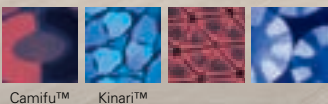


In addition to our traditional Management Philosophy (which includes the Corporate Philosophy, Corporate Missions, Corporate Guiding Principles), the Toray Philosophy includes the Corporate Slogan (which simply expresses Toray's stance on embodying the Corporate Philosophy), the Vision (which represents the direction the Group is headed), the Corporate Culture (which includes values and management perspectives that have been maintained since the company's founding), and the President's Principles.



The cover design combines a cross-sectional photograph of NANODESIGN™. NANODESIGN™ is an innovative composite spinning technology developed by Toray. By controlling the fineness and shape of fibers at the nano-level, it has become possible to create completely new fibers with functions and textures that were previously impossible.



## Corporate Philosophy

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

## Corporate Missions

- For our customers:** To provide new value to our customers through high-quality products and superior services
- For our employees:** To provide meaningful work and fair opportunities
- For our shareholders:** To practice sincere and trustworthy management
- For society:** To establish ties and develop mutual trust as a responsible corporate citizen

## Corporate Guiding Principles

### **Safety and Environment**

Placing top priority on safety, accident prevention and environmental preservation in order to protect the safety and health of employees, customers and local communities and contribute to building a sustainable society

### **Ethics and Fairness**

Acting with fairness, high ethical standards and a strong sense of responsibility while complying with laws, regulations and social norms to earn trust and meet social expectations

### **Customer-Focus**

Providing solutions of high value to customers, and pursuing customer satisfaction and the world's highest level of quality

### **Innovation**

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

### **Strong *Genba-Ryoku* (Workplace Competency)**

Learning from one another and making self-driven efforts to leverage technologies and expertise in order to strengthen workplace competency, which is the foundation of our corporate activities

### **Cooperation and Co-creation**

Forming integrated internal linkages and strategic alliances with external partners, and evolving together with society by creating new value

### **Emphasis on Human Resources**

Providing motivating work environments where employees can demonstrate their abilities, and building a vibrant corporate culture

### **Information Disclosure**

Appropriately disclosing corporate information and enhancing communication with stakeholders in order to maintain management transparency

### **Respect for Human Rights**

Fulfilling our responsibility to respect human rights as a good corporate citizen

## Vision

### **Toray Group Sustainability Vision**

## Corporate Culture

- Contributing to society through business activities
- People-centric management
- Management from a long-term perspective
- Pioneering spirit

## President's Principles

- Stay focused on the basics, search for ideal approaches, identify the right steps, and then carry them out
  - All solutions can ultimately be found in the *Genba* (workplace)
- Consider what is best for the company
- Have the integrity to do the right thing in the right way

## Corporate Slogan

# **Innovation by Chemistry**

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## Toray Group CSR Materiality

Toray Group aims to achieve sustainable development of the Group and society as a whole as part of the realization of the Toray Group Sustainability Vision, as well as to become a highly valuable corporate entity that is respected by society. To that end, the Group undertakes a variety of initiatives in order to realize its corporate philosophy—which embodies the management principles and values inherited since its founding, and the reason and purpose for Toray’s existence—while linking together its management strategies, TORAY VISION 2030, Project AP-G 2022, and the CSR Road Map 2022.



### Corporate Philosophy

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

In addition, in order to incorporate the CSR materiality shown below into specific activities, the CSR Roadmap 2022 describes the relationship between the CSR materiality and CSR guidelines and roadmap targets, and promotes activities accordingly.

<https://www.toray.com/global/sustainability/stance/materiality.html>

1. Contributing to the solution of environmental issues through business activities
2. Contributing to health maintenance and longevity through business activities
3. Addressing resource and energy issues
4. Reducing greenhouse gas emissions
5. Addressing substances with negative environmental impact
6. Corporate ethics and legal compliance
7. Ensuring safety and disaster preparedness
8. Ensuring product quality and safety
9. Initiatives for managing water resources
10. Managing social and environmental impact of suppliers
11. Respecting human rights
12. Creating a positive workplace
13. Securing and developing human resources
14. Conserving biodiversity

## To Our Stakeholders



Toray Group delivers  
and the highest level  
customers in helping  
sustainable society

**Akihiro Nikkaku**

President  
Toray Industries, Inc.



## Inappropriate actions relating to UL certification in the resins business

Toray Industries, Inc. (Toray) reported in January 2022 that it had failed to submit the proper samples of certain resin products intended for certification testing by Underwriters Laboratories LLC (UL), a global third-party safety science organization. In this case, Toray submitted samples that differed from the grades specified for testing in regard to the standards indicating flame retardancy performance of resins as

are committed to working in unison to execute the measures without fail in a thorough effort to recover the reputation of Toray among its customers and society more broadly. The implementation status of these recurrence prevention measures has been disclosed on the Toray Group website.

## Ensuring thorough compliance

Toray includes “Ethics and Fairness” as part of the “Toray Philosophy,” which systematizes the concept of Toray-style management. And as one of my personal principles, I have continued to practice the idea of “stay focused on the basics, search for ideal approaches, identify the right steps, and then carry them out,” the importance of which I have conveyed to Toray’s executives and employees ever since I was appointed President in 2010. In particular, following the discovery in 2017 that quality data had been overwritten, I presented the slogan of “have the integrity to do the right thing in the right way” and strove to foster a greater awareness of compliance. Moreover, under the Toray Philosophy (TP) Project that was deployed across the Group, I felt that progress had been made by Toray’s efforts to firmly instill the Corporate Guiding Principles of “Ethics and Fairness” and “Customer-Focus” for the purpose of putting into practice the Management Philosophy of “Contribute to the realization of a sustainable society through business activities.” Therefore, I am very disappointed that the inappropriate actions involved in UL certification of the Group’s resin products continued behind the scenes without ever being corrected.

Immediately after the UL certification issue was discovered, I released a message to the entire Group stating that “the seriousness of this matter lies in the fact that the situation where the individuals who found out the issue did not take any corrective measures toward the fundamental resolution continued over such a long period of time.” If inappropriate activities become the norm within an organization, hesitation to participate in

high-value solutions  
of quality to its  
to realize a

stipulated by UL. The report also disclosed that some grades of certified resins had been produced and sold with compositions that differed from those certified. Not only did this issue greatly cause inconvenience to customers, it also significantly damaged Toray’s reputation among all of the stakeholders who support the Group on a constant basis, for which I would like to extend my deepest apologies. Upon receiving the investigation report prepared by an expert committee in April 2022, Toray genuinely acknowledged the facts of the issue, the cause analysis, and the recommendations for preventing recurrence contained therein. The Board of Directors then formulated recurrence prevention measures based on the principal causes (see p.68). Under the responsibility of the senior management team that I lead, all executives and employees

## To Our Stakeholders

such activities will weaken, and it will become difficult for those who recognize an issue to speak up. In order that Toray Group contribute to the development of society through the business activities, I believe the most important step is to establish an organizational culture in which employees immediately make corrections when they become aware they are doing something wrong. Taking the opportunity, I have given instructions on the inspection at each workplace to check whether it maintains any customary practices that have been passed down over the years and need to be reviewed with the passage of time. I have also exchanged a promise anew with all employees to always take corrective actions when they become aware of or observe any inappropriate activity in the future. Furthermore, the senior management team, including myself, will show our serious commitment to this promise at every opportunity to interact with employees, including various meetings and informal business results briefing sessions. And we will strive to strengthen compliance awareness and improve the organizational culture in order to instill the concept that “compliance is the top priority for management” into every corner of Toray Group. In addition, I intend to foster a more open and better corporate culture by providing more opportunities than ever before to the senior management team to listen to employee feedback and by ensuring two-way communication.

### Performance overview for fiscal 2021

Against the backdrop of rebound from the economic slump caused by COVID-19, easing of activity restrictions associated with vaccination progress, and major economic measures in the U.S., fiscal 2021 welcomed a significant recovery in the global economy. Despite this, Toray’s business environment remained severe, only showing a moderate pace of economic recovery during the second half of the fiscal year due to factors including a tight supply-demand situation

for semiconductors and other parts and materials, supply limitations stemming from labor shortages, skyrocketing raw material, fuel, and logistics costs caused by the situation in Ukraine, and lockdowns resulting from China’s zero-COVID policy.

Amid these challenges, Toray Group experienced broadly higher revenue and profits, with consolidated revenue up 18.3% year on year to ¥2,228.5 billion, core operating income up 46.3% to ¥132.1 billion, operating income up 80.0% to ¥100.6 billion, and profit attributable to owners of parent up 83.9% to ¥84.2 billion. In particular, ABS resins contributed significantly to securing revenue, while carbon fiber composite materials also returned to the black.

### Priority issues for fiscal 2022

Fiscal 2022 is the final fiscal year of the Medium-Term Management Program, Project AP-G 2022. AP-G 2022 was launched in fiscal 2020 when COVID-19 infections began to spread around the globe. During the COVID-19 pandemic, restrictions on the movement of people and goods disrupted supply chains, while dramatic changes in behavioral patterns and production activities had a significant impact on Toray Group’s businesses. In addition to the prolonged situation in Ukraine, other areas of growing uncertainty include the spread of infections by variants, a weak yen, and soaring prices. In consideration of the sizable changes in the business environment being driven by the impacts of these uncertainties, Toray lowered its forecast for consolidated core operating income from the initial AP-G 2022 target to ¥130.0 billion (down 1.6% compared with fiscal 2021).

In particular, fibers and textiles, battery separator films for lithium-ion secondary batteries, and carbon fiber composite materials deviated considerably from the initial targets. In regard to fibers and textiles, the increasing shift to work from home or remote work due to the COVID-19 pandemic, as well as changes in behavioral patterns among people, led to



a contraction in the formalwear market. Meanwhile, battery separator films have become entangled in fierce price competition with manufacturers from emerging nations. Similarly, carbon fiber composite materials have been negatively affected by the delayed recovery in aircraft demand, which collapsed during the pandemic. Across-the-board, soaring raw material, fuel, and logistics costs have placed intense pressure on profits.

In response to these challenges, Toray will take the following actions. Firstly, as for price pass-through, Toray has no intention of simply raising prices to offset skyrocketing raw material, fuel, and logistics costs, and will instead strive to make price corrections that are commensurate with value. One of the reasons why raising prices is unacceptable is because the value of the product is relatively low, which means that Toray must thoroughly engage in ensuring high added-value in order to raise the value of products themselves and in enhancing cost competitiveness in order to balance the value of products with their price.

In terms of providing high added-value to fibers and textiles, Toray will seek to differentiate its products by applying NANODESIGN™ technology, an approach to controlling fineness and shape of the synthetic fibers at the nano-level for the purpose of enabling completely new functions and textures, thereby creating new markets. Moreover, Toray will actively introduce sustainable materials that reflect the needs of the times, such as &+™ (And Plus) recycled fibers made from used PET bottles. Meanwhile, battery separator films will take a new direction toward specialization in high-end applications. Specifically, Toray aims to expand this business based on high reliability, high-capacity products that utilize its coating technology in conjunction with its film forming technology. Among the various carbon fiber composite materials, regular tow carbon fibers are now primarily supplied for industrial applications for which demand is rapidly

expanding, such as natural gas pressure vessels, in place of aircraft applications for which the market has temporarily contracted. However, given expectation for a recovery in aircraft demand over the long term and for further growth in demand from industrial applications, Toray will keep a close watch on demand trends for each application as it seeks to further improve quality and cost competitiveness while expanding production capacity.

On the other hand, Toray is also accelerating the introduction of products that capture changes in the market. First, Toray foresees increased production and sales of TORAYFAN™ polypropylene films for ultra-thin automotive capacitors. In terms of electronic and information materials, Toray expects to see growth in OLED materials. Then, in terms of carbon fiber composite materials, Zoltek, a U.S. subsidiary, will begin operating an additional carbon fiber production line for wind turbine blade application during the second half of fiscal 2022, which is expected to contribute to the revenue and profit.

## Accelerating sustainability initiatives

Even amid repeated waves of COVID-19 infections and uncertainty regarding movements in international affairs, discussions over issues involving the sustainability of society have heated up. In working to realize the four perspectives of the world\* as outlined in the Toray Group Sustainability Vision formulated in 2018, Toray is advancing initiatives that will contribute to the realization of a sustainable society in accordance with growing demand, primarily in the Green Innovation (GR) businesses, which help solve global environmental issues as well as resource and energy issues, and in the Life Innovation (LI) businesses, which contribute to health maintenance and longevity, and improving the quality of medical care as well as to promoting public health. Moreover, Toray is actively engaged in reducing greenhouse

## To Our Stakeholders

gases (GHGs) emitted from its own business activities, and has declared its commitment to achieving zero GHG emissions in practice by 2050.

As the headquarters for these initiatives, in April 2021, Toray established the Sustainability Committee, which is chaired by the President, to debate and discuss group-wide policies, thereby putting into place a system to formulate overall roadmaps and action plans for realizing the Toray Group Sustainability Vision. Under the umbrella of the Sustainability Committee, the Climate Change Subcommittee identifies issues within initiatives for carbon neutrality, and proposes and advances countermeasures. Similarly, in April 2022 Toray launched the Circular Economy Subcommittee, which drives initiatives to achieve a circular economy, including efforts to promote the recycling of fibers and textiles, films, and resin products, the development and commercialization of plant-based bioplastics, and the recovery and recycling of GHGs at the production stage.

\* 1. A net zero emissions world, where greenhouse gas emissions are completely offset by absorption

2. A world where resources are sustainably managed

3. A world with a restored natural environment, with clean water and air for everyone

4. A world where everyone enjoys good health and hygiene

### Sustainability and digital technology utilization as the next medium-term management program keywords

Toray is currently working to prepare the next medium-term management program, which will kick-off in fiscal 2023. Here I will explain on our business expansion in growth areas and advanced business management by utilizing digital technologies which will be the key to the future business operations.

In terms of expanding business in growth areas, Toray will further accelerate the initiatives intended to realize the four perspectives of the world as outlined in the Toray Group Sustainability Vision. As a materials manufacturer, Toray Group is seeing an increasing number of opportunities to contribute to the

realization of a sustainable society, so I am certain that the Group will be able to play an even greater role than ever before.

In particular, I am keenly aware of the growing expectations from the field of climate change action on Toray Group in regard to realizing a hydrogen society. Similarly, Toray Group foresees the arrival of an era when green hydrogen made from water and power provided by renewable energy becomes the primary energy medium for the world. Which is why Toray is developing materials for building a green hydrogen supply chain. Toray is already the global leader in key components such as hydrocarbon (HC)-based electrolyte membranes which increase the performance of water electrolysis devices. And in June 2022, Toray established the HS Division directly under the authority of the President in order to expand the business for the membranes. In order to shift to full-scale global deployment for bolstering the introduction of green hydrogen, Toray has also begun cooperating with companies and organizations from Japan and overseas, including Siemens Energy AG, one of the world's leading manufacturers of water electrolysis devices and a company with which Toray has agreed to build a strategic partnership.

In terms of advanced business management by utilizing digital technologies, the Technology Center DX Promotion Committee is advancing DX under the themes such as material design, quality improvement, and the enhancement of production efficiency. In particular, for production sites, the Committee classifies the degree of digital technology utilization for each task in accordance with the level and is working in stages to increase the sophistication of tasks by leveraging digital technologies. The Committee is also advancing initiatives that fundamentally enhance the efficiency of research and development by leveraging materials informatics, AI, and other advanced technologies.

The Business Division DX Promotion Committee



administers business data analysis courses to develop human resources that can find solutions to inventory optimization, price analysis, and other workplace issues by organizing facts based on data.

The important point here is to develop human resources that can utilize digital technologies based on a good grasp of “*Genba*” (workplace) operations. Knowledge of digital technologies alone cannot produce good results. Toray Group’s promotion of DX is founded on the concept of solving issues through the utilization of practical digital technologies that are closely tied to *Genba*, whether it be sales and marketing or production.

## Highest level of quality as the foundation of the Toray brand

In May 2020, the Group announced the “Toray Philosophy” as a systematized concept of Toray-style Management, passed down since its founding. Toray has raised the corporate philosophy of “Contributing to society through the creation of new value with innovative ideas, technologies and products,” which is positioned at the top of the “Toray Philosophy.” Ever since its founding, Toray Group has operated based on the unwavering belief that “companies are public institutions,” and therefore values the perspective of contributing to all of its stakeholders, including its employees.

