.70 billion yen, a 0.46 billion yen increase compared to the previous year. Cost totaled 6.56 billion yen, a decrease of 0.52 billion yen compared to the previous year.

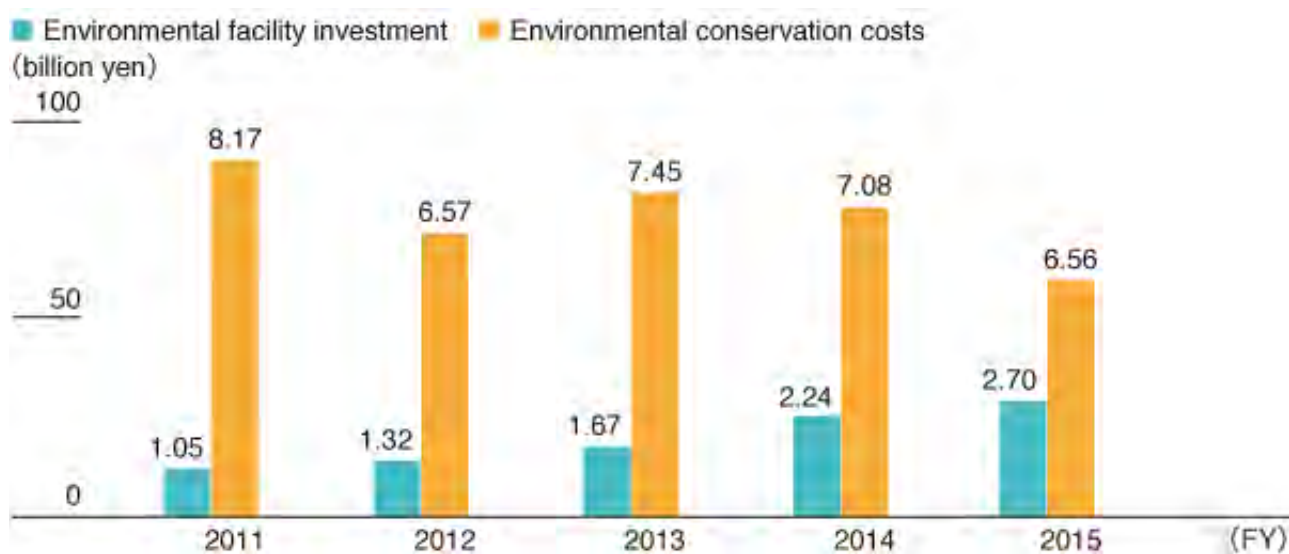
#### Fiscal 2015 Environmental Accounting Report (Toray)

Expenses				
Item		Subcategory and description	Investment (million yen)	Cost (million yen)
Business area costs	Pollution prevention costs	Air (including CFC countermeasures)	364	2,046
		Water quality	1,190	2,118
		Noise and vibration	2	2
		Greening	5	277
		Odors and other	217	194
	Global environment conservation costs	Energy conservation and combating global warming	838	-
	Resource recycling costs	Industrial waste reduction, recycling, disposal, and PCB waste disposal services	59	1,331
Upstream and downstream costs		Product recycling	20	5
		Container and package recycling	0	1

Management activity costs	Indirect labor costs, ISO certification and maintenance, environmental communications, and education	0	335
Social initiative costs	Regional initiatives, support for organizations, etc.	0	46
Environmental remediation costs	SOx fines, soil purification, etc.	0	202
Total		2,695	6,557

Effectiveness		
Item		Amount (million yen)
Financial effects	Reduction in energy costs	565
	Reduction in industrial waste disposal costs	25
	Sale of valuable recycled resources with monetary value	686
Quantitative environmental effects	Reduction of greenhouse gas emissions	12,500 tons-CO <sub>2</sub> eq

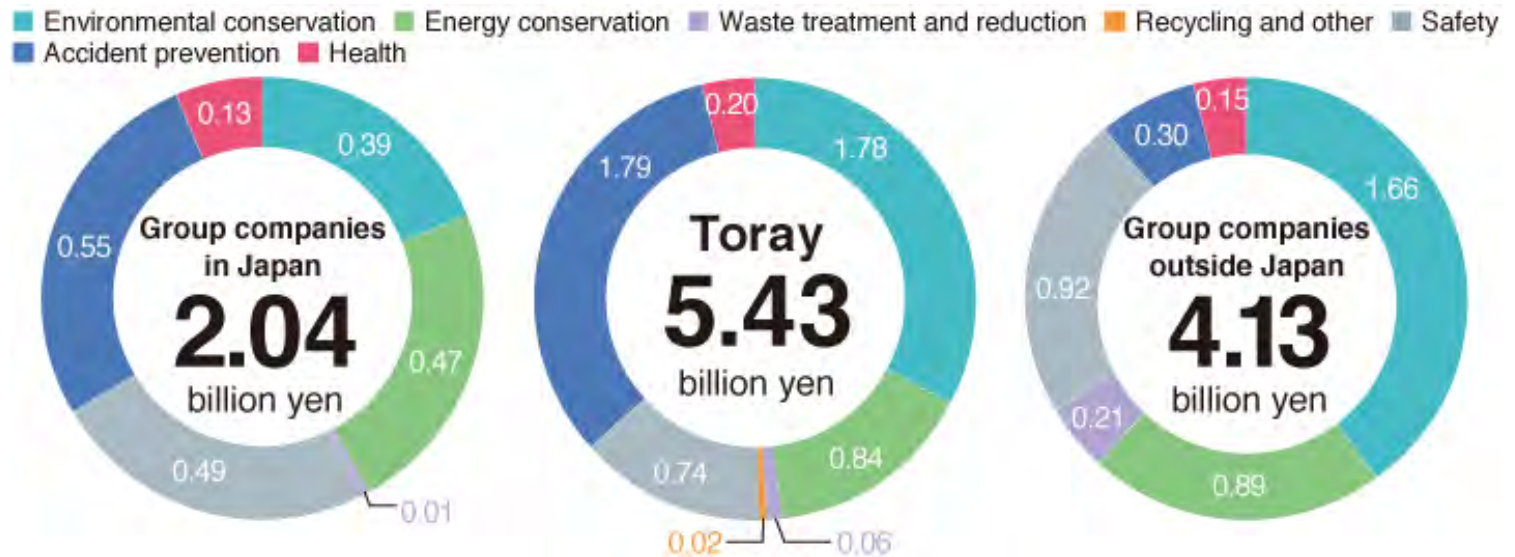
### Environmental Facility Investment and Environmental Conservation Costs (Toray)



### Facility Investment in Safety, Health, Accident Prevention, and Environmental Preservation Projects (Toray Group)

The Toray Group reports on its investments relating to safety, accident prevention, and health. In the area of safety, Toray continued to make investments including equipment security upgrades and disaster prevention projects such as seismic reinforcement of buildings. Environmental investments included the installation of emergency pits to prevent an accidental outflow of irregular wastewater and expansion of wastewater treatment facilities at the No.2 Plant of Luckytex (Thailand) Public Company Limited.

### Fiscal 2015 Facility Investment in Safety, Health, Accident Prevention, and Environmental Preservation Projects (Toray Group)



#### Toray Environmental Accounting Standards

- Some categories were changed based on the Ministry of the Environment's Guidelines for FY2005.
- Only economic effects that can be determined with a high degree of certainty are included in the calculation. Presumed effects are not included.
- 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.
- 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 as 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.
- Effects of reducing greenhouse gas emissions are measured over a 12-month period following the completion of measures or facilities to conserve energy.





# Biodiversity Initiatives

> Materiality Focus

The Toray Group views conservation of biodiversity as a critical global environmental issue that is of equal importance to reducing greenhouse gas emissions. The Group analyzes the impact of its business activities on biodiversity and strives to help build a more sustainable world.

## Working Group Considers Initiatives for Biodiversity

The Toray Group pursues biodiversity initiatives under a three-year action road map and prioritized measures under the Toray Group Biodiversity Basic Policy. In fiscal 2015, the final year of the second road map focused on conservation of green space from fiscal 2013 to 2015, the Group followed up on three years of progress.

### **Biodiversity Initiatives** Adopted December 2010

#### **Basic Concept**

Toray Group appreciates the gifts of nature that biodiversity provides, and strives to realize the conservation and sustainable use of biodiversity. The Group contributes to society through the development and dissemination of products and technologies which advance conservation of biodiversity.

#### **Action Guidelines**

1. We take into consideration the impact of our business activities on biodiversity, and strive to realize the conservation and sustainable use of biodiversity.
2. We endeavor to develop environmentally friendly technologies and products, and contribute to the conservation of biodiversity by making them available for use.
3. We practice fair use of genetic resources on the basis of relevant international agreements.
4. We recognize the influence of biodiversity within the supply chain, and pursue coexistence with nature.
5. We strive to raise employee awareness on biodiversity, and contribute to the building of a society that nurtures biodiversity through our communication with stakeholders.