In order to continue contributing to the sustainable development of society through its businesses, Toray Group must ensure that every individual working for the Group deeply empathizes with the “Toray Philosophy” and possesses the feeling that they are contributing to society through their work. Therefore, during the period from August 2020 to March 2022, Toray extended the Toray Philosophy (TP) Project to everyone working at Toray Group, and conducted activities to build connections between colleagues at each workplace in a way that allowed them to share and realize the meaning of working at Toray Group and the future vision for Toray Group. Specifically,

the Group implemented an interactive program in order to help employees understand and practice the “Toray Philosophy.” Under the theme of “What the ‘Toray Philosophy’ means to me,” each executive conveyed to the employees in a relay manner “the type of value they want to deliver and to whom through their work,” after which employees discussed the same theme in their respective workplaces. This effort served as a highly consequential activity that allowed each employee to understand the “Toray Philosophy” and gain a new awareness for putting the “Toray Philosophy” into practice.

In response to the outcomes of the TP Project, in fiscal 2022 Toray launched the “Brand Committee,” which began investigating measures that enable the “Business Brand/Product Brand” and the “Technology Brand” to enhance the value of each other, based on the “Corporate Brand” which reflects the beliefs of the “Toray Philosophy.” In addition, I believe a brand strategy that spreads throughout the world a better understanding of how Toray Group’s products are used and how they are helpful is important to ensuring that employees work with a sense of pride.

The foundation of Toray brand is to provide the highest level of quality in the world. Toray will therefore squarely face the challenges brought to light by the UL certification issue, raise the strength of quality anew, including compliance, and continue to deliver new value and high-quality products to the world. Toray intends to spare no effort in the aim of earning the trust of its customers and society more broadly and of becoming a respected company.

We look forward to the ongoing support and understanding of our stakeholders in these endeavors.



**Akihiro Nikkaku**

President  
Toray Industries, Inc.

# Toray Group Value Creation History

Toray Group began as a manufacturer of viscose rayon in 1926. On top of all three major synthetic fibers such as nylon, polyester, and acrylic, the Company has continued to develop innovative technologies while creating a host of advanced materials and high value-added products in a broad range of films, chemicals, resins, electronic and information materials, carbon fiber composite materials, pharmaceuticals and



1971

Marketing of ECSAINE™, ultra-microfiber nonwoven fabric with suede texture, began



1971

Manufacture and marketing of carbon fiber TORAYCA™ began



1959

Manufacture of LUMIRROR™ polyester film began

1926  
Establishment



1941

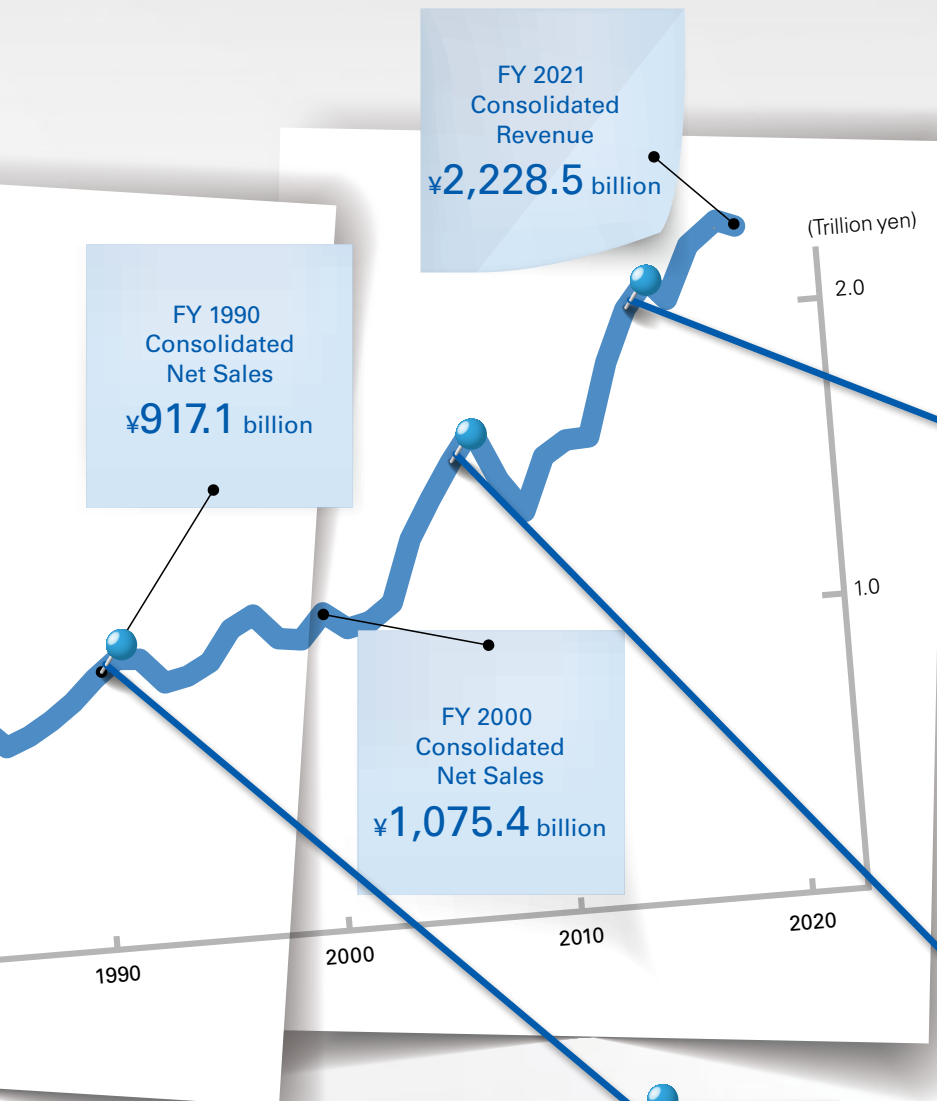
Succeeded in the synthesis and melt spinning of Nylon 6 fiber using proprietary technology



1980

Marketing of ROMEMBRA™ reverse osmosis membrane elements began

medical products, water treatment, and environmental fields. With an eye toward how society will evolve in 2050 and how innovative technologies and advanced materials may be utilized as a driving force, we will adopt a long-term perspective toward enhancing our corporate value.



**2014**

Full-scale entry into large tow carbon fiber business through acquisition of Zoltek Companies, Inc.



**2006**

Strategic partnership started with UNIQLO CO., LTD.



**1990**

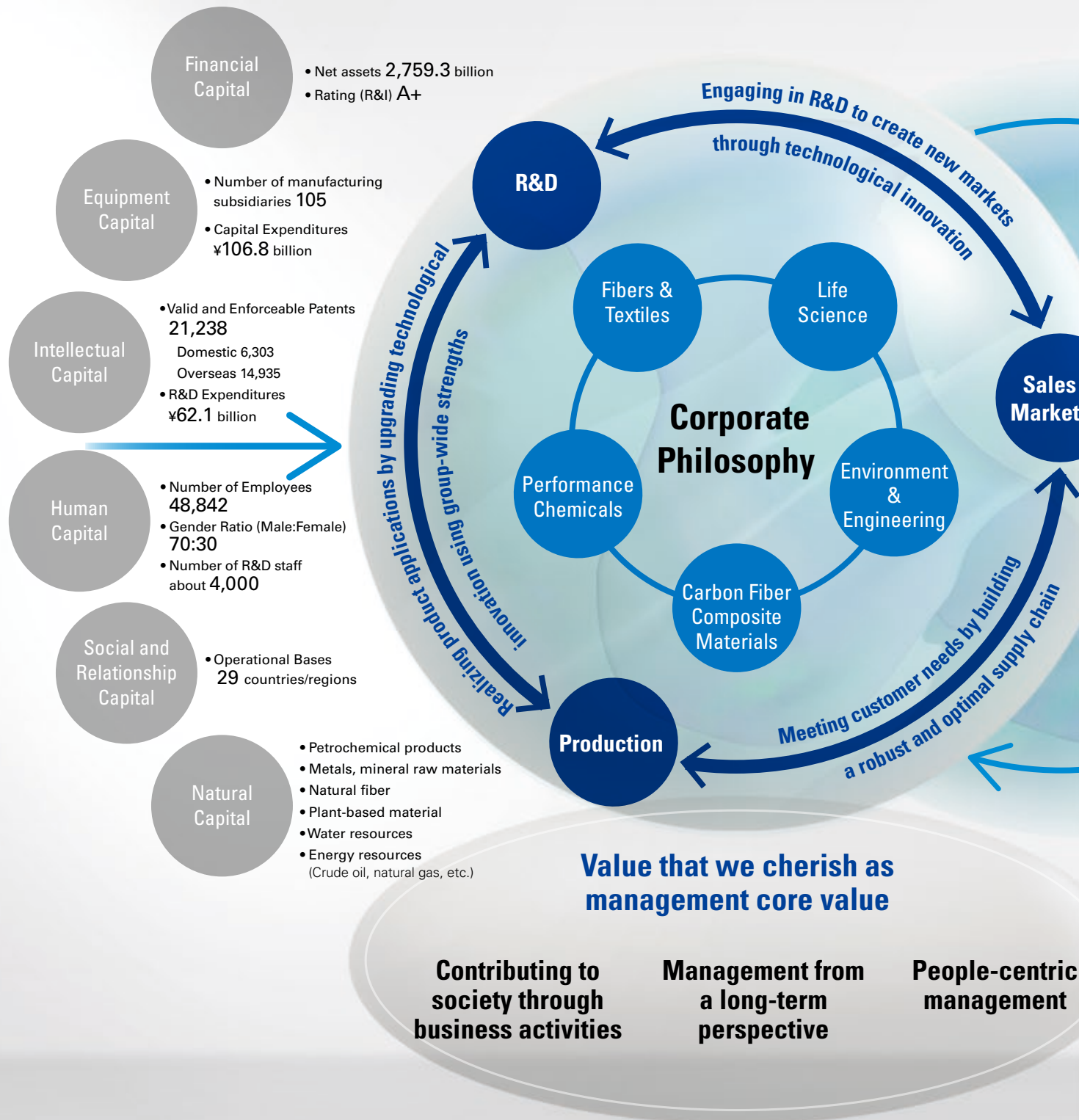
TORAYCA™ carbon fiber prepreg certified as a primary structural material for The Boeing Company's passenger aircraft

Copyright Boeing. All Rights Reserved.

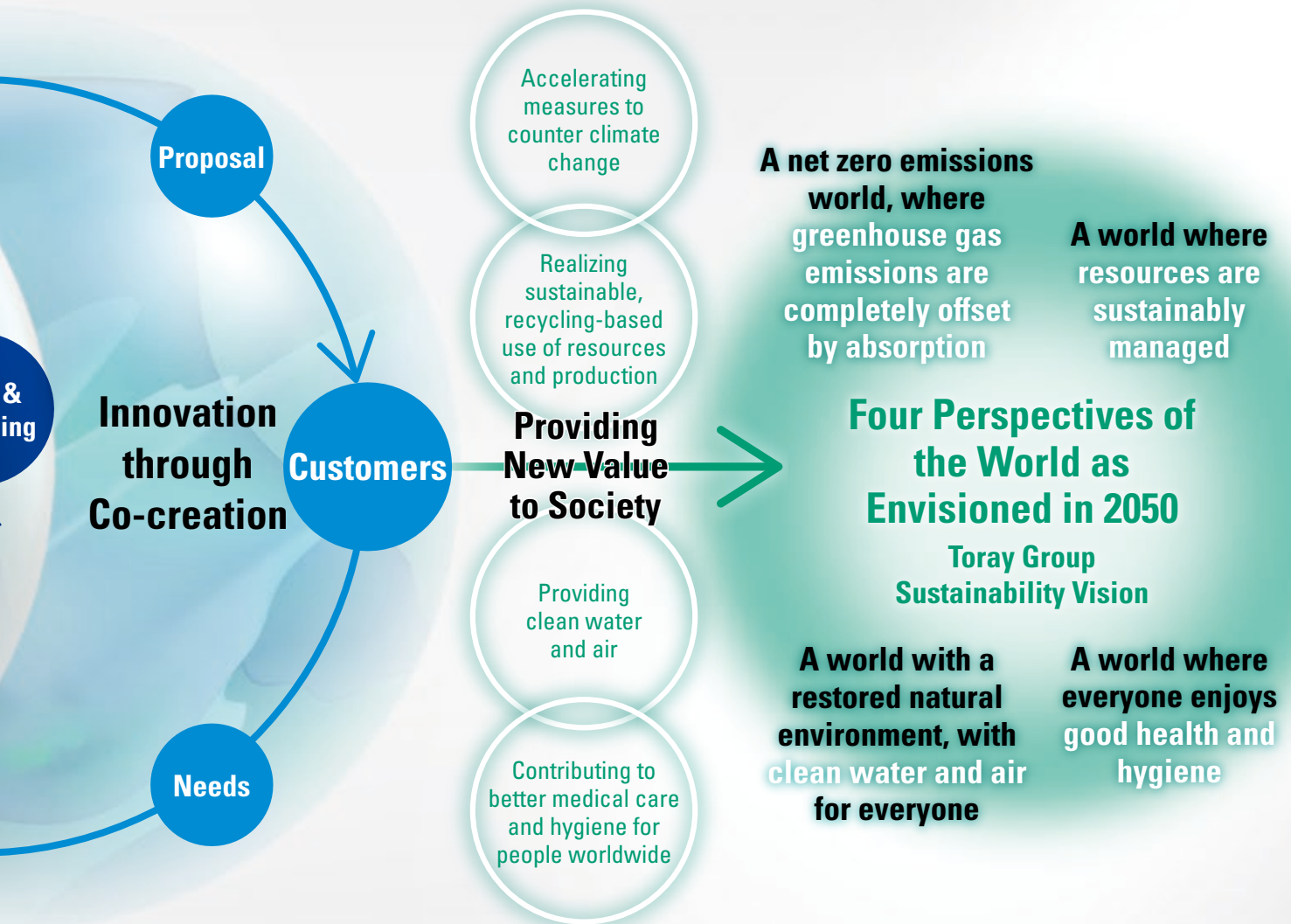


# The Toray Group Value Creation Process

In a bid to realize its corporate philosophy of “Contributing to society through the creation of new value with innovative ideas, technologies and products,” Toray Group will provide new value to society through a process of co-creation with customers, suppliers, and other parties that make up the supply chain, starting at the materials stage, while promoting mutual cooperation in R&D, sales and



marketing, and production, the key strengths of Toray Group, based on the core values of “contributing to society through business activities,” “management from a long-term perspective,” and “people-centric management.” At the same time, we will work to realize the four perspectives of the world as outlined in the Toray Group Sustainability Vision.





**Special Feature: Value Creation**  
**PET Film Used in MLCC Manufacturing Processes**  
**Innovation through Co-Creation with Customers**

Co-creation with customers has enabled Toray to refine PET films, which significantly impact the performance and quality of multilayer ceramic capacitors (MLCCs), items essential for electronic circuits. In addition, Toray has established the industry's first recycling system to contribute to customers' circular economy.



## Innovative Technologies That Expand Applications through the Ages

MLCCs are incorporated into various electronic circuits to eliminate noise from radio waves and stabilize power supply. MLCCs have become smaller, down to just a few hundred microns, along with the miniaturization of semiconductor devices and substrates, with roughly 800 used in a single smartphone, 1,400 in a PC, and 5,000 in an automobile. Toray PET (polyethylene terephthalate) film Lumirror™ boasts the world's No. 1 market share as a release film used in MLCC production.

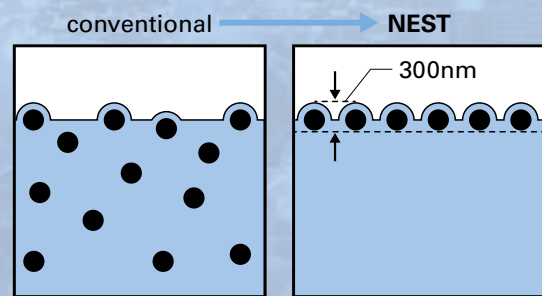
Toray was the first company in Japan to commercialize PET films with the release of Lumirror™ in 1959. Back then, PET films were mainly used for food packaging and labels, and there was no need to be concerned about the finely shaped surfaces. Later on, upgrading of functionality in PET films accelerated, as demand grew for its use as base film for magnetic tapes such as VHS and cassette tapes. This is because a smooth film was required to suppress noise and degradation for magnetic tapes, which are recording media with magnetic material applied to the surface of the film. In response, Toray developed the thin-film lamination

technology (NEST\*), which controls the smoothness and friction of film surfaces, enabling Toray to gain a large share of the magnetic tape market.