Note: Toray Group respects Nippon Keidanren's Declaration of Biodiversity (Guide to Action Policies) and the Japanese Ministry of the Environment's Guidelines for Private Sector Engagement in Biodiversity. The Group is a promotion partner of Nippon Keidanren's Declaration of Biodiversity.

## Main Initiatives in Fiscal 2015

### Procuring Raw Materials

The Toray Group conducted a survey of all products to determine the usage of bio-based raw materials in product manufacturing. The Group also studied approaches to confirming impacts on biodiversity.

### Social Initiatives

The Toray Group also endeavors to conserve biodiversity with its social initiatives. In fiscal 2015, employees and families of Toray Group companies in the Tokyo area took part in the Third Arakawa Clean Aid events. The participants listened to speakers from the non-profit Arakawa Clean Aid Forum about biodiversity and environmental conservation, then collected refuse while recording the type and quantity of refuse.



Participants listen to a lecture.



After the lecture, participants clean up along the Arakawa River.

### Increasing Green Areas



Plants at Toray and its group companies in Japan operate greenery policies and plans through 2020, guided by the Toray Group Basic Policy for Increasing Green Areas.<sup>11</sup> The plans encompass initiatives to conserve green areas, including natural forests<sup>12</sup> that have been protected since the plants began operating. Sustainable greenery conservation initiatives also help to conserve the environment for communities.



Forested area of Toray's Aichi Plant, which is located in a residential community

<sup>11</sup> Toray Group Basic Policy on Increasing Green Areas was established in 2012, evolving out of greenery policies that were first established in 1973.

<sup>12</sup> Natural groves or forestation by species based on potential native vegetation

### Toray Group's Basic Policy for Increasing Green Areas Established June 2012

- A. Toray Group contributes to the preservation of the natural environment by promoting tree planting using planting methods suitable for the biodiversity of local habitats.
- B. Toray Group aims to surround its production plants with greenery by giving priority to tree planting in areas at the boundaries of factory sites.
- C. Toray Group sets goals for making each of its production plants greener while considering how to attain harmony with the surrounding environment as well as regulations concerning green space ratios in each respective country or region.

#### VOICE Message from a Research Manager

##### Diverse Support for Conservation Efforts at Lake Biwa

Lake Biwa has been designated as a UNESCO Ramsar Wetland, and, as the largest freshwater lake in Japan, it is both rich in biodiversity and supports the lives and industrial activities of people in the Kansai region. In the 1970s, Japan experienced a major outbreak of freshwater red tide that led to the implementation of proactive measures to conserve water quality. However, because there are diverse and complex factors at play,



the impact and incidences of red tide will continue long term. Toray's Shiga Plant and Seta Plant use industrial water supplied from Lake Biwa. To contribute to the long-term health of the lake, Toray Techno Co., Ltd. is working on several fronts to assist various government strategies to address issues affecting Lake Biwa. The Mother Lake 21 Plan (Lake Biwa Comprehensive Preservation and Improvement Project) is mobilizing governments and residents to realize strategies for people to coexist harmoniously with Lake Biwa while capitalizing on regional culture and commercial activities, to protect water quality and restore the lagoons of Lake Biwa that are important biological habitats. Under the plan, Toray Techno is also supporting diverse surveys and research to identify the causes of high COD levels in Lake Biwa, which exceed allowable concentrations.

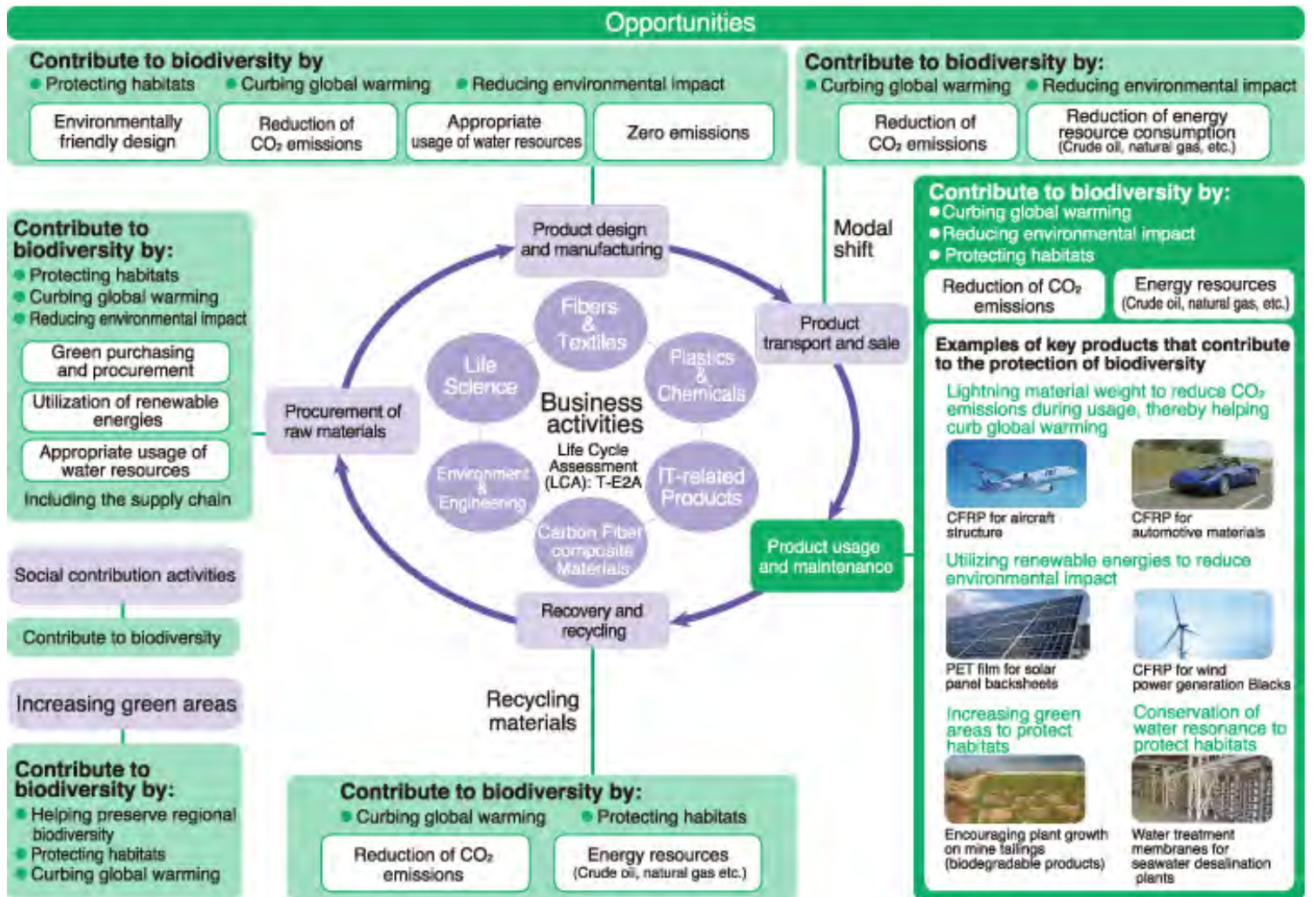
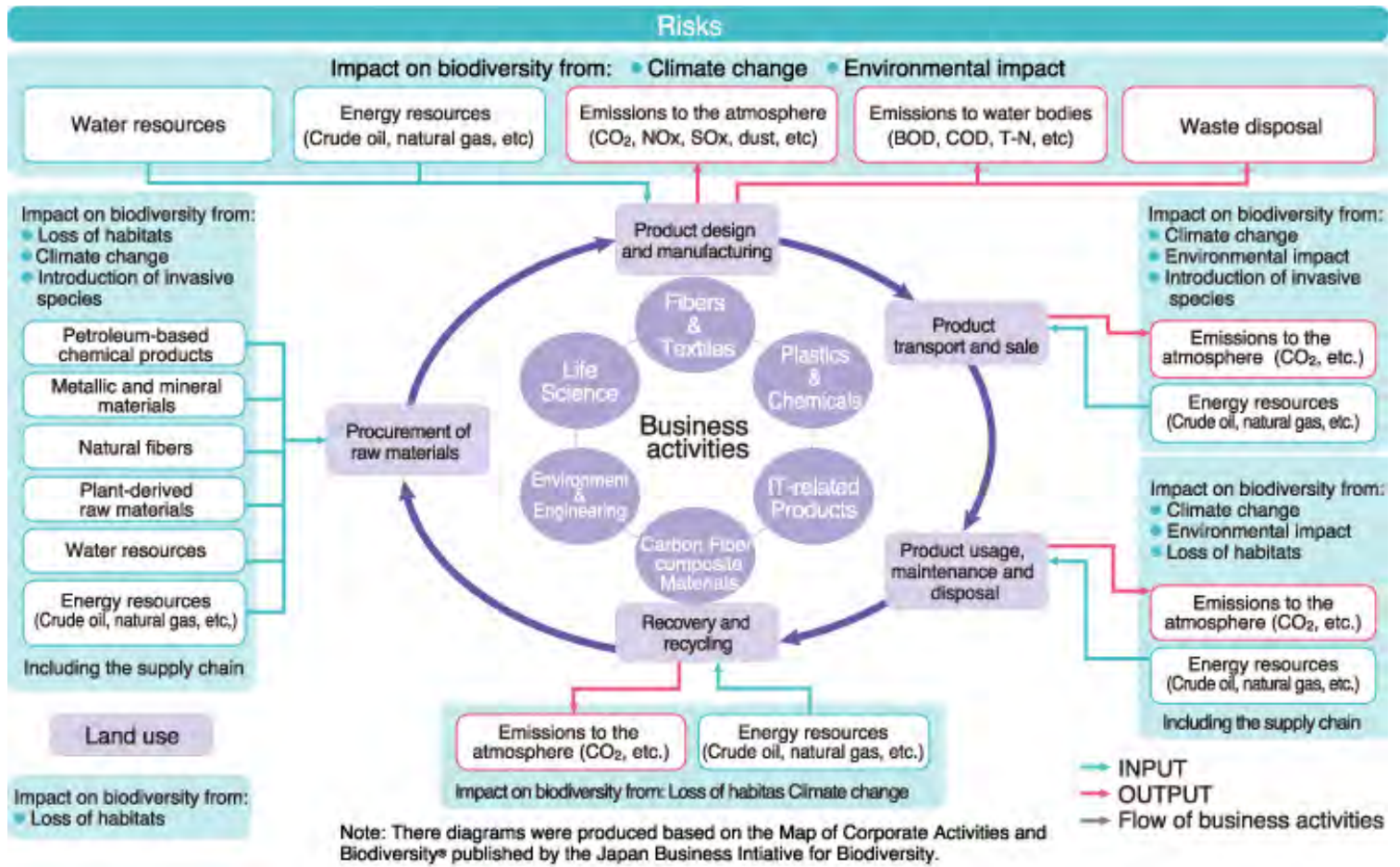
**Naoko Takei**  
Manager, Environmental  
Technology Research Office,  
Environmental Science and  
Technology Department, Toray  
Techno Co., Ltd.



Positioning data collection equipment for the Lake Biwa watershed

## Toray Group's Approach to the Relationship between Corporate Activities and Biodiversity

Starting from the procurement of raw materials, the entire lifecycle of the Toray Group's business activities has a wide range of effects on biodiversity. The two diagrams below conceptualize the relationship between the Group's business activities and biodiversity in terms of the two aspects of risks and opportunities.





# Environmental Data

## Environmental Impact Overview Fiscal 2015

	Toray			Group companies in Japan			Group companies outside Japan		
	FY2014	FY2015	Compared to previous year (%)	FY2014	FY2015	Compared to previous year (%)	FY2014	FY2015	Compared to previous year (%)
<b>INPUT</b>									
Energy (1,000,000 gigajoules)	29.5	29.0	-1.7	6.9	7.2	4.3	43.3	46.8	8.1
Water (1,000,000 tons)	179	171	-4.5	14	12	-14.3	41	38	-7.3
<b>OUTPUT</b>									
<b>GHG (10,000 tons CO<sub>2</sub>eq)</b>									
6 gases including CO <sub>2</sub>	215	212	-1.4	44	46	4.5	264	292	10.6
<b>PRTR Law-specified substances (tons)</b>									
Atmospheric emissions	202	210	4.0	336	265	-21.1	157	197	25.5
Water emissions	25	30	20.0	0	0	0.0	0	0	0.0
Waste transfers	906	1,556	71.7	1,356	1,340	-1.2	1,384	1,270	-8.2
<b>Air pollutants (tons)</b>									
SOx	382	298	-22.0	24	24	0.0	3,252	2,870	-11.7
NOx	1651	1,456	-11.8	49	43	-12.2	952	828	-13.0
Dust	102	108	5.9	1	3	200.0	191	220	15.2
<b>Industrial wastewater (1,000,000 tons)</b>									
	176	167	-5.1	10	10	0.0	23	24	4.3
<b>Water pollutants (tons)</b>									
BOD	715	713	-0.3	23	25	8.7	197	236	19.8
COD	827	812	-1.8	31	42	35.5	1,604	1,621	1.1
Nitrogen	460	437	-5.0	14	18	28.6	-	-	-
Phosphorus	27	28	3.7	1	1	0.0	-	-	-
<b>Waste (1,000 tons)</b>									
Recycled	29.3	30.5	4.1	13.5	14.2	5.2	61.2	79.0	29.1
Incinerated and other	1.3	1.1	-15.4	2.3	2.1	-8.7	10.4	9.7	-6.7
Direct landfill disposal	0.1	0.2	100.0	0.4	0.5	25.0	15.5	19.5	25.8
<b>Coal ash (1,000 tons)</b>									
Recycled	62.8	63.9	1.8	-	-	-	27.6	26.7	-3.3
Direct landfill disposal	3.7	2.3	-37.8	-	-	-	0.5	0.7	40.0

Note: Toray greenhouse gas emissions marked ● have obtained a third-party guarantee from Lloyd's Register Quality Assurance Limited (LRQA).

#### Index of Environmental Impact Per Unit of Sales

	Toray and its group companies in Japan			Group companies outside Japan			Total		
	FY2014	FY2015	Year-on-year comparison (points)	FY2014	FY2015	Year-on-year comparison (points)	FY2014	FY2015	Year-on-year comparison (points)
GHG emissions	68.4	67.9	-0.5	57.8	63.2	5.4	69.2	72.3	3.1
PRTR atmospheric emissions	35.1	31.0	-4.2	12.5	15.5	3.0	25.4	24.4	-1.0
SOx emissions	6.6	5.2	-1.4	17.7	15.4	-2.3	20.1	17.4	-2.7
Water usage volume	75.3	71.5	-3.8	46.1	42.6	-3.5	59.7	56.2	-3.4
BOD emissions	44.4	44.3	-0.1	16.8	19.8	3.1	32.6	33.8	1.1
Landfilled waste volume	9.9	13.6	3.7	34.7	43.1	8.4	51.2	64.3	13.0

Note: The amounts per unit of sales shown in the table are referenced to an index value of 100 set for the base year of fiscal 2001.

#### Aggregate Environmental Impact Data by Company Type and Location

	Toray	Group companies in Japan	Group companies outside Japan
GHG	All 12 plants and 1 research laboratory	51 plants at 26 companies	54 plants at 42 companies
PRTR Law-specified substances	All 12 plants and 1 research laboratory	50 plants at 26 companies	54 plants at 42 companies
SOx, NOx, dust	All 12 plants and 1 research laboratory	39 plants at 22 companies	54 plants at 42 companies
BOD	All 12 plants and 1 research laboratory	39 plants at 22 companies	26 plants at 18 companies
COD <sup>1</sup>	10 plants and 1 research laboratory (including 6 plants subject to Total Water Pollutant Load Control)	39 plants at 22 companies (including 7 plants at 7 companies subject to Total Water Pollutant Load Control)	26 plants at 18 companies
Nitrogen and phosphorus	All 12 plants and 1 research laboratory	39 plants at 22 companies	-
Waste	All 12 plants and 1 research laboratory	50 plants at 26 companies	54 plants at 42 companies

<sup>1</sup> COD figures for Toray, group companies in Japan and Korea are given in COD<sub>mn</sub> (using the potassium permanganate method).

Other group companies outside Japan are given in COD<sub>Cr</sub> (using the potassium dichromate method).





# Chemical Substance Emissions and Transfer Data

## Chemical Substance Emissions and Transfer Data

### PRTR Law-Specified Substance<sup>2</sup> Emissions and Transfer Data for Fiscal 2015

<sup>2</sup> Chemical substances were designated as type 1 according to the PRTR Law revision in April 2010

Toray	Tons (dioxins: mg-TEQ)			
	Atmospheric emissions	Water emissions	Soil emissions/ company landfill	Waste transfers
Methyl acrylate	0.3	0.3	0.0	0.0
Acrylonitrile	32.3	3.1	0.0	336.5
Acetaldehyde	2.8	0.0	0.0	0.0
Antimony and antimony compounds	0.0	0.0	0.0	0.4
Asbestos	0.0	0.0	0.0	4.2
Ethylbenzene	3.3	0.0	0.0	0.0
ε-Caprolactam	0.0	12.4	0.0	0.1
Xylene	10.5	0.0	0.0	0.0
Chlorobenzene	0.2	0.0	0.0	8.1
Chloroform	3.5	0.0	0.0	14.5
Cobalt and cobalt compounds	0.0	0.0	0.0	9.0
2-Methoxyethyl acetate	0.0	0.0	0.0	158.9
4,4'-diaminodiphenyl ether	0.0	0.0	0.0	0.1
Inorganic cyanide	42.8	0.0	0.0	0.0
1,4-Dioxane	0.1	6.8	0.0	0.0
2,4-Dichlorotoluene	0.9	0.0	0.0	0.1
Diuron	0.0	0.0	0.0	0.3
p-Dichlorobenzene	6.1	0.0	0.0	1.7
Dichloromethane	3.3	0.0	0.0	4.8
Diphenyl ether	0.0	0.0	0.0	1.3
N, N-dimethylacetamide	7.1	0.0	0.0	529.2
N, N-dimethylformamide	17.8	0.7	0.0	238.8
Styrene	12.6	0.0	0.0	1.6
Terephthalic acid	0.0	0.0	0.0	23.0
Trichloroethylene	0.4	0.1	0.0	0.4
Toluene	7.3	0.0	0.0	52.2
Nitrobenzene	0.0	0.0	0.0	35.0
Hydrazine	0.0	0.1	0.0	0.0
Pyridine	0.0	0.0	0.0	1.0
O-, m- and p-Phenylenediamine	0.0	2.9	0.0	0.0
Phenol	0.0	2.6	0.0	0.2
Bromomethane	50.5	0.0	0.0	0.0
n-hexane	0.0	0.0	0.0	22.6
Benzene	0.8	0.7	0.0	0.0
Polychlorinated biphenyl	0.0	0.0	0.0	0.1