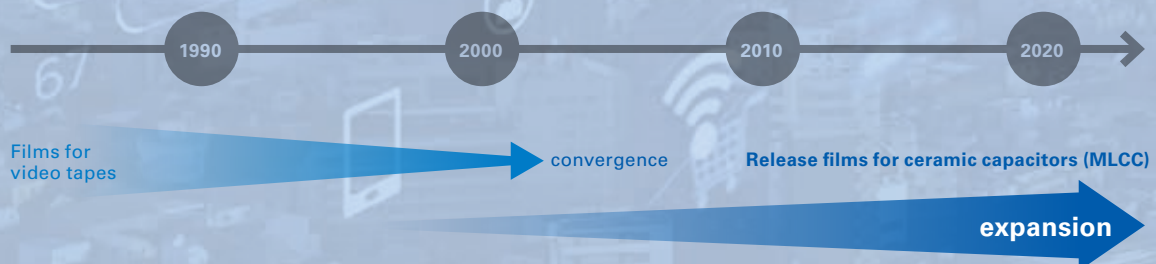
The market for these magnetic tapes was eventually replaced by DVDs, yet Toray PET films, combined with its nano-level controlled processing and production technology, have evolved into a very effective film for making the ceramic layer of MLCCs thinner and without irregularities. In addition, through co-creation with a major MLCC manufacturer, we have realized a system for collecting and reusing used PET films.

\*New Surface Topography (NEST): A technology that uses a thin layer of polymer containing particles on a surface to align the particles in a row and align the height of the protrusions.

### Extreme pursuit of film surface structure



Imaged figure of film cross-section



## Special Feature: Value Creation PET Film Used in MLCC Manufacturing Processes

### Mutual Collaboration among R&D, Sales & Marketing, and Production

#### R&D

#### Aiming to Realize Defect-Free Films

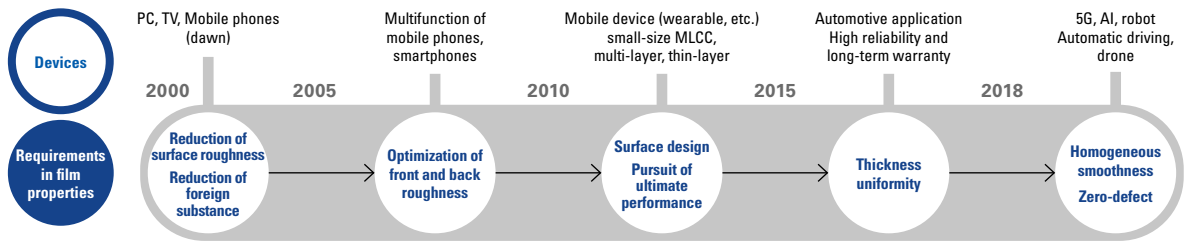
Toray PET films are used as a support and release film in the production processes for MLCC, which are manufactured through the layering of hundreds to thousands of ceramic insulation layers.

In recent years, there has been a noticeable trend toward thinner and increasingly laminated ceramic layers to meet the need for smaller and higher capacity MLCCs, mainly for mobile devices, and even the slightest defect in the film can significantly affect the performance and yield of MLCCs. To that end, there are major advantages to our unique technologies starting with NEST, which controls the structure of film surfaces

based on its track record of excellence in magnetic tape materials. Specifically, NEST is highly regarded for its ability to achieve both smooth surfaces and process suitability through co-extrusion and lamination technologies that form uniform surfaces, design and control technologies that reduce thickness irregularities, and technologies for uniformly winding smooth, non-slip films.

As for further pursuing the ultimate in PET film functionality and quality, we are working to achieve defect-free film ahead of our competitors, examining dust-free processes and developing ultra-clean raw materials free of all foreign substances.

Atsushi Matsunaga  
General Manager,  
Gifu Film Technical Department



#### Sales & Marketing

#### Creating a Value Chain Story with Our Customers

Toray's Sales and Marketing Department not only serves as the point of contact for customer requests for delivery, quality, technical development, but is also closely involved in exchanging information with component-related manufacturers and customer sales departments. Our sales and marketing team also aims to contribute to the innovation of customer products in terms of materials by exploring medium- to long-term market and product development trends from a variety of angles.

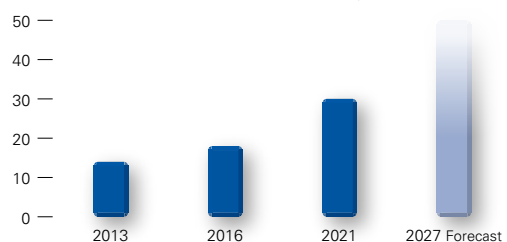
Toray's films business excels in process control in addition to technological capabilities that include surface smoothness and quality improvement. In order to demonstrate such strengths, the Sales and Marketing Department actively listens to customers, playing an important role in establishing a loop connecting customers with Toray's production, technology, and R&D

departments to align Toray with the development direction of customers. Toray sales and marketing staff are truly in the business of creating a value chain story together with customers. However, customer requests are often hinted at through casual day-to-day conversations, often leading to new developments and quality improvements. Contributing to customers in this way is another hidden strength of Toray's sales and marketing capabilities.

Koichi Tonegawa  
General Manager,  
Advanced Process  
Material Department



Sales of PET film for MLCC (Billions of yen/FY)





## Production

### Realizing & Stably Supplying Toray Quality Worldwide

Toray Group operates globally, producing PET films at six bases worldwide.

Against this backdrop, we have set up production systems in Japan, the Republic of Korea, and Malaysia for applications related to MLCC, for which demand remains brisk, and each company is pursuing the timely expansion of production capacity to ensure a stable supply to the supply chain.

In order to meet the ever-increasing quality requirements for films used in the production process, Toray production, sales, and engineering teams have worked together to improve the tangible and intangible

Teruhisa Kawata

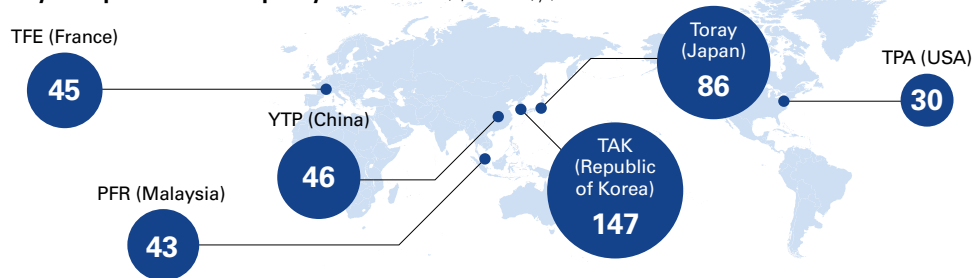
General Manager,  
Second Production Technical Department



aspects of the process, helping to improve yields in customer processes. Consequently, the world's smallest MLCC currently uses exclusively Toray films.

Furthermore, Toray aims to realize quality worldwide. To this end, we have introduced advanced technologies such as digital transformation (DX) into our production systems and are pursuing enhanced quality and process stability, deploying these technologies from the mother factories in Japan to each of our facilities. We will continue to pursue the highest level of quality and contribute to the market while valuing dialogue with our customers.

Toray Group Production Capacity of PET Film (1,000 tons/yr)



## Recycling

### Recognized for Environmental Contributions by Major MLCC Manufacturers

The recycling of films used for MLCC production process has been in the works for 10 years. However, the high level of quality required of the film has prevented us from launching concrete initiatives for quite a while, despite feeling the need to pursue this with our customers. Nevertheless, Toray has built up a track record of recycling and using products that are difficult to recover after use. As a result, we have

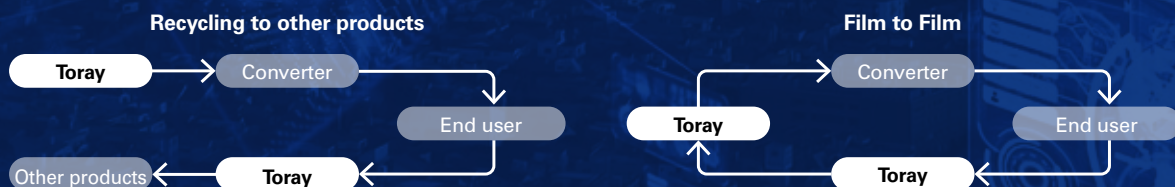
Tsuyoshi Hanamura

General Manager,  
Sustainable Film Business  
Planning Department



realized recycling through co-creation initiatives in customer manufacturing activities amid a growing social demand for a circular economy in recent years.

Toray has been recognized by customers for its significant contributions to the establishment of a recycling system in which used PET film is collected during MLCC manufacturing processes and reused as PET film for the same application.

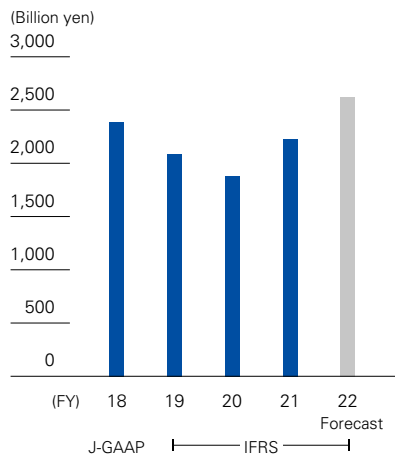




## Financial Highlights

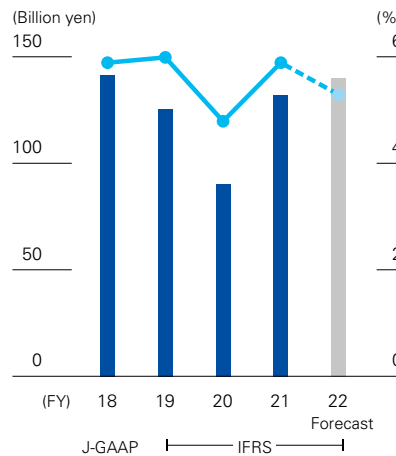
### Net Sales/Revenue

FY 2021  
Revenue (consolidated)  
**¥2,228.5 billion**



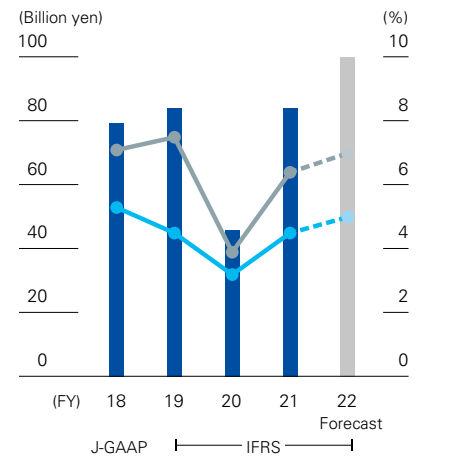
### Operating Income/ Core Operating Income, Operating Income to Net Sales/ Core Operating Income to Revenue

FY 2021  
Core Operating Income (consolidated)  
**¥132.1 billion**  
Core Operating Income to Revenue  
**5.9%**



### Net Income Attributable to Owners of Parent/Profit Attributable to Owners of Parent, ROA and ROE

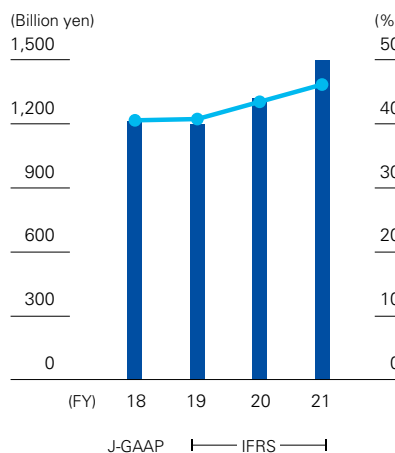
FY 2021  
Profit Attributable to Owners of Parent  
**¥84.2 billion**  
ROA **4.5%** ROE **6.4%**



■ Operating income/Core operating income (left axis) ■ Net income attributable to owners of parent/  
Profit attributable to owners of parent (left axis)  
● Operating income to net sales/  
Core operating income to revenue (right axis) ● ROA (right axis) ● ROE (right axis)

### Net Assets/Total Assets and Equity Ratio

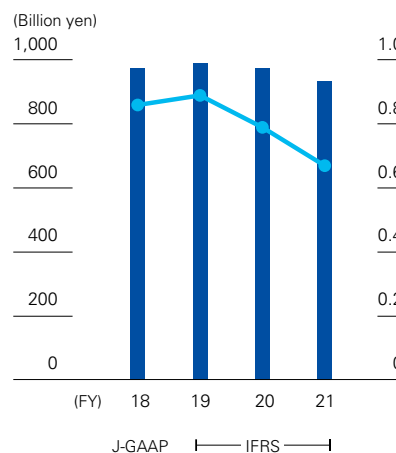
End of FY 2021  
Total Assets  
**¥1,499.6 billion**  
Equity Ratio  
**46.2%**



■ Net assets/Total assets (left axis)  
● Equity ratio (right axis)

### Interest-bearing Liabilities and Debt/equity Ratio

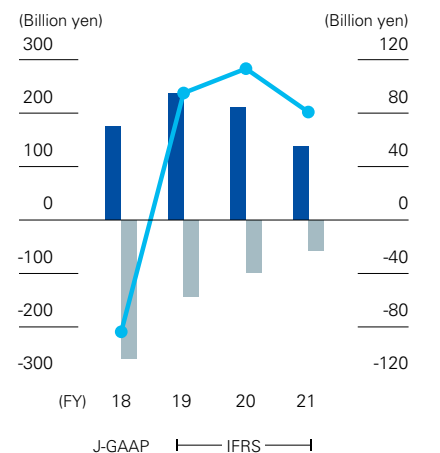
End of FY 2021  
Interest-bearing Liabilities  
**¥935.7 billion**  
Debt/equity Ratio  
**0.67**



■ Interest-bearing liabilities (left axis)  
● Debt/equity ratio (right axis)

### Cash Flows

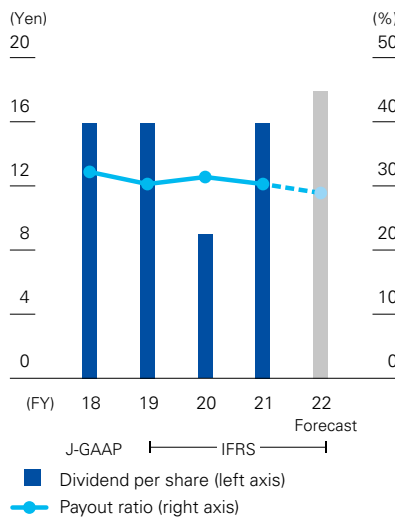
FY 2021  
Cash Flows from  
Operating Activities  
**¥138.3 billion**  
Free Cash Flow  
**¥81.1 billion**  
Cash Flows from  
Investing Activities  
**¥-57.2 billion**



■ Cash flows from operating activities (left axis)  
■ Cash flows from investing activities (left axis)  
● Free cash flow (right axis)

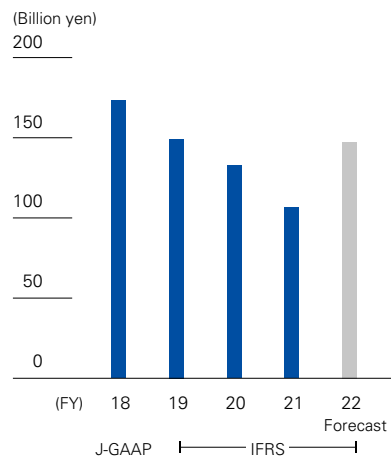
### Dividend per Share and Payout Ratio

FY 2021  
Dividend per Share  
**¥16.0**  
Payout Ratio  
**30.4%**



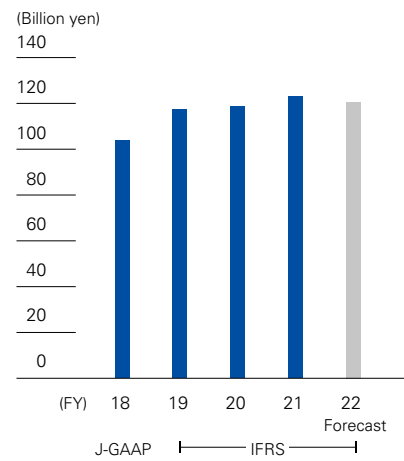
### Capital Expenditures

FY 2021  
Capital Expenditures  
**¥106.8 billion**



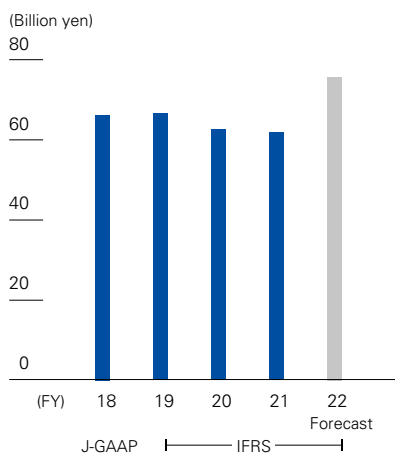
### Depreciation and Amortization

FY 2021  
Depreciation and Amortization  
**¥123.5 billion**



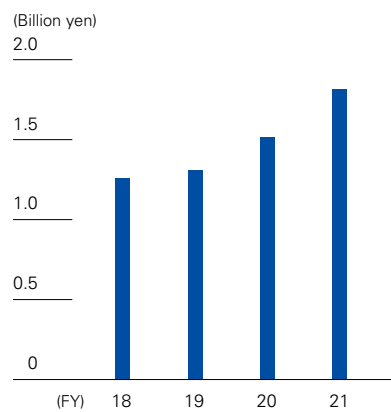
### R&D Expenses/Expenditures

FY 2021  
R&D Expenditures  
**¥62.1 billion**



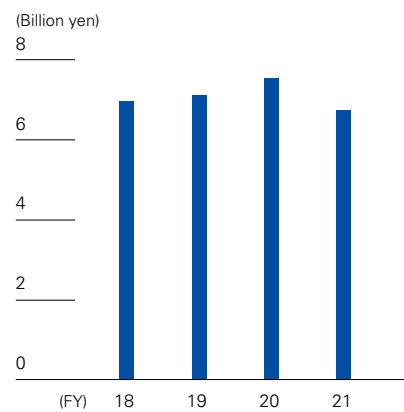
### Environmental Facility Investment

FY 2021  
Environmental Facility Investment  
**¥1.8 billion**



### Environmental Preservation Costs

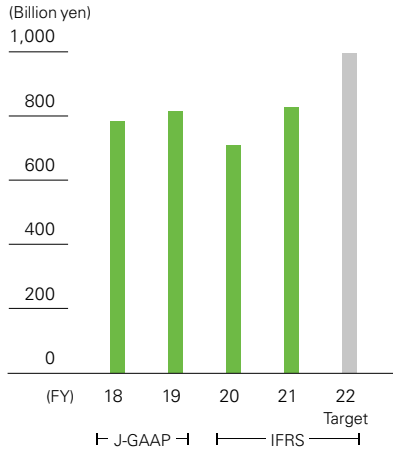
FY 2021  
Environmental Preservation Costs  
**¥6.8 billion**