Group companies in Japan	Tons (dioxins: mg-TEQ)			
	Atmospheric emissions	Water emissions	Soil emissions/ company landfill	Waste transfers
n-butyl acrylate	0.0	0.0	0.0	0.2
Acetonitrile	0.1	0.0	0.0	7.6
1-Allyloxy-2,3-epoxy propane	0.0	0.0	0.0	4.6
Ethylbenzene	9.8	0.0	0.0	26.1
Ethylene oxide	1.6	0.0	0.0	0.0
Ethylene glycol monoethyl ether	0.5	0.0	0.0	0.5
Epichlorohydrin	0.0	0.0	0.0	1.0
Ferric chloride	0.0	0.0	0.0	0.5
Xylene	8.4	0.0	0.0	19.9
1-chloro-2,4-dinitrobenzene	0.0	0.0	0.0	0.5
Ethylene glycol monoethyl ether acetate	0.0	0.0	0.0	0.2
Dichloromethane	171.7	0.0	0.0	21.9
N, N-dimethylacetamide	19.4	0.0	0.0	299.6
N, N-dimethylformamide	13.3	0.0	0.0	196.5
Styrene	0.0	0.0	0.0	0.4
Decabromodiphenyl ether	0.0	0.0	0.0	0.1
Triethylamine	0.2	0.0	0.0	0.0
Toluene	36.9	0.0	0.0	602.4
Carbon disulfide	0.3	0.1	0.0	0.0
Hydroquinone	0.0	0.0	0.0	0.8
Bis (2-ethylhexyl) phthalate	0.0	0.0	0.0	24.9
n-hexane	1.3	0.0	0.0	39.4
Poly (oxyethylene) alkyl ether	0.0	0.0	0.0	45.4
Formaldehyde	0.2	0.0	0.0	0.1
Maleic anhydride	0.0	0.0	0.0	6.1
Methacrylate acid	0.0	0.0	0.0	4.1
Methyl methacrylate	0.2	0.0	0.0	0.0
α-Methylstyrene	0.0	0.0	0.0	0.3
Methylnaphthalene	0.1	0.0	0.0	0.0
Methylpyridine	0.7	0.0	0.0	36.9
Molybdenum and molybdenum compounds	0.0	0.0	0.0	0.4
Dioxins	3.3	0.1	0.0	7.4
<b>Total</b>	<b>264.7</b>	<b>0.1</b>	<b>0.0</b>	<b>1340.4</b>

Note: The list shows emissions and transfers of 31 substances (out of the 62 PRTR Law-specified substances for group companies in Japan) exceeding 50 kg and dioxins.

Poly (oxyethylene) alkyl ether	0.2	0.0	0.0	13.9
Formaldehyde	0.1	0.0	0.0	0.0
Manganese and manganese compounds	0.0	0.3	0.0	1.5
Methacrylic acid 2,3-Epoxypropyl	0.0	0.0	0.0	2.8
Methyl methacrylate	6.8	0.0	0.0	9.5
Methylenebis (4,1-phenylene) diisocyanate	0.0	0.0	0.0	39.8
Methylene bisphenyl isocyanate	0.0	0.0	0.0	35.4
Lead and lead compounds	0.0	0.0	0.0	1.0
Nickel and nickel compounds	0.0	0.3	0.0	7.9
Dioxins	1.1	17.0	0.0	44.4
<b>Total</b>	<b>209.7</b>	<b>30.3</b>	<b>0.0</b>	<b>1555.9</b>

Note: The list shows emissions and transfers of 44 substances (out of Toray's 64 PRTR Law-specified substances) exceeding 50 kg and dioxins.



Copyright © 2017 TORAY INDUSTRIES, INC.

## Sites with ISO 14001 Certification

Sites with ISO 14001 Certification (as of March 2016)

**Toray: All 12 plants**

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

**Group companies in Japan: 36 plants at 22 companies<sup>3</sup>**

Du Pont-Toray Co., Ltd. [Tokai], Toray Opelontex Co., Ltd., Toray Textiles, Inc. [Tokai], Toray Coatex Co., Ltd. [Kyoto, Chemical Products], Toray Hybrid Cord, Inc., Toyo Plastic Seiko Co., Ltd. [Mishima, Koriyama], Toray PEF Products Inc. [Konan], Toray Monofilament Co., Ltd., Toray Advanced Film Co., Ltd. [Mishima, Takatsuki, Fukushima, Nakatsugawa], Toray KP Films Inc., Toray Fine Chemicals Co., Ltd. [Moriyama, Matsuyama, Tokai, Chiba], Toray Engineering Co., Ltd. [Numazu], Soda Aromatic Co., Ltd. [Noda, Koriyama, Okayama Chemicals], Toray ACE Co., Ltd. [Ehime, Fukushima], Dow Corning Toray Co., Ltd. [Chiba, Fukui, Yamakita, Komatsu], Toray Battery Separator Film Co., Ltd., Suido Kiko Kaisha, Ltd., Toray Medical Co., Ltd., Ichimura Sangyo Co., Ltd., Toray International, Inc., Ltd., Chori Co., Ltd., Toray Carbon Magic Co., Ltd.

<sup>3</sup> In addition, 12 companies received certification as affiliated companies on Toray sites.

Notes: Information in brackets refers to the names of the plants.

Companies or plants that had acquired ISO14001 certification before joining Toray Group are listed as ISO14001-certified organizations, not as organizations which newly acquired ISO14001 certification in fiscal 2015.

**Group companies outside Japan: 52 plants at 39 companies**

USA	Toray Plastics (America), Inc. [Rhode Island, Virginia], Toray Resin Co., Toray Fluorofibers (America), Inc., Toray Carbon Fibers America, Inc., Toray Composites (America), Inc., Toray Membrane USA, Inc.
UK	Toray Textiles Europe Ltd.
France	Toray Films Europe S.A.S. Toray Carbon Fibers Europe S.A.
Germany	Euro Advanced Carbon Fiber Composites GmbH
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, P.T. Acryl Textile Mills, P.T. Indonesia Synthetic Textile Mills, P.T. <b>Toray Polytech Jakarta</b>
Thailand	Thai Toray Textile Mills Public Company Limited, Thai Toray Synthetics Co., Ltd. [Bangkok, Ayutthaya, Nakhonpathom], Luckytex (Thailand) Public Company Limited [Mill 1, Mill 2, Mill 3]
Malaysia	Penfibre Sdn. Berhad, Penfabric Sdn. Berhad [Mill 1, Mill 2, 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 Plastics Precision (Zhongshan) Ltd., <b>Toray Jifa (Qingdao) Textile Co., Ltd.</b> , Toray Plastics (Suzhou) Co., Ltd., Toray Fibers & Textiles Research Laboratories (China) Co., Ltd., Toray Advanced Materials Research Laboratories (China) Co., Ltd., Toray Polytech (Nantong) Co., Ltd., Toray BlueStar Membrane Co., Ltd., Toray Plastics (Chengdu) Co., Ltd.
Republic of Korea	Toray Advanced Materials Korea Inc. [Mill 1, Mill 2, Mill 3], STEMCO, Ltd. , Toray Chemical Korea Inc. [Mill 1, Mill 2, Mill 3, Mill 4]

Notes: Information in brackets refers to the names of the plants.

Names in green indicate companies and plants that newly acquired ISO14001 certification in fiscal 2015.



Copyright © 2017 TORAY INDUSTRIES, INC.