# Non-Financial Highlights

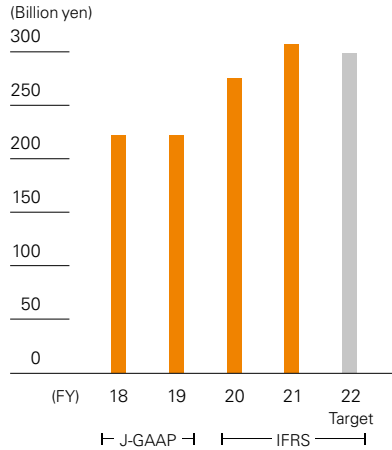
## Net Sales/Revenue of Green Innovation Businesses

FY 2021  
Revenue of Green Innovation Businesses  
**¥832.2 billion**



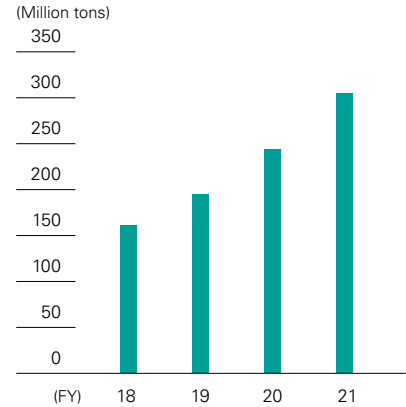
## Net Sales/Revenue of Life Innovation Businesses

FY 2021  
Revenue of Life Innovation Businesses  
**¥308.4 billion**



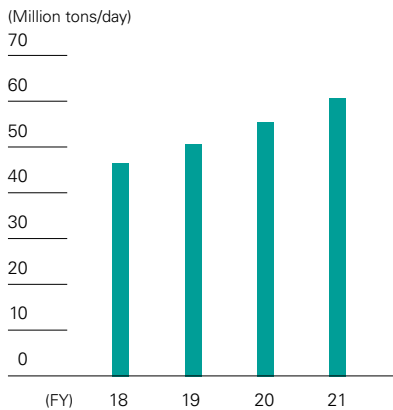
## Avoided CO<sub>2</sub> Emissions

FY 2021  
Avoided CO<sub>2</sub> Emissions  
**306 million tons**



## Contributed Annual Water Filtration Throughput

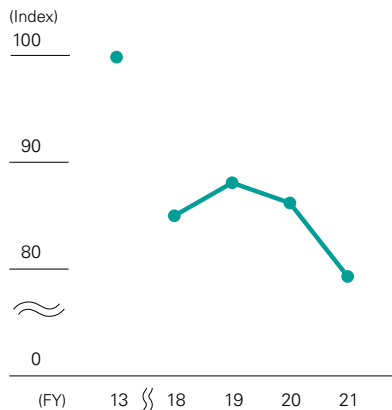
FY 2021  
Contributed Annual Water Filtration Throughput  
**61 million tons/day**



## Reduction of Greenhouse Gas Emissions per Unit of Sales/Revenue (%) (VS. FY 2013)

FY 2021  
Reduction of Greenhouse Gas Emissions per Unit of Revenue (%)  
**20.6%**

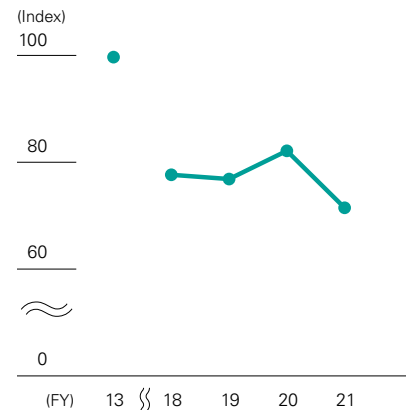
(FY 2013 is set to an index value of 100)



## Reduction of Comparative Water Usage per Unit of Sales/Revenue (%) (VS. FY 2013)

FY 2021  
Reduction of Comparative Water Usage per Unit of Revenue (%)  
**28.3%**

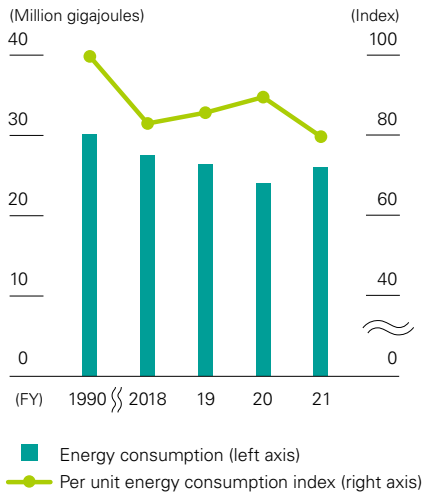
(FY 2013 is set to an index value of 100)





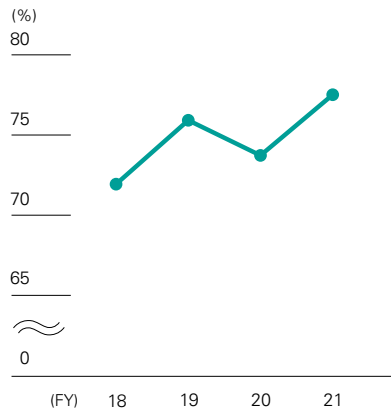
### Energy Consumption and per Unit Energy Consumption Index (VS. FY 1990 / Toray alone)

FY 2021  
Energy Consumption  
**26.1** Million gigajoules  
Per Unit Energy Consumption Index  
**79.9**  
(FY 1990 is set to an index value of 100)



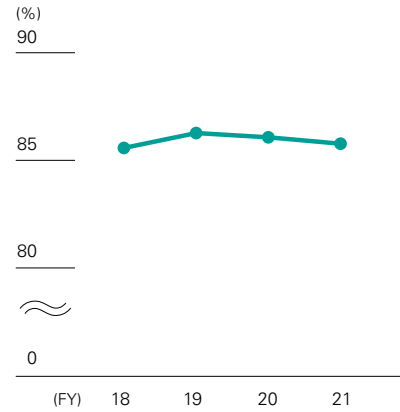
### Reduction of Atmospheric VOC Emissions (VS. FY 2000)

FY 2021  
Reduction of Atmospheric VOC Emissions  
**77.6%**



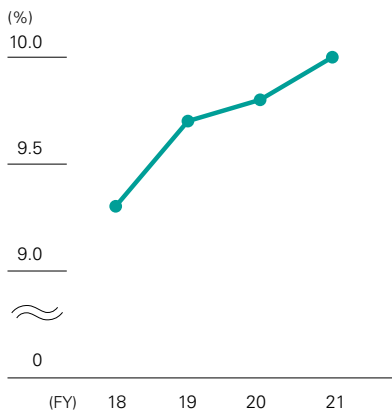
### Waste Recycling Rate

FY 2021  
Waste Recycling Rate  
**85.9%**



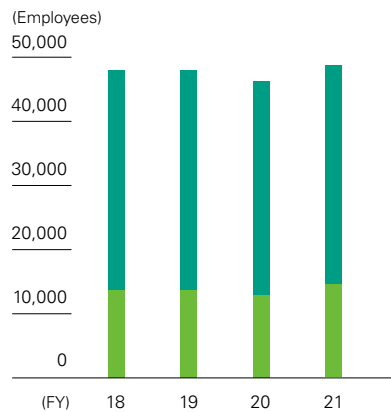
### Percentage of Women in Unit Manager or Higher Positions (Toray alone)

FY 2021  
Percentage of Women in Unit Manager or Higher Positions  
**10.0%**



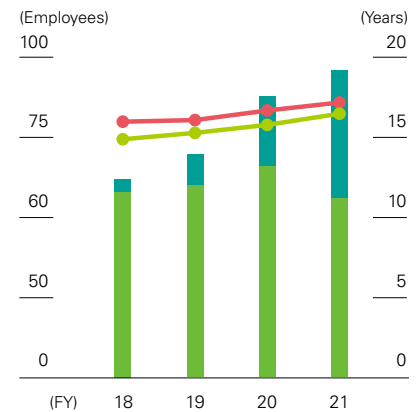
### Number of Employees by Gender

FY 2021  
Male **34,322** Female **14,520**



### Average Time on the Job and Number of Employees Taking Childcare Leave (Toray alone)

FY 2021  
Number of Employees Taking Childcare Leave: Male **40**  
Average Time on the Job: Male **16.5** years  
Number of Employees Taking Childcare Leave: Female **56**  
Average Time on the Job: Female **17.2** years



■ Male  
■ Female

Number of employees taking childcare leave (left axis)  
■ Male ■ Female  
Average time on the job (right axis)  
— Male — Female

# The Toray Group Mid- to Long-Term Strategy

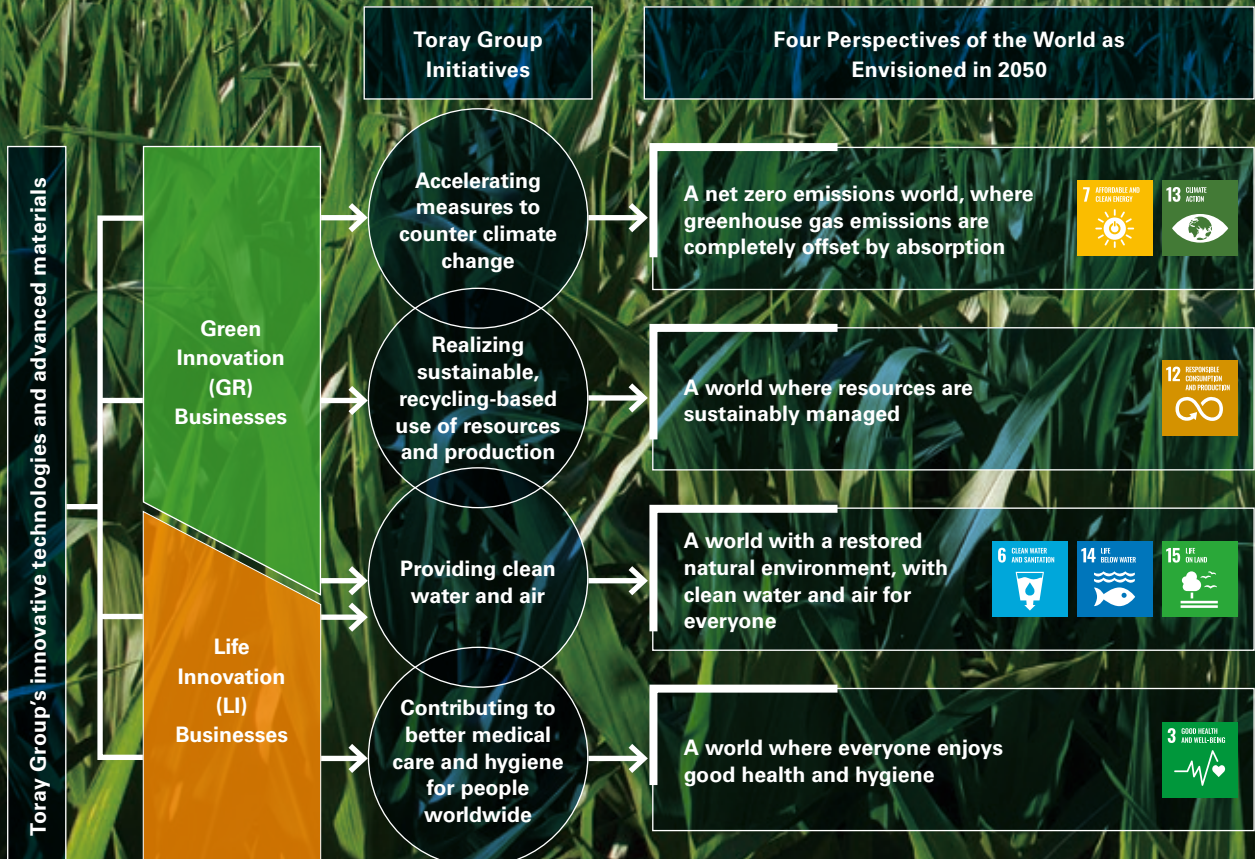
In order to realize the four perspectives of the world envisioned in 2050 as clarified in the Toray Group Sustainability Vision, Toray Group, in May 2020, announced its Long-Term Corporate vision, TORAY VISION 2030 (VISION 2030) as a milestone, along with the Medium-Term Management program, Project AP-G 2022 (AP-G 2022), which defines issues to be addressed over the three-year period from fiscal 2020 to fiscal 2022.

## Toray Group Sustainability Vision

Toray Group Sustainability Vision, formulated in July 2018, clarifies the four perspectives of the world in 2050 that Toray Group aims to achieve, as well as the initiatives that must be taken in order to realize them. More specifically, Toray Group's mission is to provide through innovative technologies and advanced materials the necessary solutions to the challenges facing the world in terms of both development and sustainability, including the issues of an ever-increasing global population, aging populations, climate change, water shortages, and resource depletion.

This means that the Group must not only ensure that its growth does not have a negative impact on global sustainability, but must also work closely with its business partners worldwide to help realize the co-creation of new value. As the basis for TORAY VISION 2030, Toray Group Sustainability Vision outlines the future direction of Toray Group and its contribution to addressing global issues, including the goals of the Paris Agreement and the United Nations Sustainable Development Goals (SDGs).

The World as Envisioned in 2050 and Toray Group Initiatives





## Long-Term Corporate Vision, TORAY VISION 2030

Toray Group aims to achieve sound, sustainable growth while promoting a business model transformation by accurately identifying changing industrial trends brought about by demographic factors, environmental issues, and technological innovation. With this in mind, Toray Group is promoting active investment to promote “global expansion in growth business fields.” To make this possible, the Group is working to maximize the value it can create over the medium- to long-term by “strengthening competitiveness” through continuous business model innovations and total cost reductions, and by “strengthening the

management foundation” to enable investment for growth based on enhanced capital investment efficiency and an improved financial structure.

Under TORAY VISION 2030, Toray Group is promoting Green Innovation (GR) and Life Innovation (LI) businesses growth across all of its segments while working to expand revenue and profit. In addition, we are actively engaged in the group-wide Future TORAY-2020s Project (FT Project). As part of this project, we are investing resources selectively in large-scale themes with the aim of achieving total revenue of around ¥1 trillion in the 2020s across all new businesses.