# Environmental Data for 12 Toray Plants and Principal Group Companies

Environmental Data for 12 Toray Plants and Principal Group Companies

		Emission volume													Principal manufactured products	
		GHG emissions	PRTR				Gas emissions			zv			Waste			
			Emissions			Waste transfers	SOx	Nox	Dust	BOD	COD	Water	Recycled	Simple incineration		Landfill disposal
			Air	Water	Soil & landfill	Waste										
10,000 tons CO <sub>2</sub> /year	tons/year	tons/year	tons/year	tons/year	tons/year	tons/year	tons/year	tons/year	tons/year	million m <sup>3</sup> /year	tons/year	tons/year	tons/year			
Japan	Shiga Plant	9.9	4	0	0	296	0	29	5	67	67	20.8	2,953	19	0	<ul style="list-style-type: none"> <li>• Base material of ECSAINE™ man-made suede</li> <li>• LUMIRROR™ polyester film</li> <li>• TOPTICAL™ color filter</li> <li>• TORAYVINO™ home water purifier</li> </ul>
Japan	Seta Plant	0.2	0	0	0	0	0	0	0	0	0	0.1	41	0	0	<ul style="list-style-type: none"> <li>• TORAYLON™ acrylic fiber</li> <li>• Medical devices (Inoue Balloon catheters, ANTHRONTM P-U catheters)</li> </ul>
Japan	Ehime Plant	72.9	74	13	0	595	287	749	93	101	156	33.7	8,720	31	0	<ul style="list-style-type: none"> <li>• TORAY TETORON™ polyester staple fiber</li> <li>• TORAYCA™ carbon fiber</li> <li>• ROMEMBRA™ reverse osmosis membrane module</li> <li>• TORAYCON™ PBT resin</li> </ul>
Japan	Nagoya Plant	9.4	20	0	0	26	0	49	2	84	157	30.3	3,419	1,073	68	<ul style="list-style-type: none"> <li>• AMILAN™ nylon resin</li> <li>• TORAYCON™ PBT resin</li> <li>• Various fine chemicals</li> </ul>
Japan	Tokai Plant	71.0	56	18	0	37	5	341	5	402	331	19.1	6,680	137	88	<ul style="list-style-type: none"> <li>• Caprolactam</li> <li>• Terephthalic acid</li> <li>• TORAY TETORON™ polyester chips</li> <li>• TORELINA™ PPS resin</li> </ul>
Japan	Aichi Plant	2.4	0	0	0	9	0	1	0	3	-	1.8	94	0	0	<ul style="list-style-type: none"> <li>• Nylon filament yarn</li> <li>• RAYTELA™ plastic optical fiber</li> </ul>
Japan	Okazaki Plant	8.7	11	0	0	98	0	47	3	10	19	4.7	2,518	6	6	<ul style="list-style-type: none"> <li>• Nylon filament yarn</li> <li>• TORAY WATERLESS PLATE™ printing plate</li> <li>• Filtryzer™ hemodialyzers</li> <li>• TORAYVINO™ home water purifier</li> </ul>
Japan	Mishima Plant	16.3	2	0	0	25	2	176	0	24	18	36.8	675	zz	0	<ul style="list-style-type: none"> <li>• LUMIRROR™ polyester film</li> <li>• TORAY TETORON™ polyester filament yarn</li> <li>• DORNER™ oral administration prostacyclin PGI2 derivative</li> <li>• FERON™ natural interferon-β preparation</li> </ul>
Japan	Chiba Plant	1.7	37	0	0	2	0	12	0	5	51	4.1	2,815	19	12	• TOYOLAC™ ABS resin

Japan	Tsuchiura Plant	3.0	0	0	0	0	0	5	0	1	-	0.4	143	0	0	• TORAYFAN™ BO polypropylene film
Japan	Gifu Plant	7.6	1	0	0	9	0	21	0	8	9	9.4	654	0	0	• ECSAINE™ man-made suede • LUMIRROR™ polyester film • TORELINA™ PPS film
Japan	Ishikawa Plant	7.5	4	0	0	1	3	24	1	7	3	5.5	1,679	5	3	• TORAY TETORON™ polyester filament yarn • Nylon filament yarn • TORAYCA™ prepreg
Japan	Toray Hybrid Cord, Inc.	1.6	2	0	0	1	0	1	0	3	9	0.8	366	0	0	• Tire cord • Carpet pile fiber
Japan	Toray Advanced Film Co., Ltd. [Mishima]	0.9	1	0	0	4	0	2	0	0	0	0.3	478	0	0	• CERAPEEL™ Release film • LUMISOLAR™ PV-back sheet
Malaysia	Penfibre Sdn. Berhad [Fibers & Textiles]	3.9	0	0	0	0	2	2	116	1	8	0.2	159	75	41	• TORAY TETORON™ polyester staple fiber
France	Toray Films Europe S.A.S.	2.7	0	0	0	2	0	17	0	5	11	1.7	897	3,369	344	• LUMIRROR™ polyester film

Note: Information in brackets refers to the names of the plants.

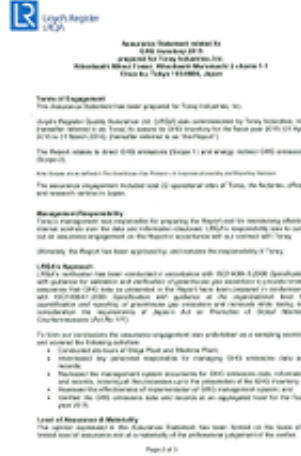


Copyright © 2017 TORAY INDUSTRIES, INC.

# Third-Party Assurance



(PDF: 106KB) [PDF](#)



(PDF: 150KB) [PDF](#)



(PDF: 125KB) [PDF](#)



Copyright © 2017 TORAY INDUSTRIES, INC.



## Comparative Table with ISO 26000 Subjects

### Core subjects

- ▼ [Organizational governance](#)
- ▼ [Human rights](#)
- ▼ [Labor practices](#)
- ▼ [The environment](#)
- ▼ [Fair operating practices](#)
- ▼ [Consumer issues](#)
- ▼ [Community involvement and development](#)

### Organizational governance

Issues	Toray's initiatives
1. Organizational governance	<a href="#">Toray Group's Management Philosophy and CSR</a>
	<a href="#">Message from the President</a>
	<a href="#">Management Strategies and CSR</a>
	<a href="#">Toray Group's Corporate Social Responsibility</a>
	<a href="#">Materiality at Toray Group</a>
	<a href="#">Fifth CSR Road Map</a>
	<a href="#">Management (Corporate Governance and Management Transparency)</a>
	<a href="#">Implementing CSR Activities and Improving CSR Education</a>
	<a href="#">Management (Corporate Ethics and Legal Compliance)</a>
	<a href="#">Promoting Diversity</a>
<a href="#">Management (Communication)</a>	

## Human rights

Issues	Toray's initiatives
1. Due diligence	
2. Human rights risk situations	Committed to Human Rights
	Toray Group's CSR Procurement, Purchasing and Distribution
3. Avoidance of complicity	Committed to Human Rights
	Toray Group's CSR Procurement, Purchasing and Distribution
4. Resolving grievances	Ensuring Employees Understand the Importance of Ethical Conduct and Legal Compliance
5. Discrimination and vulnerable groups	Committed to Human Rights
	Promoting Diversity
6. Civil and political rights	Management (Corporate Ethics and Legal Compliance)
7. Economic, social and cultural rights	Committed to Human Rights
	Social Contribution Activities (Education/The Environment/Local Communities)
8. Fundamental principles and rights at work	Committed to Human Rights

## Labor practices

Issues	Toray's initiatives
1. Employment and employment relationship	Committed to Human Rights
	Developing and Retaining Human Resources to Create New Value
	Promoting Diversity
2. Conditions of work and social protection	Creating a Positive Workplace for Employees

3. Social dialogue	Management (Corporate Governance and Management Transparency)
	Communication with Employees
4. Health and safety at work	Occupational Safety and Accident Prevention Activities
5. Human development and training in the workplace	Special Feature 2: Human Resources Development, Supporting Innovation
	Developing and Retaining Human Resources to Create New Value

## The environment

Issues	Toray's initiatives
1. Prevention of pollution	Safety, Health, Accident Prevention and Environmental Preservation Management
	Voluntary Initiatives to Reduce Atmospheric Emissions of Chemical Substances
	Initiatives to Prevent Air and Water Pollution
	Initiatives to Reduce Waste
	Environmental Risk Management
	Environmental Data
2. Sustainable resource use	Approach to Green Innovation Product Sector
	Promoting Recycling Initiatives
	Toray Group Distribution Initiatives
	Conserving Energy and Curbing Global Warming
	Initiatives for Managing Water Resources
	Initiatives to Reduce Waste
	Environmental Data
3. Climate change mitigation and adaptation	Special Feature 1: World-Changing Innovations, Linked

	by the Power of Materials (Green Innovation)
	Green Innovation Business Expansion Project
	Toray Group Distribution Initiatives
	Conserving Energy and Curbing Global Warming
	Environmental Data
4. Protection of the environment, biodiversity and restoration of natural habitats	Biodiversity Initiatives
	Environmental Risk Management

## Fair operating practices

Issues	Toray's initiatives
1. Anti-corruption	Management (Corporate Ethics and Legal Compliance)
	Prevention of Regulatory Infractions
	Ensuring Employees Understand the Importance of Ethical Conduct and Legal Compliance
	Compliance with Antitrust Laws and Anti-Bribery Rules around the World
2. Responsible political involvement	Ensuring Employees Understand the Importance of Ethical Conduct and Legal Compliance
3. Fair competition	Ensuring Employees Understand the Importance of Ethical Conduct and Legal Compliance
	Compliance with Antitrust Laws and Anti-Bribery Rules around the World
4. Promoting social responsibility in the value chain	Toray Group's CSR Procurement, Purchasing and Distribution
	Toray Group Distribution Initiatives
	Occupational Safety and Accident Prevention Activities
	Communication with Business Partners

## Consumer issues

Issues	Toray's initiatives
1. Fair marketing, factual and unbiased information and fair contractual practices	Communication with Customers
	Communication with the Media
2. Protecting consumers' health and safety	Initiatives for Product Safety and Quality Assurance
3. Sustainable consumption	Special Feature 1: World-Changing Innovations, Linked by the Power of Materials (Green Innovation)
	Green Innovation Business Expansion Project
	Promoting Life Cycle Management
	Approach to Green Innovation Product Sector
	Promoting Recycling Initiatives
4. Consumer service, support, and complaint and dispute resolution	Initiatives for Product Safety and Quality Assurance
5. Consumer data protection and privacy	Protection of Personal Information
6. Access to essential services	Business Continuity Plan Initiatives
7. Education and awareness	Initiatives for Product Safety and Quality Assurance

## Community involvement and development

Issues	Toray's initiatives
1. Community involvement	Communication with Local Communities
	Management (Social Contribution Activities)
2. Education and culture	Social Contribution Activities (Education/The Environment/Local Communities)

3. Employment creation and skills development	Social Contribution Activities (Local Communities)
4. Technology development and access	Promoting Science and Technology
5. Wealth and income creation	
6. Health	Social Contribution Activities (Local Communities)
7. Social investment	Social Contribution Activities (Fiscal 2015 Results)



Copyright © 2017 TORAY INDUSTRIES, INC.

## Comparative Table with GRI Guidelines (G4)

### GENERAL STANDARD DISCLOSURES (in accordance with CORE application level)

Strategy and Analysis		References
G4-1	a. Provide a statement from the most senior decision-maker of the organization (such as CEO, chair, or equivalent senior position) about the relevance of sustainability to the organization and the organization's strategy for addressing sustainability.	> <a href="#">Message from the President</a>
Organizational Profile		
G4-3	a. Report the name of the organization.	> <a href="#">Corporate Outline</a>
G4-4	a. Report the primary brands, products, and services	> <a href="#">Our Businesses</a>
G4-5	a. Report the location of the organization's headquarters.	> <a href="#">Toray Industries, Inc.</a>
G4-6	a. Report the number of countries where the organization operates, and names of countries where either the organization has significant operations or that are specifically relevant to the sustainability topics covered in the report.	Editorial Policy About Toray
G4-7	a. Report the nature of ownership and legal form.	About Toray
G4-8	a. Report the markets served (including geographic breakdown, sectors served, and types of customers and beneficiaries).	
G4-9	a. Report the scale of the organization, including: <ul style="list-style-type: none"> <li>• Total number of employees</li> <li>• Total number of operations</li> <li>• Net sales (for private sector organizations) or net revenues (for public sector organizations)</li> <li>• Total capitalization broken down in terms of debt and equity (for private sector organizations)</li> <li>• Quantity of products or services provided</li> </ul>	
G4-10	a. Report the total number of employees by employment contract and gender. b. Report the total number of permanent employees by employment type and gender. c. Report the total workforce by employees and supervised workers and by gender. d. Report the total workforce by region and gender. e. Report whether a substantial portion of the organization's work is performed by workers who are legally recognized as self-employed, or by individuals other than employees or supervised workers, including	

	employees and supervised employees of contractors. f. Report any significant variations in employment numbers (such as seasonal variations in employment in the tourism or agricultural industries).	
G4-11	a. Report the percentage of total employees covered by collective bargaining agreements.	> <a href="#">Dialogue with Labor Unions</a>
G4-12	a. Describe the organization's supply chain.	> <a href="#">Facilitating CSR Initiatives Throughout the Supply Chain</a>
G4-13	a. Report any significant changes during the reporting period regarding the organization's size, structure, ownership, or its supply chain, including: <ul style="list-style-type: none"> <li>• Changes in the location of, or changes in, operations, including facility openings, closings, and expansions</li> <li>• Changes in the share capital structure and other capital formation, maintenance, and alteration operations (for private sector organizations)</li> <li>• Changes in the location of suppliers, the structure of the supply chain, or in relationships with suppliers, including selection and termination</li> </ul>	N/A
G4-14	a. Report whether and how the precautionary approach or principle is addressed by the organization	> <a href="#">Risk Management</a>
G4-15	a. List externally developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes or which it endorses.	> <a href="#">Reference Guidelines</a>
G4-16	a. List memberships of associations (such as industry associations) and national or international advocacy organizations in which the organization: <ul style="list-style-type: none"> <li>• Holds a position on the governance body</li> <li>• Participates in projects or committees</li> <li>• Provides substantive funding beyond routine membership dues</li> <li>• Views membership as strategic</li> </ul>	> <a href="#">International Cooperation in the Textiles and Apparel Industry</a> > <a href="#">Reference Guidelines</a>
Identified Material Aspects and Boundaries		
G4-17	a. List all entities included in the organization's consolidated financial statements or equivalent documents. b. Report whether any entity included in the organization's consolidated financial statements or equivalent documents is not covered by the report.	Editorial Policy About Toray
G4-18	a. Explain the process for defining the report content and the Aspect Boundaries. b. Explain how the organization has implemented the Reporting Principles for Defining Report Content.	> <a href="#">Toray Group's Corporate Social Responsibility</a> > <a href="#">Materiality at Toray Group</a> > <a href="#">Fifth CSR Road Map</a>
G4-19	a. List all the material Aspects identified in the process for defining report content.	> <a href="#">Materiality at Toray Group</a>
G4-20	a. For each material Aspect, report the Aspect Boundary within the organization, as follows: <ul style="list-style-type: none"> <li>• Report whether the Aspect is material within the organization</li> </ul>	> <a href="#">Fifth CSR Road Map</a>



	<ul style="list-style-type: none"> <li>• If the Aspect is not material for all entities within the organization (as described in G4-17), select one of the following two approaches and report either: <ul style="list-style-type: none"> <li>—The list of entities or groups of entities included in G4-17 for which the Aspect is not material or</li> <li>—The list of entities or groups of entities included in G4-17 for which the Aspects is material</li> </ul> </li> <li>• Report any specific limitation regarding the Aspect Boundary within the organization</li> </ul>	
G4-21	<p>a. For each material Aspect, report the Aspect Boundary outside the organization, as follows:</p> <ul style="list-style-type: none"> <li>• Report whether the Aspect is material outside of the organization</li> <li>• If the Aspect is material outside of the organization, identify the entities, groups of entities or elements for which the Aspect is material. In addition, describe the geographical location where the Aspect is material for the entities identified</li> <li>• Report any specific limitation regarding the Aspect Boundary outside the organization</li> </ul>	> <a href="#">Facilitating CSR Initiatives Throughout the Supply Chain</a>
G4-22	a. Report the effect of any restatements of information provided in previous reports, and the reasons for such restatements.	N/A
G4-23	a. Report significant changes from previous reporting periods in the Scope and Aspect Boundaries	Report Boundary (Social Data/Economic Data)
Stakeholder Engagement		
G4-24	a. Provide a list of stakeholder groups engaged by the organization.	> <a href="#">Communication</a>
G4-25	a. Report the basis for identification and selection of stakeholders with whom to engage.	> <a href="#">Corporate Governance Report</a>
G4-26	a. Report the organization's approach to stakeholder engagement, including frequency of engagement by type and by stakeholder group, and an indication of whether any of the engagement was undertaken specifically as part of the report preparation process.	<ul style="list-style-type: none"> <li>&gt; <a href="#">Communication</a></li> <li>&gt; <a href="#">Corporate Governance Report</a></li> </ul>
G4-27	a. Report key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting. Report the stakeholder groups that raised each of the key topics and concerns.	<ul style="list-style-type: none"> <li>&gt; <a href="#">Communication</a></li> <li>&gt; <a href="#">Corporate Governance Report</a></li> </ul>
Report Profile		
G4-28	a. Reporting period (such as fiscal or calendar year) for information provided	Period Covered by this Report
G4-29	a. Date of most recent previous report (if any).	Issue date
G4-30	a. Reporting cycle (such as annual, biennial).	Editorial Policy
G4-31	a. Provide the contact point for questions regarding the report or its contents.	Contact
G4-32	a. Report the 'in accordance' option the organization has chosen.	> <a href="#">Reference Guidelines</a>