### Long-term strategies to achieve “sound, sustainable growth”

#### 1 Global expansion in growth business fields

- Promote GR businesses that help solve global environmental issues as well as resource and energy issues
- Promote LI businesses that contribute to better medical care and longevity, foster public health, and support personal safety

#### 2 Strengthening competitiveness

- Create new value through business advancement and high added-value creation, thereby providing solutions with a materials-oriented approach to customers and society
- Pursue dramatic cost reductions by setting challenging targets as well as strive to reduce environmental impact

#### 3 Strengthening the management foundation

- Improve cash flow and capital efficiency, and balance financial soundness and growth investment
- Conduct business structure reforms of low-growth and low-profitability businesses

#### FY 2030 Sustainability Targets

	FY 2013 Actual (baseline year) (J-GAAP)	FY 2030 Target (compared with FY 2013) (IFRS)
GR Net sales / Revenue	463.1 billion yen	4 fold
LI Net sales / Revenue	119.6 billion yen	6 fold
Avoided CO <sub>2</sub> emissions	38.4 million tons	8 fold
Contributed annual water filtration throughput	27.23 million tons/day	3 fold
Greenhouse gas emissions per unit of sales in production activities	3.37 thousand tons/billion yen	30% reduction
Water consumption per unit of sales in production activities	152 thousand tons/billion yen	30% reduction

## Progress Made with the Medium-Term Management Program

### Medium-Term Management Program, Project AP-G 2022

Under the Medium-Term Management Program, Project AP-G 2022 (AP-G 2022), which covers the three-year period from fiscal 2020 to fiscal 2022, the three basic strategies “global expansion in growth business fields,” “strengthening competitiveness,” and “strengthening the management foundation” were adopted toward the realization of the sound and sustainable growth, as mentioned in the Long-Term Corporate Vision, TORAY VISION 2030. Specifically, Toray Group is working to expand Green Innovation (GR) business, which will

contribute to solving global environmental, resource and energy issues, and Life Innovation (LI) business, which will contribute to better medical care, longevity, foster public health, and support personal safety. In addition, to ensure financial soundness, the Group is conducting business operations with even more consideration than before of the balance between profit, cash flow, and asset efficiency, while promoting the business structure reform of low-growth and low-profitability businesses.

Financial Targets	(Billion yen)			
	FY 2020 Actual	FY 2021 Actual	FY 2022 Forecast	FY 2022 Target
Revenue	1,883.6	2,228.5	2,600.0	2,600.0
Core Operating Income	90.3	132.1	130.0	180.0
Core Operating Margin	4.8%	5.9%	5.0%	7%
ROE	3.9%	6.4%	about 6%	about 9%
ROA	3.2%	4.5%	about 4%	about 7%
Free Cash Flow	113.7	81.1	Positive	120 billion yen or more (total of 3 years)
D/E Ratio	0.79	0.67	Management in accordance with the guideline (around 0.8)	around 0.8 (guideline)
Dividend Payout Ratio	31%	30%	30%	about 30%

### Basic Strategy **1** Global Expansion in Growth Business Fields

Utilizing Toray Group’s advanced materials and core technologies, under the strategy “global expansion in growth business fields” in AP-G 2022, Toray Group is working to drive GR and LI business expansion. Through the promotion of group-wide projects, we will contribute to solving global social issues by expanding our businesses.

#### Green Innovation (GR) Business Expansion

By expanding our Green Innovation (GR) business, we will contribute to solving global environmental issues and resource/energy problems. By allocating resources for

capital investment and R&D in a focused manner and for large-scale themes, the Group is targeting revenue in the GR business in fiscal 2022 of ¥1 trillion. The large-scale themes include lightweight materials, biomass-derived materials, recycled materials, separator films for lithium-ion secondary batteries, large tow carbon fibers for wind turbine blade applications, water treatment membranes, and hydrogen- and fuel cell-related materials.

In fiscal 2021, sales of carbon fibers for aircraft remained sluggish due to restrictions placed on movement by the COVID-19 pandemic. Nonetheless, driven by carbon fibers for wind turbine blades and water treatment membranes, GR business revenue increased



16.9% year on year, to ¥832.2 billion.

In the GR business, the water treatment business newly received a reverse osmosis (RO) membrane supply order for the Rabigh 3 Desalination Plant in the Kingdom of Saudi Arabia. This plant will be the largest using the RO membrane method in the country. As part of our resource recycling initiatives, we have launched Ecodear™ N510, a nylon 510 fiber that incorporates 100% biobased synthetic polymer content. We have also launched an eco-friendly waterless printing plate for flexible packaging materials.

Furthermore, in the field of hydrogen, in which growth is expected in the years to come, a Toray-developed polymer electrolyte membrane (PEM) for water electrolysis was selected as a joint project by eight companies for the New Energy and Industrial Technology Development Organization (NEDO)'s Green Innovation Funding Program, and a strategic partnership concluded with Siemens Energy K.K. In collaboration with the Yamanashi Prefectural Government and Tokyo Electric Power Company Holdings, Inc., the Company has also established Japan's first Power to Gas (P2G) business company.

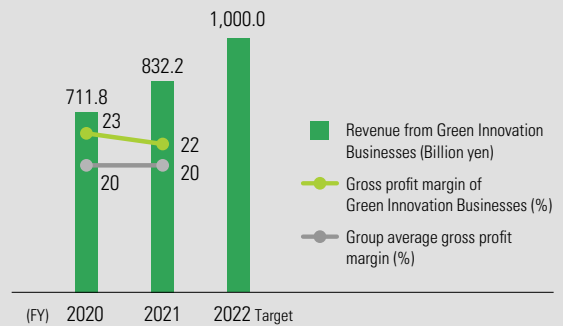
### Life Innovation (LI) Business Expansion

By expanding the Life Innovation (LI) business we will contribute to better medical care and longevity as well as to the promotion of public health. The Group is targeting sales revenue of ¥300 billion in its LI business in fiscal 2022.

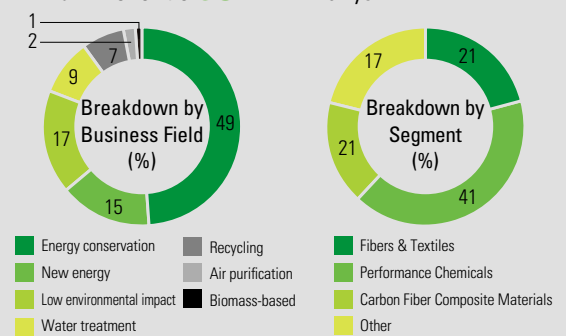
In fiscal 2021, LI business revenue increased by 11.6% year on year to ¥308.4 billion due to shipments of nonwoven fabrics for hygiene applications and sports-related materials remaining strong.

In the LI business, we have developed and launched sales of the FILTRYZER™ HDF hemodiafiltration device, which uses a hollow fiber membrane made of polymethyl methacrylate (PMMA) and boasts excellent biocompatibility. We have also developed a multi-item allergy testing biochip that can diagnose multiple allergies to a high degree of high sensitivity and accuracy using trace amounts of blood. In addition, having confirmed the heat stress reduction effect of disposable, highly breathable personal protective clothing, we contributed to measures to prevent heatstroke and other conditions at manufacturing and construction sites.

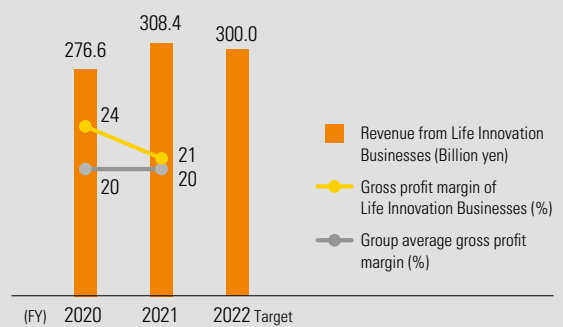
#### Revenue from Green Innovation Businesses



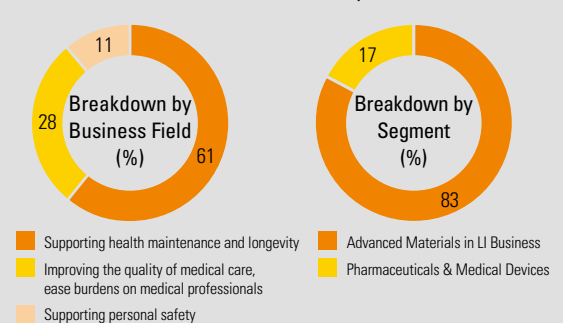
#### FY 2021 Revenue 832.2 Billion yen



#### Revenue from Life Innovation Businesses



#### FY 2021 Revenue 308.4 Billion yen



## Progress Made with the Medium-Term Management Program

### New Business Creation

With regard to the Future TORAY-2020s Project (FT Project)—a group-wide project designed to accelerate the development of large-scale themes and the construction of business models for the next growth stage under AP-G 2022—in the GR field we are promoting themes that include hydrogen- and fuel cell-related materials, biomass utilization products and process technologies as well as environmentally-friendly printing solutions. We are also promoting the development of applications for a porous carbon fiber that can be used in the separation layers that support the structure

of gas separation membranes to, for example, separate CO<sub>2</sub> and biogas as well as hydrogen. Having in the LI field created TRK-950, a therapeutic antibody drug for cancers, clinical trials for multiple cancer types are currently under way in Europe, the United States, and Japan. We have also filed applications with Japan's Ministry of Health, Labour and Welfare to obtain manufacturing and marketing approval for an in-vitro diagnostic reagent test that measures protein concentration changes in the blood of pancreatic cancer patients.

## Basic Strategy [2] Strengthening Competitiveness

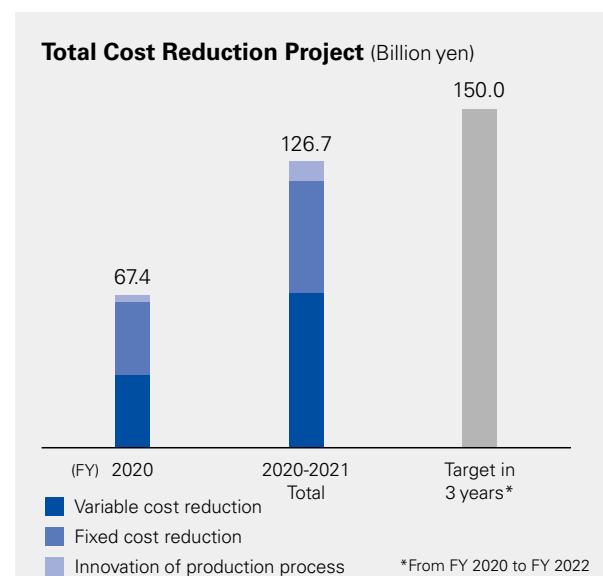
To strengthen competitiveness, the Group is working on three priority issues: total cost reduction; business advancement and high added-value creation; and enhancing workplace competency in sales & marketing and production.

For total cost reduction, Total Cost Reduction Project (NTC Project) is promoted across the Group, and the target is to reduce ¥150 billion over a three-year period through activities to reduce variable and fixed costs and bring about innovation in production processes (¥100 billion in variable costs, ¥35 billion in production fixed costs, and ¥15 billion in innovation of production processes). In fiscal 2021, the total amounted to ¥59.3 billion, and to ¥126.7 billion over the two years from fiscal 2020 (a progress rate of 84%). Breaking it down, over the two years we achieved reductions of ¥68.3 billion in variable costs, ¥49.4 billion in production fixed costs, and ¥8.9 billion in innovation of production processes.

As for business advancement and high added-value creation, the Group is working not only to achieve advancement in products but also to add high value by integrating and combining products and services, to create new value through alliances, and to pursue innovation in the value chain by utilizing Information and Communication Technology (ICT).

In terms of enhancing our workplace competency in sales & marketing, we are building a group-wide information-sharing system covering end-customer

requests, market demands, and needs by product application, while devising ways to strengthen our ability to make comprehensive sales proposals and resolve problems. We are also utilizing digital tools as we work to improve operational efficiency and enhance the sophistication of our customer communications. To enhance our workplace competency in production, aside from continually improving labor productivity, we are focusing on preventing the occurrence of and improving our responsiveness to production problems, promoting the compilation of manuals, and extending our global supply chain.



## Basic Strategy [3] Strengthening the Management Foundation

In strengthening the management foundation, two themes are promoted: strengthening the financial structure by improving cash efficiency; and the business structure reform of low-growth and low-profitability businesses.

With regard to strengthening the financial structure by improving cash efficiency, in aiming toward sound, sustainable growth we will be more strongly aware than ever of cash flow, which is the certainty of a return on investment, while focusing on optimizing inventory and shortening payback periods (cash conversion cycle, CCC). As a result, free cash flow in fiscal 2021 was positive at ¥81.1 billion, and the two-year cumulative total amounted to ¥194.8 billion. In addition, although we had set a D/E ratio of “around 0.8” as a guideline, despite the decrease in interest-bearing debt the D/E ratio was 0.67 due to an increase in owner’s equity.

Concerning the business structure reform of low-growth and low-profitability businesses, we select those businesses and companies that have fallen below the standard values for both growth potential and profitability. After ascertaining the position and business environment of each business, and conducting numerical analyses, we discuss and implementing reforms to our business structure and organizational structure to divest ourselves of them. For example, in the fibers and textile business we are downsizing the polyester/cotton blended textile (T/C) business, consolidating the manufacturing bases in the Japanese fibers and textiles business, carrying out the development of the market for casual wear for the Japanese-style clothing business, and outsourcing the Russell business (knit fabric used for shapewear, back support belt applications, etc.).

## Initiatives for Sustainability

With regard to sustainability targets, revenue from the LI business is steadily increasing, and we have almost reached the target level for fiscal 2022. The GR business got off to a slow start due to the impact of the COVID-19 pandemic but recovered in fiscal 2021. The amount of avoided CO<sub>2</sub> emissions was 8.0 times that of fiscal 2013, achieving the target for fiscal 2030 far ahead of schedule.

The contributed annual water filtration throughput is also steadily increasing. Improvements in GHG emissions and water consumption per unit of revenue in Toray Group production activities also exceeded targets for fiscal 2022.

We will continue to focus on carbon neutralization and our contribution to a circular economy in the years to come.

Sustainability Targets	FY 2013 Actual (baseline year) (J-GAAP)	FY 2021 Actual (compared with FY 2013) (IFRS)	FY 2022 Target (compared with FY 2013) (IFRS)	FY 2030 Target (compared with FY 2013) (IFRS)
GR Net sales / Revenue	463.1 billion yen	832.2 billion yen (1.8 fold)	1,000.0 billion yen (2.2 fold)	4 fold
LI Net sales / Revenue	119.6 billion yen	308.4 billion yen (2.6 fold)	300.0 billion yen (2.5 fold)	6 fold
Avoided CO <sub>2</sub> emissions	38.45 million tons	8.0 fold	5.3 fold	8 fold
Contributed Annual water filtration throughput	27.23 million tons/day	2.2 fold	2.4 fold	3 fold
Greenhouse gas emissions per unit of sales in production activities	3.37 thousand tons/billion yen	2.67 thousand tons/billion yen (21% reduction)	20% reduction	30% reduction
Water consumption per unit of sales in production activities	152 thousand tons/billion yen	109 thousand tons/billion yen (28% reduction)	25% reduction	30% reduction



## Financial Strategy

### Message from Corporate Vice President, Finance & Controller's Division

We will steadily make necessary investments for growth through managing cash flow and return thoroughly.

#### Masahiko Okamoto

Member of the Board  
Corporate Vice President,  
Finance & Controller's Division



## Basic Policies of the Financial Strategy & Medium-Term Management Program

The basic policies of Toray's financial strategy are to both expand its businesses and strengthen its financial structure.

Under the Medium-Term Management Program, Project AP-G 2022 (AP-G 2022), Toray planned to allocate a total of ¥500 billion in capital expenditures and ¥220 billion in R&D expenditures over a three-year period in order to pursue global business expansion in growth business fields centered on the Green Innovation (GR) business and Life Innovation (LI) business. On the other hand, to strengthen its financial structure, the Company aimed to

generate more than ¥120 billion in free cash flow over a three-year period and set an even stricter D/E ratio guideline of around 0.8 to enhance its financial discipline.

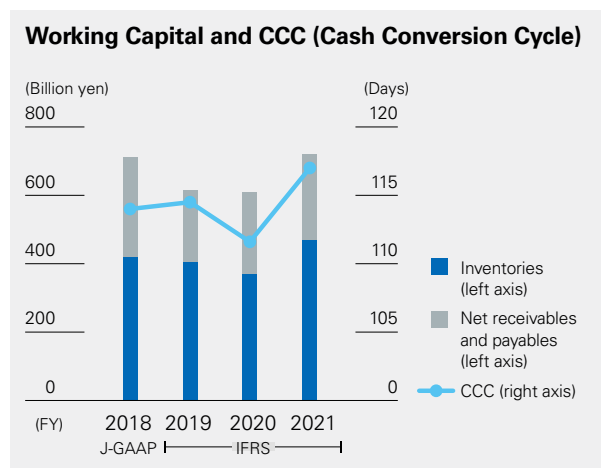
Currently, both capital expenditures and R&D expenditures are expected to fall short of the three-year plan, partly due to the impact of the COVID-19 pandemic, but we are steadily engaging in capital investment and R&D necessary for greater growth. In addition, free cash flow has remained above target, and the D/E ratio has remained below the guideline.