	<p>b. Report the GRI Content Index for the chosen option (see tables below).</p> <p>c. Report the reference to the External Assurance Report, if the report has been externally assured. GRI recommends the use of external assurance but it is not a requirement to be 'in accordance' with the Guidelines.</p>	
G4-33	<p>a. Report the organization's policy and current practice with regard to seeking external assurance for the report.</p> <p>b. If not included in the assurance report accompanying the sustainability report, report the scope and basis of any external assurance provided.</p> <p>c. Report the relationship between the organization and the assurance providers.</p> <p>d. Report whether the highest governance body or senior executives are involved in seeking assurance for the organization's sustainability report.</p>	<p>&gt; <a href="#">Third-Party Assurance</a></p> <p>&gt; <a href="#">Third Party Opinions</a></p>
Governance		
G4-34	<p>a. Report the governance structure of the organization, including committees of the highest governance body. Identify any committees responsible for decision-making on economic, environmental and social impacts.</p>	<p>&gt; <a href="#">Corporate Governance and Management Transparency</a></p>
Ethics and Integrity		
G4-56	<p>a. Describe the organization's values, principles, standards and norms of behavior such as codes of conduct and codes of ethics.</p>	<p>&gt; <a href="#">Toray Group's Management Philosophy and CSR</a></p>

## SPECIFIC STANDARD DISCLOSURES

Generic Disclosures On Management Approach		
G4-DMA	<p>a. Report why the Aspect is material. Report the impacts that make this Aspect material.</p> <p>b. Report how the organization manages the material Aspect or its impacts.</p> <p>c. Report the evaluation of the management approach, including:</p> <ul style="list-style-type: none"> <li>• The mechanisms for evaluating the effectiveness of the management approach</li> <li>• The results of the evaluation of the management approach</li> <li>• Any related adjustments to the management approach</li> </ul>	<p>&gt; <a href="#">Toray Group's Corporate Social Responsibility</a></p> <p>&gt; <a href="#">Materiality at Toray Group</a></p>
ECONOMIC		
Economic Performance		
G4-EC1	Direct economic value generated and distributed	<p>About Toray</p> <p>&gt; <a href="#">Investor Relations</a></p>
G4-EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change	<p>&gt; <a href="#">Green Innovation</a></p> <p>&gt; <a href="#">Green Innovation Business Expansion</a></p>

		Project
G4-EC3	Coverage of the organization's defined benefit plan obligations	
G4-EC4	Financial assistance received from government	
Market Presence		
G4-EC5	Ratios of standard entry level wage by gender compared to local minimum wage at significant locations of operation	
G4-EC6	Proportion of senior management hired from the local community at significant locations of operation	
Indirect Economic Impacts		
G4-EC7	Development and impact of infrastructure investments and services supported	
G4-EC8	Significant indirect economic impacts, including the extent of impacts	
Procurement Practices		
G4-EC9	Proportion of spending on local suppliers at significant locations of operation	
<b>ENVIRONMENTAL</b>		
Materials		
G4-EN1	Materials used by weight or volume	Amount of major raw materials used (Toray Industries, Inc.) 766,000 tons
G4-EN2	Percentage of materials used that are recycled input materials	
Energy		
G4-EN3	Energy consumption within the organization	> <a href="#">Conserving Energy and Curbing Global Warming</a> > <a href="#">Environmental Data</a>
G4-EN4	Energy consumption outside of the organization	
G4-EN5	Energy intensity	> <a href="#">Conserving Energy and Curbing Global Warming</a> > <a href="#">Environmental Data</a>
G4-EN6	Reduction of energy consumption	> <a href="#">Environmental Data</a>
G4-EN7	Reductions in energy requirements of products and services	
Water		
G4-EN8	Total water withdrawal by source	> <a href="#">Environmental Data</a>

G4-EN9	Water sources significantly affected by withdrawal of water	N/A
G4-EN10	Percentage and total volume of water recycled and reused	
Biodiversity		
G4-EN11	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	> <a href="#">Biodiversity Initiatives</a>
G4-EN12	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas	
G4-EN13	Habitats protected or restored	> <a href="#">Increasing Green Areas, VOICE</a>
G4-EN14	Total number of IUCN red list species and national conservation list species with habitats in areas affected by operations, by level of extinction risk	
Emissions		
G4-EN15	Direct greenhouse gas (GHG) emissions (Scope 1)	> <a href="#">Conserving Energy and Curbing Global Warming</a>
G4-EN16	Energy indirect greenhouse gas (GHG) emissions (Scope 2)	> <a href="#">Environmental Data</a>
G4-EN17	Other indirect greenhouse gas (GHG) emissions (Scope 3)	
G4-EN18	Greenhouse gas (GHG) emissions intensity	> <a href="#">Conserving Energy and Curbing Global Warming</a>
G4-EN19	Reduction of greenhouse gas (GHG) emissions	> <a href="#">Environmental Data</a>
G4-EN20	Emissions of ozone-depleting substances (ODS)	> <a href="#">Initiatives to Protect the Ozone Layer</a>
G4-EN21	NOx, SOx, and other significant air emissions	> <a href="#">Air Quality Management</a> > <a href="#">Environmental Data</a>
Effluents and Waste		
G4-EN22	Total water discharge by quality and destination	> <a href="#">Water Quality Management</a> > <a href="#">Environmental Data</a>
G4-EN23	Total weight of waste by type and disposal method	> <a href="#">Initiatives to Reduce Waste</a> > <a href="#">Environmental Data</a>
G4-EN24	Total number and volume of significant spills	> <a href="#">Environmental Risk Management</a>
G4-EN25	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention 2 Annex I, II, III, and VIII, and percentage of transported waste shipped internationally	
G4-EN26	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the organization's discharges of water and runoff	N/A

Products and Services		
G4-EN27	Extent of impact mitigation of environmental impacts of products and services	<ul style="list-style-type: none"> <li>&gt; <a href="#">Green Innovation</a></li> <li>&gt; <a href="#">Approach to Green Innovation Product Sector</a></li> <li>&gt; <a href="#">Promoting Recycling Initiatives</a></li> </ul>
G4-EN28	Percentage of products sold and their packaging materials that are reclaimed by category	
Compliance		
G4-EN29	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations	> <a href="#">Environmental Risk Management</a>
Transport		
G4-EN30	Significant environmental impacts of transporting products and other goods and materials for the organization's operations, and transporting members of the workforce	> <a href="#">Toray Group Distribution Initiatives</a>
Overall		
G4-EN31	Total environmental protection expenditures and investments by type	> <a href="#">Environmental Accounting</a>
Supplier Environmental Assessment		
G4-EN32	Percentage of new suppliers that were screened using environmental criteria	
G4-EN33	Significant actual and potential negative environmental impacts in the supply chain and actions taken	> <a href="#">Facilitating CSR Initiatives Throughout the Supply Chain</a>
Environmental Grievance Mechanisms		
G4-EN34	Number of grievances about environmental impacts filed, addressed, and resolved through formal grievance mechanisms	
<b>SOCIAL</b>		
<b>LABOR PRACTICES AND DECENT WORK</b>		
Employment		
G4-LA1	Total number and rates of new employee hires and employee turnover by age group, gender and region	<p>Number of newly hired employees (regular employees, Toray Industries, Inc.)</p> <p>Men: 315 Women: 42</p> <p>Average time on the job (regular employees, Toray Industries, Inc.)</p> <p>Men: 13.9 years Women: 15.8 years</p>
G4-LA2	Benefits provided to full-time employees that are not provided to temporary or part-time employees, by significant locations of operation	

G4-LA3	Return to work and retention rates after parental leave, by gender	> <a href="#">Creating a Positive Workplace for Employees</a>
Labor/Management Relations		
G4-LA4	Minimum notice periods regarding operational changes, including whether these are specified in collective agreements	
Occupational Health and Safety		
G4-LA5	Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs	
G4-LA6	Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities, by region and by gender	> <a href="#">Toray Group Safety Record</a>
G4-LA7	Workers with high incidence or high risk of diseases related to their occupation	
G4-LA8	Health and safety topics covered in formal agreements with trade unions	> <a href="#">Safety, Health, Accident Prevention, and Environment Activity Policy</a>
Training and Education		
G4-LA9	Average hours of training per year per employee by gender, and by employee category	
G4-LA10	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings	> <a href="#">Reemployment System</a>
G4-LA11	Percentage of employees receiving regular performance and career development reviews, by gender and by employee category	> <a href="#">Developing and Retaining Human Resources to Create New Value</a>
Diversity and Equal Opportunity		
G4-LA12	Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity	About Toray > <a href="#">Promoting Diversity</a>
Equal Remuneration for Women and Men		
G4-LA13	Ratio of basic salary and remuneration of women to men by employee category, by significant locations of operation	
Supplier Assessment for Labor Practices		
G4-LA14	Percentage of new suppliers that were screened using labor practices criteria	
G4-LA15	Significant actual and potential negative impacts for labor practices in the supply chain and actions taken	> <a href="#">Facilitating CSR Initiatives Throughout the Supply Chain</a>

Labor Practices Grievance Mechanisms		
G4-LA16	Number of grievances about labor practices filed, addressed, and resolved through formal grievance mechanisms	
HUMAN RIGHTS		
Investment		
G4-HR1	Total number and percentage of significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	
G4-HR2	Total hours of employee training on human rights policies or procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained	> <a href="#">Committed to Human Rights</a>
Non-discrimination		
G4-HR3	Total number of incidents of discrimination and corrective actions taken	N/A
Freedom of Association and Collective Bargaining		
G4-HR4	Operations and suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and measures taken to support these rights	
Child Labor		
G4-HR5	Operations and suppliers identified as having significant risk for incidents of child labor, and measures taken to contribute to the effective abolition of child labor	> <a href="#">Toray Group's GSR Procurement, Purchasing and Distribution</a>
Forced or Compulsory Labor		
G4-HR6	Operations and suppliers identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor	> <a href="#">Toray Group's GSR Procurement, Purchasing and Distribution</a>
Security Practices		
G4-HR7	Percentage of security personnel trained in the organization's human rights policies or procedures that are relevant to operations	
Indigenous Rights		
G4-HR8	Total number of incidents of violations involving rights of indigenous peoples and actions taken	
Assessment		
G4-HR9	Total number and percentage of operations that have been subject to human rights reviews or impact assessments	

Supplier Human Rights Assessment		
G4-HR10	Percentage of new suppliers that were screened using human rights criteria	
G4-HR11	Significant actual and potential negative human rights impacts in the supply chain and actions taken	> <a href="#">Facilitating CSR Initiatives Throughout the Supply Chain</a>
Human Rights Grievance Mechanisms		
G4-HR12	Number of grievances about human rights impacts filed, addressed, and resolved through formal grievance mechanisms	
SOCIETY		
Local Communities		
G4-SO1	Percentage of operations with implemented local community engagement, impact assessments, and development programs	
G4-SO2	Operations with significant actual and potential negative impacts on local communities	N/A
Anti-corruption		
G4-SO3	Total number and percentage of operations assessed for risks related to corruption and the significant risks identified	
G4-SO4	Communication and training on anti-corruption policies and procedures	> <a href="#">Compliance with Antitrust Laws and Anti-Bribery Rules around the World</a>
G4-SO5	Confirmed incidents of corruption and actions taken	N/A
Public Policy		
G4-SO6	Total value of political contributions by country and recipient/beneficiary	
Anti-competitive Behavior		
G4-SO7	Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes	N/A
Compliance		
G4-SO8	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations	N/A
Supplier Assessment for Impacts on Society		
G4-SO9	Percentage of new suppliers that were screened using criteria for impacts on society	
G4-SO10	Significant actual and potential negative impacts on society in the supply chain and actions taken	> <a href="#">Facilitating CSR Initiatives Throughout the Supply Chain</a>



Grievance Mechanisms for Impacts on Society		
G4-SO11	Number of grievances about impacts on society filed, addressed, and resolved through formal grievance mechanisms	
PRODUCT RESPONSIBILITY		
Customer Health and Safety		
G4-PR1	Percentage of significant product and service categories for which health and safety impacts are assessed for improvement	> <a href="#">Initiatives for Product Safety and Quality Assurance</a>
G4-PR2	Total number of incidents of non-compliance with regulations and voluntary codes concerning the health and safety impacts of products and services during their life cycle, by type of outcomes	N/A
Product and Service Labeling		
G4-PR3	Type of product and service information required by the organization's procedures for product and service information and labeling, and percentage of significant product and service categories subject to such information requirements	
G4-PR4	Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes	
G4-PR5	Results of surveys measuring customer satisfaction	> <a href="#">Perfecting Systems in Support of Quality Assurance Activities</a> > <a href="#">Communication with Customers</a>
Marketing Communications		
G4-PR6	Sale of banned or disputed products	N/A
G4-PR7	Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship, by type of outcomes	
Customer Privacy		
G4-PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data	
Compliance		
G4-PR9	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services	N/A

## Third Party Opinions



Professor

Yoshinao Kozuma

Faculty of Economics, Sophia  
University

After having completed the doctoral program's coursework without degree at the Graduate School of Economics of Sophia University, Yoshinao Kozuma obtained a position as research assistant at the Nagoya Institute of Technology, and was then invited to the Limperg Instituut (Inter-University Institute for Accounting and Auditing) in Amsterdam as a visiting researcher under a scholarship from the Dutch Ministry of Education and Science. He became an associate professor at the School of Management and Informatics at the University of Shizuoka, and associate professor at the Faculty of Economics at Sophia University, before assuming his current position. He has chaired and served as a committee member for numerous commissions and study groups on corporate social responsibility and the environment, for organizations such as the Ministry of Environment; Ministry of Economy, Trade and Industry; Ministry of Land, Infrastructure and Transport; Ministry of Agriculture,

The Toray Group is making strides in practicing corporate social responsibility (CSR), and is positioning itself to comprehensively manage business opportunities and risks based on a growth strategy that aims to help build a more sustainable world. The Group has outlined its overall direction in the long-term corporate vision, AP-Growth TORAY 2020, which is driven by a medium-term management plan and integrated CSR Road Map.

This CSR Report outlines the Group's efforts in fiscal 2015, which coincides with the middle year of both the medium-term management plan, Project AP-G 2016, and Fifth CSR Road Map, and good progress on both is being reported. Under Project AP-G 2016, the Group has increased net sales in the Green Innovation business and Life Innovation business by 16% and 10% (year-on-year) respectively, and is on track to achieve its targets for fiscal 2016.

Under the Fifth CSR Road Map, the Group has made significant progress by conducting a materiality assessment to identify 19 material aspects in its practice of social responsibility, as well as committing to regularly review the materiality analysis process and material aspects. This shows that the Group is taking a systematic and balanced approach to practicing socially responsible management, which should be commended.

The Fifth CSR Road Map has summarized the Group's targets and results in the same manner since fiscal 2013, providing a crucial picture of the progress being made in practicing social responsibility. The road map describes the implementation leaders, key performance indicators (KPIs), scope of reporting, targets, and actual results in great detail, summarizing the Group's efforts to practice social responsibility.

There are a number of issues that need to be addressed. The Group has yet to meet its targets for certain KPIs, specifically the number of major accidents and the percentage of companies achieving the legally mandated employment rate for persons with disabilities. Furthermore, the scope of reporting for KPIs has not yet been expanded to cover the entire Group. Additionally, the Group should disclose the KPIs it is using to assess its results for the 19 material aspects for practicing social responsibility.



Kaori Kuroda

Executive Director, CSO Network Japan

Following a career in the private sector, Kaori Kuroda worked for the Center on Japanese Economy and Business at the Columbia University School of Business and The Asia Foundation Japan Office, before joining CSO Network Japan in 2004. Since 2010, she has also held a position as Director of The Asia Foundation Japan Office. Kuroda was involved in developing the ISO 26000 guidance on social responsibility, representing the views of Japanese NGOs, and currently is a member of the Japanese working group for ISO 20400 guidance on sustainable procurement. She also serves as a member of the Saitama City CSR Promotion Committee and Japan Football Association (JFA) Committee for Social Responsibility, and as a Director of The Japan Society for International Development. Kuroda is a member of the American Institute of Certified Public Accountants.

Building on more than 90 years in business, the Toray Group is successfully integrating its social responsibilities into its management philosophy and management strategies, and in the process generating strong business results. I would like to highlight several areas where the Group deserves to be commended.

Firstly, the Group has made great progress by identifying 19 material aspects in its practice of social responsibility for the medium- and long-term, through a materiality analysis process implemented in accordance with the *G4 Sustainability Reporting Guidelines* from the Global Reporting Initiative (GRI).

This CSR Report includes a materiality matrix and a comparative table of material aspects and CSR Guidelines, while outlining the Group's future direction for practicing social responsibility. At the same time, I hope that the Group will make even more of an effort to conduct dialogue with stakeholders, in reviewing the material aspects and determining the scope of reporting.

Secondly, the Group deserves to be commended for its efforts to develop human resources to sustain innovation. This personnel development is crucial to any effort to build a solid platform for creating innovation. The report highlights the Group's discretionary research, which gives employees the freedom to explore their ideas, and the Toray School of Technology and Business, which aims to enhance personnel strengths on the manufacturing floor. Highlighting these initiatives will also help to further motivate its employees. I hope that the Group will continue to publicize its efforts to comprehensively pursue human resources development to support innovation, in conjunction with its hiring and development of diverse human resources.

I would like to mention the Group's practice of social responsibility in its supply chain this year, again. Commendably, the Group is further enhancing its efforts by reviewing human rights issues in the global supply chain, and conducting supplier surveys and visiting with suppliers. I hope that the Group will engage in further dialogue with stakeholders throughout the supply chain.

In 2015, the international community made history by establishing the Sustainable Development Goals (SDGs) and agreeing on the Paris Agreement as a new framework for addressing climate change. This is a major commitment to realize sustainability in the world, and I hope that the Toray Group will continue to be a global leader and leverage the power of materials to create value.