## Measures to Strengthen Financial Structure

### 1. Enhance Cash Flow Management

In order to improve cash flow company-wide, the Company introduced a system to manage free cash flow for each division in fiscal 2020, in which each division autonomously manages cash inflows from revenue and core operating income as well as cash outflows for capital

expenditures and changes in working capital such as inventories. In addition, the Company continues to implement the "3C-i (Cash Conversion Cycle Improvement) Activity" in order to reduce working capital. In addition, we are introducing and expanding cash pooling in each of our overseas regions and returning surplus funds through dividends to improve global capital efficiency.



### 2. Increase Certainty of Return on Capital Investment

Toray engages in economic evaluation of capital investment plans by conducting checks using the internal rate of return (IRR) method and the payback period method to determine whether the Company's investments are economically feasible enough to achieve ROA and ROE targets. After capital investment is made, Toray conducts regular follow-ups, as well as discusses how to make up for any shortfall in the original plan and implements countermeasures.

Toray has reviewed its capital investment management and operation methods since fiscal 2020. The Company identifies risks from every angle, starting from the conceptual stage of a capital investment, and thoroughly manages risks from the execution of the proposed plan to the recovery of investment to ensure that the planned return on invested capital is secured.

### 3. Business Structure Reforms of Low-Growth, Low-Profitability Businesses

To improve company-wide profitability and capital

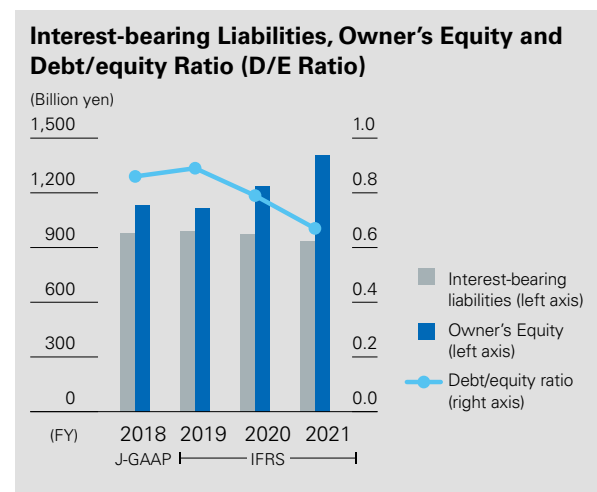
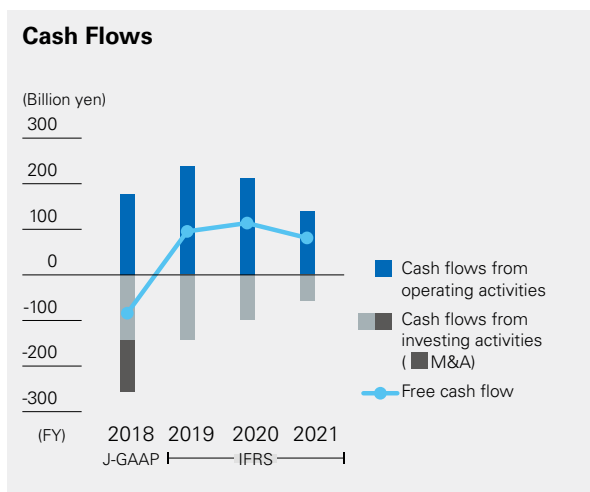
efficiency, Toray has introduced return on invested capital (ROIC) as a profitability indicator for screening low-growth and low-profitability businesses. The Company calculates ROIC for each business and product, and for businesses and products where ROIC is below the cost of capital and growth potential is low, the Executive Committee discusses how to improve profitability and growth potential through restructuring and implements measures to restore the original profitability of the business.

## Cash Flows and Balance Sheets

Free cash flow for fiscal 2021 was ¥81.1 billion (down ¥32.6 billion year on year), but the Company secured a high level of cash flow in similar fashion to the previous year. While core operating income increased to ¥132.1 billion (up ¥41.8 billion year on year), working capital also rose mainly due to an increase in inventories caused by reduction in automobile production and supply chain disruptions, resulting in a cash flows from operating activities of ¥138.3 billion (down ¥73.3 billion year on year). We will continue to strengthen working capital management through 3C-i activities. In addition, net cash used in investing activities amounted to ¥57.2

billion (an increase of ¥40.7 billion year on year), since while Toray made the necessary capital investments for growth based on strict project selection, it sold assets no longer worth holding. For fiscal 2022, Toray plans to maintain positive free cash flow by working to increase core operating income and thoroughly managing working capital and capital expenditures.

The D/E ratio for fiscal 2021 was 0.67, a decrease of 0.12 from the previous fiscal year due to an increase in owner's equity and a decrease in interest-bearing liabilities, which is below the guideline of around 0.8, indicating that financial soundness continues to improve.



## Shareholder Returns

Toray considers the appropriate distribution of profits to shareholders to be an important management issue, and its basic policy is to pay appropriate dividends by comprehensively taking into account business earnings

trends, financial structure, and the securing of retained earnings necessary for future growth. Under AP-G 2022, Toray aims to continuously hike dividends, targeting a dividend payout ratio of about 30%.

# Initiatives for Global Environmental Issues



## Toward Achieving Carbon Neutrality by 2050

Toray Group is working to expand the Green Innovation (GR) business, which has been engaged so far in renewable energy, hydrogen, and materials related to electrification, and to develop products that help absorb greenhouse gases (GHGs), such as CO<sub>2</sub> separation membranes, in an effort to make a contribution to reducing GHG emissions throughout society and in achieving carbon neutrality by 2050 for society as a whole. Also, the expansion of these GR businesses will be returned to Toray Group as sustainable energy and raw materials to reduce GHG emissions. In addition, the Group will promote further reduction of GHG emissions (Scope 1 and 2) through innovative processes and CO<sub>2</sub> recycling technology that utilize CO<sub>2</sub> as a resource, aiming to become carbon neutral in its business operations in 2050. The Group will also work to reduce Scope 3 GHG emissions for the purpose of decreasing emissions throughout the supply chain.

Moreover, the Group assumes that realizing carbon

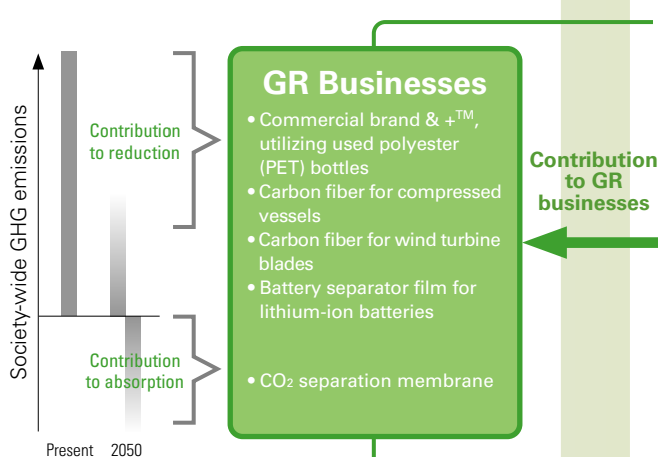
neutrality in 2050 will require transformations based on unprecedented ideas, as well as discontinuous technological innovations, and that it will be necessary to engage in these efforts, not simply as an individual company, but in unison with industries, the Japanese government and society as a whole. Toray Group engages in discussions and dialogue with the economic organizations and industry associations in which it holds membership, as well as the government and other entities, and works in cooperation with these partners towards realizing carbon neutrality in 2050 and the goals of the Paris Agreement.

### <Major organizations and their committees and subcommittees (examples) in which the Group holds membership>

- Nippon Keidanren (Japan Business Federation): Subcommittee on Global Environment, Committee on Environment
- Japan Association of Corporate Executives: Environment and Energy Committee
- Japan Chemical Industry Association: Technical Affairs Committee
- Japan Chemical Fibers Association

### Increase the contribution to GHG reduction through GR Businesses

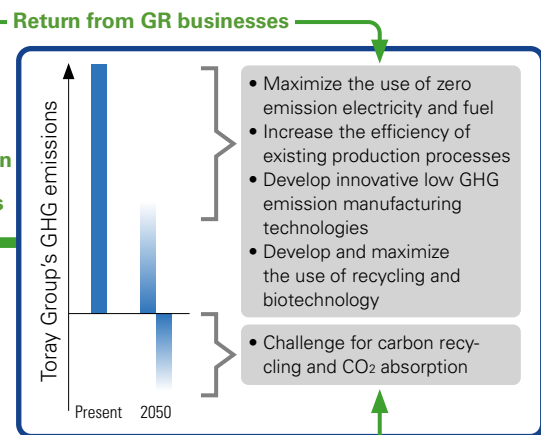
Support the advancement of carbon-neutral technologies in the GR business, including renewable energy, hydrogen, and materials related to electrification.



Contributing to the realization of a carbon-neutral society

### Introduction of GHG reduction technologies in business operations

Reduce total emissions through the use of sustainable energy and raw materials, innovative processes, carbon recycling technologies, etc.



Aiming to become carbon neutral in the company's business operations





## TCFD Initiatives

### Governance System Related to Climate Change

Through the Sustainability Committee chaired by the President, Toray Group draws up overall medium- to long-term roadmaps and action plans for achieving the Toray Group Sustainability Vision, and deliberates on annual action plans for the Green Innovation Business Expansion Project (GR Project), the Life Innovation Business Expansion Project (LI Project), and the Challenge 30 Project, and oversees and manages execution issues and the status of initiatives. The Sustainability Committee is additionally responsible for overseeing the implementation of efforts to address climate change and discusses important policy matters and topics related to climate change. It also collaborates with the CSR Committee, Risk Management Committee, Safety, Health and Environment Committee, and Technology Committee to address climate change-related issues for the entire Toray Group.

At least once a year, the Board of Directors receives a report summarizing the matters discussed by each group-wide committee, and issues guidance to the committees and makes decisions. When formulating business strategies and making management decisions, the Board of Directors considers climate change-related issues as one of the important elements of its overall deliberations and decision-making.

### Impact Analysis of Climate Change

Toray Group announced its support for the TCFD recommendations in May 2019. Following its announcement,

the Group conducted scenario analyses regarding the potential impacts of the opportunities and risks of climate change. The Paris Agreement target is to limit global warming to well below 2°C, preferably to 1.5°C, compared to pre-industrial levels. Looking to help achieve this target and build a decarbonized society, Toray Group primarily analyzed the 1.5°C increase scenario, but also considered the 2°C increase scenario. The Group also looked at the 4°C increase scenario assuming insufficient progress on efforts to ameliorate global climate change. Each analysis covered the period from 2030 to 2050.

### Risk Management

On climate change, Toray Group seeks to contribute to solving environmental issues through its business and considers the reduction of GHG emissions to be extremely important to both stakeholders and Toray Group, and has therefore established KPIs that it uses in its efforts to reduce risk. Toray Group addresses group-wide risks including those associated with climate change under the direction of the Risk Management Committee. Specifically, the Group conducts periodic risk management (priority risk mitigation activities) and routine risk management (monitoring trends in and outside of Japan and through risk detection, assessment, and monitoring).

### KPIs and Targets

Toray Group has disclosed its sustainability targets for fiscal 2030 and fiscal 2022 along with the results related to these targets achieved in fiscal 2021 (see p.29).

Main opportunities, risks, and responses related to climate change (excerpts*1)				*1 Excerpts from Toray Group TCFD Report 2021		
Social change	Main risks, opportunities		Responses by Toray Group	Magnitude of opportunity, risk <sup>2</sup>		
				1.5°C	2°C	4°C
Increase in ratio of renewable energy	<b>Opportunities</b>	<ul style="list-style-type: none"> <li>Growth of renewable energy-related business</li> <li>Growth of storage battery-related business</li> </ul>	<ul style="list-style-type: none"> <li>Carbon fiber for wind turbine blades</li> <li>Battery separator film</li> </ul> <div style="text-align: right;"><b>GR</b></div>	large		
	<b>Risks</b>	<ul style="list-style-type: none"> <li>Increased electricity costs</li> </ul>	<ul style="list-style-type: none"> <li>Energy conservation initiatives</li> </ul>			
Establishment and raising of carbon taxes and GHG emissions reduction targets	<b>Opportunities</b>	<ul style="list-style-type: none"> <li>Growth of energy conservation-related business</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight materials</li> <li>Insulating and heat shielding products</li> <li>Functional garments</li> </ul> <div style="text-align: right;"><b>GR</b> <b>LI</b></div>	large		
	<b>Risks</b>	<ul style="list-style-type: none"> <li>Carbon tax burden, increased procurement costs for fossil-based raw materials and fuels</li> </ul>	<ul style="list-style-type: none"> <li>Reduce GHG emissions</li> </ul>			

**GR** : GR products **LI** : LI products

\*2 The magnitude of the impact was assessed to be large, moderate or small. Where the magnitude of the impact on a given item varies according to the climate scenario, the gradient indicates the particular scenario where the impact is greater.

## Initiatives for Global Environmental Issues



### Status of Environmental Management Initiatives

#### Promoting Life Cycle Management

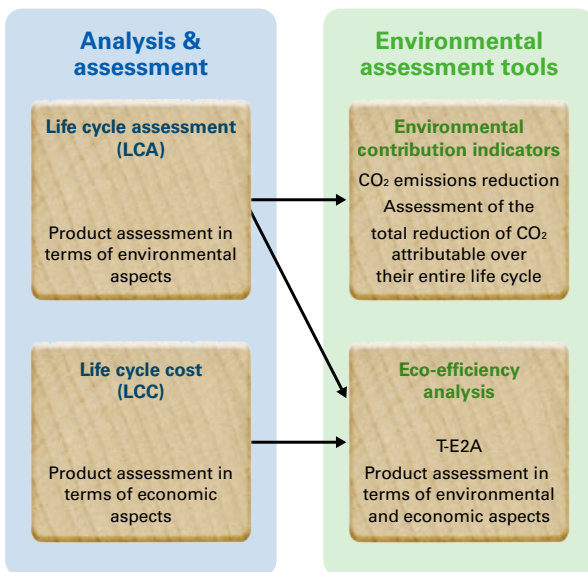
In addressing global environmental issues, it is vital to consider the entire life cycle of products and services in order to reduce environmental impact while also delivering improved economic and social value. In this respect, Toray Group practices life cycle management (LCM).

LCM is the basis for Green Innovation (GR) products, and the Group has adopted life cycle assessment\*1 and the Toray Eco-Efficiency Analysis (T-E2A)\*2 tool and is working to establish LCM as a tool to measure CO<sub>2</sub> reduction in the entire life cycle of products and services. Those products that are able to demonstrate objective evidence of providing an effective solution for global environmental issues are certified as GR products, only after the products are subjected to a two-stage screening process by the divisional committees and the group-wide Green Innovation Certification Committee.

\*1 Life cycle assessment is a method for quantitatively assessing the resources that have gone into a product and the impact the product will have on the environment and ecosystems over its life cycle.

\*2 T-E2A is an environmental analysis tool developed by Toray Industries, Inc. 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



#### Environmental Accounting

Toray has been practicing environmental accounting since 1999, to track investments and gauge their cost effectiveness. The value of environmental facility investments in fiscal 2021 amounted to ¥1.82 billion, an increase of

¥300 million over the previous fiscal year, while environmental preservation costs amounted to ¥6.75 billion, a decline of ¥810 million.

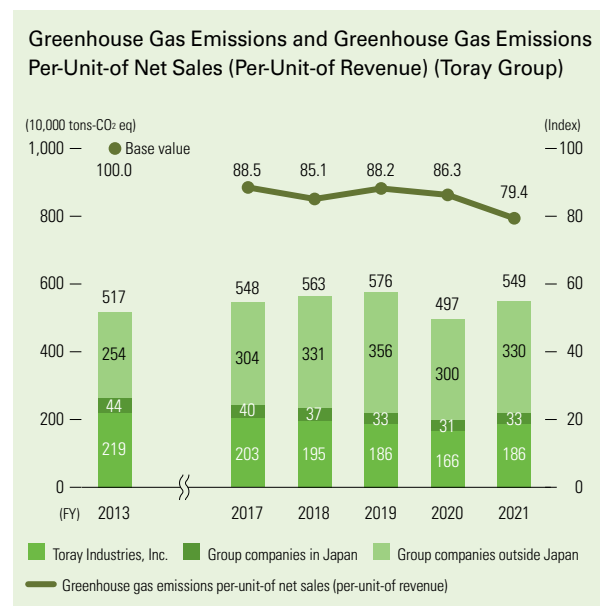
#### Greenhouse Gas Emission Reduction Initiatives

As its greenhouse gas emissions reduction target for CSR Roadmap 2022, Toray Group presented the goal of reducing greenhouse gas emissions per unit of revenue by 20%\* compared with fiscal 2013 levels for the entire Toray Group on a continuous basis through fiscal 2022, for which purpose it has implemented systematic reduction measures.

Greenhouse gas emissions for the entire Toray Group during fiscal 2021 increased 10.5% over the previous fiscal year to 5.49 million tons-CO<sub>2</sub> due to a recovery in production volumes. Meanwhile, the Group minimized greenhouse gas emissions from these higher production volumes versus the increase in revenue, thereby maintaining greenhouse gas emissions per unit of revenue at 20.6% below the fiscal 2013 levels.

In fiscal 2021, greenhouse gas emissions from Toray and its group companies in Japan also increased 11.7% over the previous fiscal year due to the recovery in production volumes, whereas greenhouse gas emissions per-unit-of-revenue improved 7.9% over the previous fiscal year, ultimately falling 26.4% below fiscal 2013 levels.

\* For Scope 1 and 2



## Installing Renewable Energy Systems

Toray Group is systematically installing renewable energy systems. The Group installed a solar power generation system at Toray Plastics Precision (Zhongshan) Ltd., in fiscal 2020, and solar power generation systems at Seta Plant 3 and at Toray Precision Co., Ltd., in fiscal 2021, each of which is currently in operation. In addition, the Tokai Plant began co-combusting sludge fuel as boiler fuel from fiscal 2017.

In practice, the Group also switched over all power consumed by Toray's headquarters to 100% renewable energy starting in April 2022. This move is expected to reduce greenhouse gas emissions by an estimated 1,500 tons-CO<sub>2</sub> annually on a global basis.

## Energy Conservation Measures

Toray is vigorously working on energy conservation activities with the goal of reducing its per-unit energy consumption\*<sup>1</sup> by 2% annually. In fiscal 2021, a recovery in production volumes led to an 8.6% increase in energy consumption over the previous fiscal year. Per-unit energy consumption, however, improved 12.1% over the previous fiscal year due to the recovery in production volumes. Compared with fiscal 1990, the baseline year for reductions in per-unit energy consumption, this is an improvement of 20.1%.

Toray Group organizes energy conservation teams to help carry out annual energy conservation diagnostics at plants in Toray and its group companies around the

world. In fiscal 2021, these activities were conducted at two of Toray's plants and three group company plants in Japan. The energy savings thereof effectively reduced greenhouse gas emissions by approximately 3,400 tons-CO<sub>2</sub> per year.

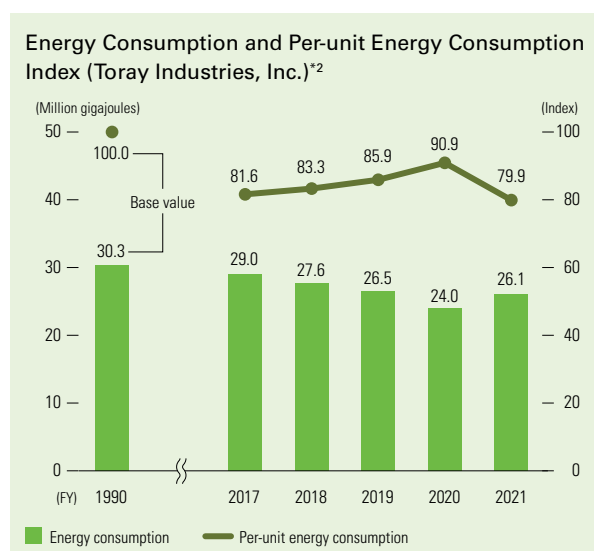
\*1 Energy consumption per converted production volume

## Biodiversity Initiatives

Toray Group views conservation of biodiversity as a critical global environmental issue that is of equal importance to reducing greenhouse gas emissions. As part of its environmental risk investigations conducted at the time of product safety review and capital investments for all products, Toray Group employs an environmental assessment checklists to verify that regulated substances released through exhaust gas, wastewater, waste products, and other means during the manufacturing stage remain below legal standards. This initiative serves to assess the Group's impact on biodiversity, and aims to realize a sustainable society.

As one of its biodiversity conservation initiatives, the Group conducts periodic surveys of products to determine if their production uses bio-based raw materials, and applies rules that check for impacts on biodiversity at the development stage for all products.

Among bio-based raw materials, the Group views palm oil as a raw material that should be followed with priority, and, over the three-year period from fiscal 2020 to 2022, worked to investigate whether products use certified raw materials and to advance the switch to alternative materials. In fiscal 2020, the Group investigated whether certified raw materials were used in regard to raw materials made from palm oil, and completed its investigation of 93% of relevant suppliers. As a result of its ongoing efforts, it completed its investigation of 100% of relevant suppliers in fiscal 2021. Moreover, in fiscal 2021 the Group investigated whether products failing to use certified raw materials made from palm oil could be switched to using certified raw materials. As of the present time, the Group has completed its advisability judgement for 100% of relevant suppliers. Going forward, the Group will conduct follow-up investigations regarding raw materials that are difficult to replace, and will carefully examine the possibility of switching each raw material to a certified raw material.



\*2 The energy consumption shown in this graph does not include renewable energy.



Feature: IR Seminar on Toray Group’s Environmental Initiatives

# Toray Group Initiatives for Global Environmental Issues

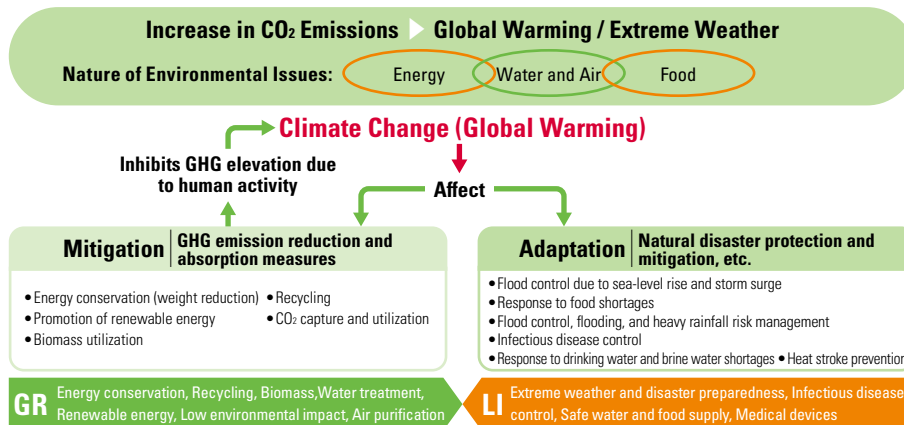
On July 15, 2022, Toray Group held an investor relations seminar titled “Toray Group Initiatives for Global Environmental Issues,” with lectures presented by Koichi Abe, Executive Vice President, and Toshiyuki Nonaka, General Manager on Special Assignment, Global Environment Business Strategic Planning Department.

## Solutions for Global Environmental Issues Are Inconceivable without Innovations in Materials



**Koichi Abe**  
Executive Vice President

Toray Group views global environmental issues as consequences of energy, water and air, and food, and therefore engages in R&D from the two approaches: “mitigation measures” and “adaptive measures.” Mitigation measures seek to reduce GHG emissions as the fundamental cause of these problems, and adaptive measures seek to manage the impacts that are already occurring or that cannot be avoided. Global environmental issues are assumed to be critical challenges for both the Green Innovation Business Expansion Project (GR Project) and the Life Innovation Business Expansion Project (LI Project). In terms of the impact of Toray Group’s environmental contributions, I believe that technologies involved in “weight reduction” and “membrane separation” are attracting interest, which is why I would like to focus my talk on these.

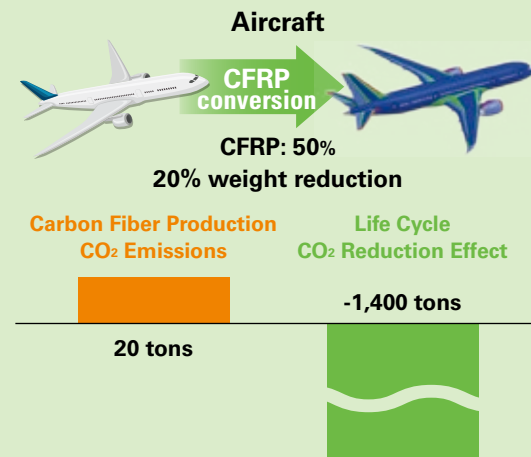


## Carbon Fibers Find Success Beyond Aircraft

The first technology I would like to cover on the topic of “weight reduction” is of course carbon fibers, for which Toray holds one of the highest shares in the world. Given that they are ten times stronger than steel and a quarter of the weight without rusting, carbon fibers are used in products ranging from aircraft to automobiles, wind turbines, and fishing rods. This material particularly had a large impact on improving the fuel efficiency of aircraft. Although the synthesis and carbonization processes do emit 20 tons of CO<sub>2</sub> per a ton of carbon fiber, using carbon fiber reinforced plastics (CFRP), a composite material made from carbon fiber and resin, for 50% of an aircraft body structure by weight is expected to reduce 1,400 tons of CO<sub>2</sub> emissions over the aircraft’s life cycle.

CFRP is also becoming an indispensable material for wind power generation. In 2015, wind power generation typically used 60-meter-long glass fiber composite blades. As the longer the wind blades, the higher power generation efficiency, 120-meter-long blades are expected to become the mainstay by around 2030. However, in proportion

to their length, the blades require strength to withstand strong winds and rigidity to avoid bending under their own weight. Therefore, all blades exceeding 90 meters in length are increasingly being made of CFRP, and expectations on Toray’s technological capabilities from wind power generation is also raising.

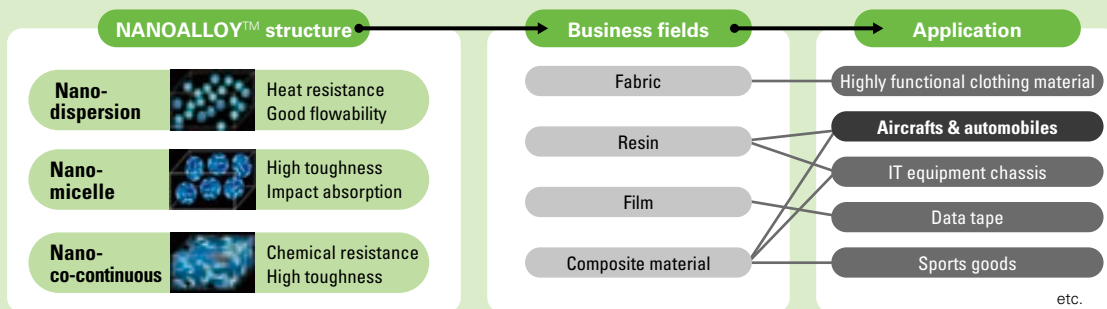


Carbon Fiber Association Model Cooperation: Prof. Takahashi and Prof. Li Jia, The University of Tokyo, All Nippon Airways, The Boeing Company (U.S.)

## Future of Promising NANOALLOY™

Approaches to reducing weight typically rely on concepts of replacing metals with plastics, so in this respect, NANOALLOY™, a microstructure control technology for which Toray holds a patent, has become an extremely promising approach. This technology mixes several different polymers at the nanoscale (one-billionth of a meter) to form alloy structures, which enable polymer materials

to exhibit a higher level of performance and function that could not have been realized using conventional alloys formed at the micron scale (one-millionth of a meter). In fact, Toray has used this technology to develop a special plastic that softens like rubber when subject to impact, which is increasingly being adopted for impact-absorbing automobile parts.



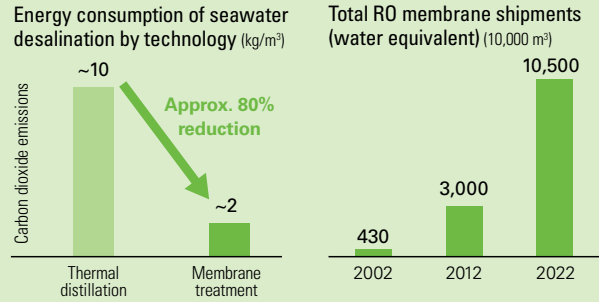
## Seawater Desalination Technology Supplies Fresh Water for 730 million People

In 1968, Toray began developing reverse osmosis (RO) membranes to convert seawater into fresh water. Although these membranes are commonly used in seawater desalination plants in the Middle East today, with its abundant energy resources, early on this region typically used evaporation methods that boil and distill seawater, meaning there was absolutely no need to remove salt from seawater using membrane treatments. For this reason, Toray originally focused its efforts on the ultra-pure water filters required for semiconductor manufacturing

for a time in order to perfect its water treatment technologies. Later on, as the demand for water expanded with global population growth and economic development in emerging countries, water resource shortages caused by global warming-triggered droughts and industrialization-triggered water pollution became aggravated. Against this backdrop, Toray’s membrane treatment methods began to attract interest because of their ability to control water quality with high precision and treat water at high speeds. Compared with evaporation

## Feature: IR Seminar on Toray Group's Environmental Initiatives

methods, membrane treatment methods also reduce energy consumption and desalination costs, which has led to a dramatic increase in shipment volumes for Toray's reverse osmosis membranes over the past ten years. In fact, these have already been delivered to more than 100 large-scale desalination plants in 99 countries around the world, which have helped supply fresh water to 730 million people globally when converted to water volume.



### Further Evolution of Separation Membrane Technology

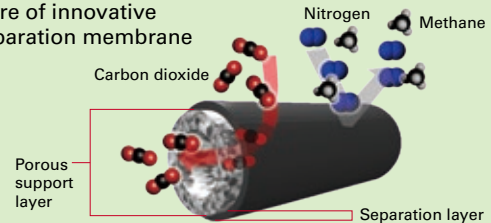
With more than 50 years of history, separation membrane technologies have also come into the limelight for producing green hydrogen in a way that does not emit CO<sub>2</sub>. Toray has been participating in a NEDO project intended to produce hydrogen from water through electrolysis using power sourced from renewable energy. The water electrolysis method adopted for this project uses a polymer electrolyte membrane (PEM). For more than 15 years now, Toray has been involved in developing hydrocarbon (HC) electrolyte membranes that can be effectively applied in PEMs for use in fuel cell vehicles. And these membranes have been well-received for their ability to produce twice as much hydrogen per area of membrane compared with conventional fluorine membranes at the same voltage.

More recently, Toray applied its water treatment membrane technology to develop a polymeric separation membrane module that selectively permeates hydrogen at high efficiency from mixed gases containing hydrogen. At 98%, these modules have achieved the world's highest level of permeated hydrogen purity. This technology is able to improve hydrogen purity in a single separation pass to a level that previously required multiple filtration passes.

#### Features of Toray HC electrolyte membranes

Requirement	PEM type water electrolysis		
		Reference fluorine film	Toray HC electrolyte membrane
Efficiency	%	76	<b>87</b> <b>High efficiency</b>
High current density	A/cm <sup>2</sup>	1	<b>2</b> <b>Reduced stack count</b>
Low gas permeation	a.u.	1	<b>1/3</b> <b>Safety high availability</b>

#### Structure of innovative CO<sub>2</sub> separation membrane



Moreover, Toray also combined its carbon fibers and membrane separation technologies to develop a revolutionary CO<sub>2</sub> separation membrane made from porous carbon fibers that can separate and recover CO<sub>2</sub> from factory emissions, for example. The Company will begin demonstration tests for specific applications in 2025, and is moving forward with efforts for real-world operations in 2030.

### Pioneering the Development of Biomaterials

Toray is also accelerating efforts to produce valuable materials from nonedible biomass in a way that does not conflict with food issues. Specifically, the Company mass produces partially bio-based PET fibers from ethylene glycol raw materials produced from nonedible sugar cane molasses. These fibers have been used to produce non-woven material created using ultra-fine fibers, for example. With a focus on sportswear and automotive interiors, Toray also aims to mass produce the world's first 100% bio-based PET at the earliest possible timing using raw

materials such as plant-based ethylene glycol and bio-para-xylene. Moreover, Toray developed a membrane bioprocess that fuses its water treatment separation membrane technologies and biotechnologies. At a demonstration plant in the Kingdom of Thailand, one of the world's largest producers of sugar cane, the Company is currently conducting pilot operations for efficient co-current production of cellulosic sugar, polyphenol, oligosaccharide, and other materials made from bagasse, which are byproducts from residue left after extraction of juice from sugarcane.

### Technological Fusion Drives Innovation

As you can see from the examples of carbon fibers and water treatment, Toray's R&D features "long-term continuity" in a way that persistently engages in recognizing the value of materials. In addition, Toray has centralized all of its R&D functions deployed in various fields within the Technology Center, where an undivided R&D organization

that allows for technological fusion to easily emerge has also become one of its major strengths. Toray believes that fundamental solutions for global environmental issues are inconceivable without innovations in materials, and therefore promotes the drive for innovation through technological fusion on a group-wide basis.



## Aiming to Build a Presence in the Areas of Carbon Neutrality, Circular Economy, and Nature Positive

Behind the SDGs lies the concept of planetary boundaries. On the one hand, human lifestyles have become materially rich and convenient through economic growth and technological development, on



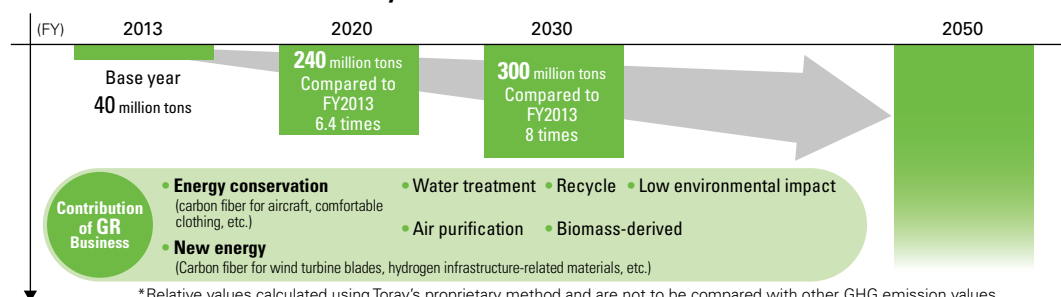
### Toshiyuki Nonaka

General Manager on Special Assignment,  
Global Environment Business Strategic Planning  
Department

the other hand, climate change, biosphere integrity, land use changes, and biogeochemical cycles have become major topics of discussion given the indication that these have reached a level that exceeds the range in which humans can safely act.

Against this backdrop, today it looks as though debate will also heat up over disclosing environmental contributions brought about through products and services, which can be considered Scope 4 following on Scope 1, 2, and 3. In this respect, Toray already visualizes its environmental contributions through a proprietary calculation method and engages in various projects with targets set to be achieved by fiscal 2030. Therefore, I would like to focus my talk on three of the four visions for the world for which Toray Group aims to achieve by 2050 under the Toray Group Sustainability Vision. At the same time, I will cover Toray Group's business strategies for ensuring coexistence between business growth and solutions to environmental issues.

### Amount of contribution to society's CO<sub>2</sub> emissions reduction\*



## Developing a Broad Range of Core Materials for the Hydrogen Value Chain

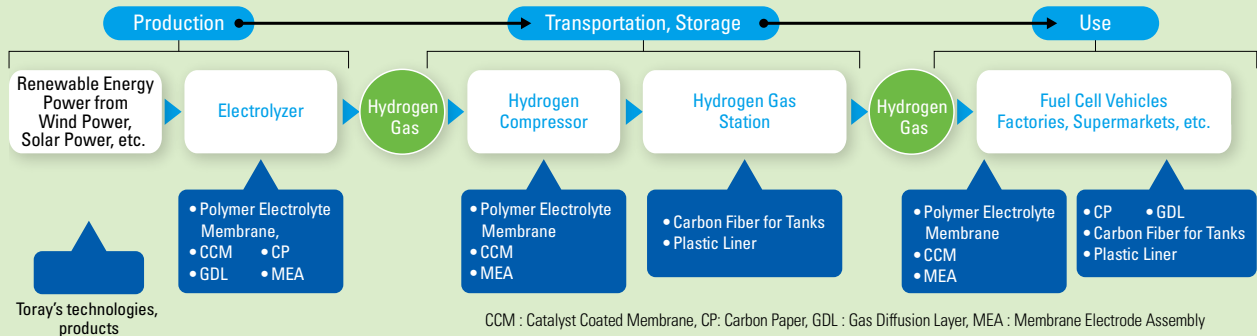
As one of the visions for the world for which the Group aims under the Toray Group Sustainability Vision, "A net zero emissions world, where greenhouse gas emissions are completely offset by absorption" refers to carbon neutrality. However, this vision requires the realization of a hydrogen society that eliminates CO<sub>2</sub> emissions from combustion as well, which is why Toray engages in the development of a broad range of core materials for each of the hydrogen production, transport, storage, and usage stages.

For example, high-strength carbon fibers and plastic liners are used in hydrogen storage tanks, so in preparation for market expansion, one of the group's subsidiaries in Germany has been augmenting production facilities for catalyst coated membranes (CCM) and membrane

electrode assemblies (MEA), both of which are key components of hydrogen fuel cells. Moreover, Toray received the cooperation of Hitachi Zosen Corporation in developing a megawatt class PEM water electrolysis unit for a P2G (Power to Gas) system that produces green hydrogen using renewable energy. This P2G system has already begun delivering green hydrogen to factories and supermarkets in Yamanashi Prefecture, Japan. In addition, a consortium consisting in part of Yamanashi Prefecture and Tokyo Electric Power Company Holdings is advancing a large-scale P2G system project, which plans to put a large-scale 16-megawatt class water electrolysis unit using Toray's hydrocarbon (HC)-type electrolyte membranes into real-world operations by fiscal 2025.

## Feature: IR Seminar on Toray Group's Environmental Initiatives

### Development of a wide range of key materials in all aspects of hydrogen production, transportation/storage, and utilization



Moreover, Toray has acquired a 25% stake in Yamanashi Hydrogen Company, Inc., Japan's first P2G service company. In addition, Toray developed a small-scale P2G system package, and has launched an alliance business that aims to use this package in decarbonizing

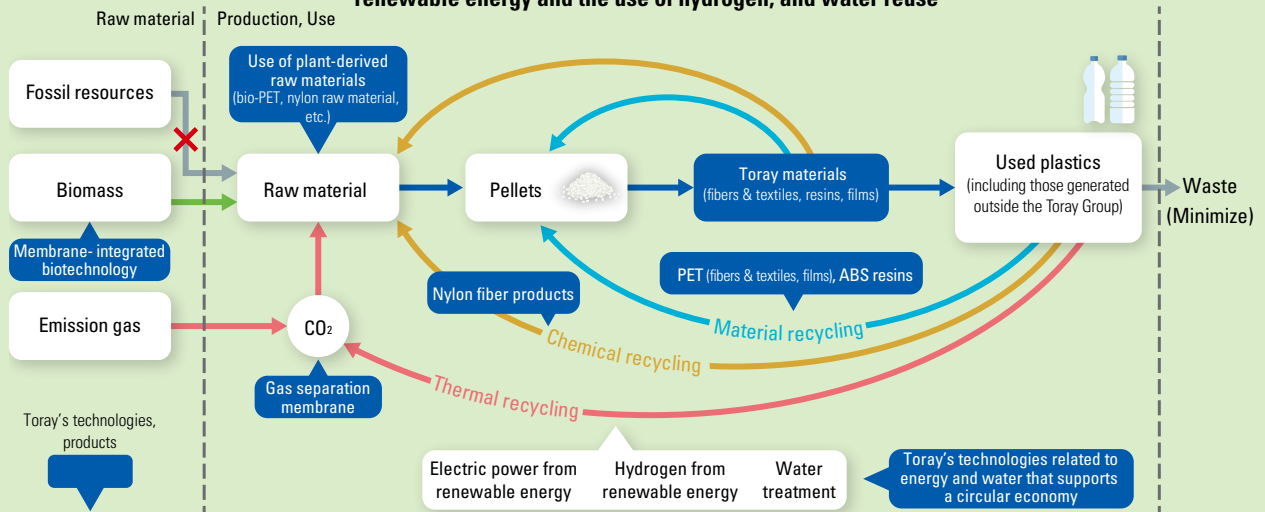
manufacturing and other industries that are difficult to electrify. Meanwhile, in order to advance technology creation for green hydrogen production and global deployment together with Siemens Energy AG, Toray has entered into a strategic partnership with this company.

### Building a Circular Resource Use Model

As the second vision, "A world where resources are sustainably managed" focuses on material recycling for reusing fibers and textiles, resins, films, and other plastics products. In addition, chemical recycling, which converts unrecyclable plastics back into basic chemicals such as monomers and gases, is already implemented

for nylon fiber/textile products. In terms of thermal recycling, which recovers and utilizes heat energy generated during the incineration process, Toray has succeeded in developing a technology that separates and recovers CO<sub>2</sub>, as the Vice President Abe touched upon earlier.

### Contribute to initiatives including biomass plastics, recycling, promoting of renewable energy and the use of hydrogen, and water reuse



### Promoting the Recycled Fiber and Textile &+™ Business

Toray has a long history in recycling fibers and textiles, in particular, and in 2002 established the Fibers & Textiles Recycling Department. Along with expanding material recycling as an ongoing effort and chemical recycling for Nylon 6 products, the Company unified its fibers and textiles business recycling activities. As an effort that without question exemplifies long-term continuity, in 2019 Toray launched the &+™ recycled fiber and textile brand of products made using recovered PET bottles as raw materials. Combining high whiteness, high reliability

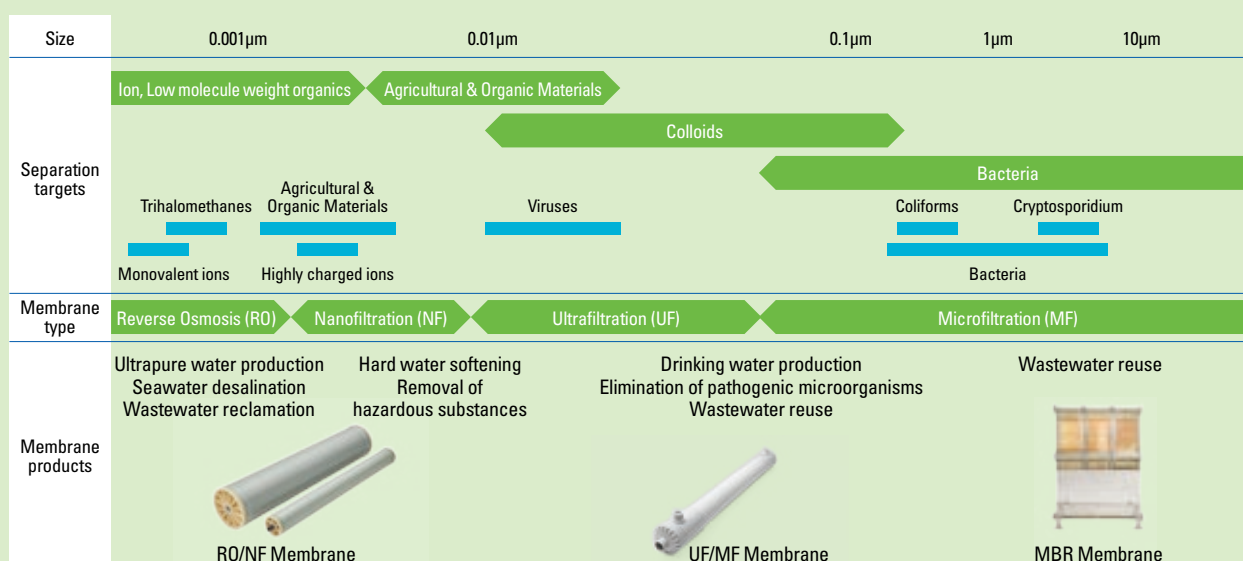
based on traceability technology, and high purity, these products have already been adopted by Seven & i Holdings Co., Ltd., MARUI GROUP CO., LTD., and others. Moreover, the Company has undertaken the challenge of applying chemical recycling for materials that are difficult to regenerate using material recycling, such as those containing dyes and other additives that are difficult to remove, blended materials that are difficult to separate out, and those for which repeated recycling causes deterioration.

## Global Leader in Water Problem Solutions

As the third vision, "A world with a restored natural environment, with clean water and air for everyone" is something that might be difficult to experience first-hand in Japan. But looking to the world beyond, water shortages are becoming increasingly problematic with continuous population growth, even in places where large populations were never meant to exist, coupled with the advance of global warming. In response, Toray's membrane treatment technologies that realize high-quality, high-speed, energy-saving treatment processes can be considered an essential technology for the 21st century. Toray has established itself

as the global leader and top technology share holder for reverse osmosis (RO) membranes, which are able to separate out the smallest substances, yet are a difficult technology to work with. In addition, the Company possesses all four types of membrane technologies, namely RO membranes, nanofiltration (NF) membranes, ultrafiltration (UF) membranes, and microfiltration (MF) membranes. And from the perspective of being able to separate out various substances, Toray is likely the only company with this capability, and will aim to maintain its position as the global leader in water treatment problem solutions.

### Function and structure of water treatment membranes



## Purifying Air with Air Filters

In addition to water, Toray realizes high-quality air environments by adsorbing contamination from the air using low-pressure loss, high dust collection efficiency air filters made from high-performance, nonwoven sheet made of special ultra-fine polypropylene fibers that are given electret properties through a specialized process. Substances that permanently maintain electric polarization even without an external electric field, and that produce an electric field of their own, are called electrets. Toray's nonwoven fabrics are made from ultra-fine

fibers of approximately two microns in width, where each individual fiber is provided with an advanced electret function. This approach provides its nonwoven fabrics with a high trapping efficiency for PM2.5, viruses, and other particles, as well as offensive odors. Sold under the TORAYMICRON™ name, these nonwoven fabrics have been proposed as filter materials that help broadly improve air quality and conserve energy in a wide range of applications, for everything from home-use to industrial-use.

## Transforming Nature Positive into Opportunity

As interest in global environmental issues dramatically increases, following upon carbon neutrality, nature positive, which aims to stop the world from damaging biodiversity and other forms of natural capital so that they can recover, is coming to be viewed as a global objective. Like the TCFD, this concept led to the launch of the Taskforce on Nature-related Financial Disclosures (TNFD) in June 2021. Although the world now also focuses on biodiversity, Toray has committed itself for many years to water

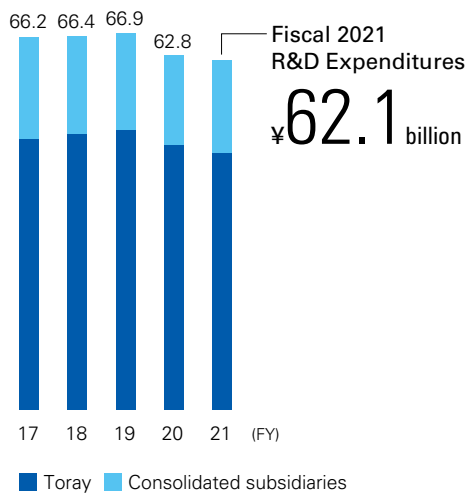
and air, so I feel the times have finally caught up to us.

Nature positive covers the three areas: food, land and ocean use; infrastructure and construction; energy and extraction activities. Therefore, it is expected to create a market with an annual value of \$10.1 trillion. For this reason, Toray views carbon neutrality, circular economy, and now nature positive as major business opportunities, and aims to ensure its presence in these areas through innovative material technologies.

R&D



R&D Expenditures (Billion yen)



## Research and Technological Development Provide the Key to Building the Toray of Tomorrow

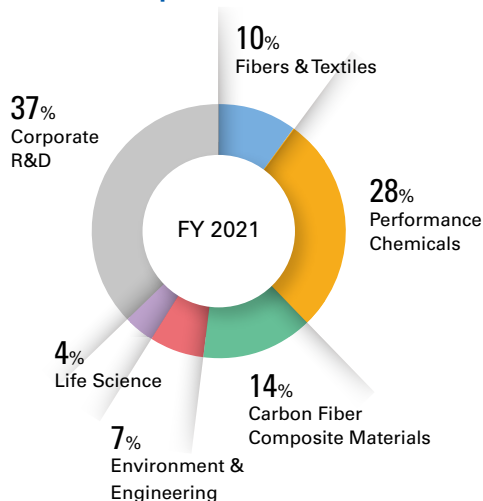
### R&D Basic Policy and Organization

Toray's Technology Center serves as the headquarter for driving research and technological development into advanced materials based on the firm conviction that research and technological development provide the key to building the Toray of tomorrow.

Developing and commercializing materials requires a certain amount of time, however. Which is why the Group defines the ability to recognize the value of materials and the steadfast commitment of long-term continuity as its strengths, and why it views themes that realize benefits today as well as pipeline management from a long-term perspective that keeps its sights down the road and beyond as its advantages. Moreover, Toray R&D teams inherit the idea of "The Deeper, the Newer," in other words, the concept that digging deep into something will result in new discoveries and inventions—the DNA of "pursuit of the ultimate limits." And based on a grand vision of the times and the needs of society, Toray aims to drive innovation that possesses social and economic value.

Toray Group has centralized all of its R&D functions into the Technology Center. Bringing together specialists from many fields in this undivided R&D organization makes it easier to create new innovations by integrating technologies. This also enables the Group to fully utilize its combined strength by actively exploiting techniques and knowledge from many fields to solve problems in a single business area.

Percentage Breakdown of Total R&D Expenditures







## Opening a New Development and Marketing Center to Expand Environmental and Mobility Businesses

The environmental and mobility markets have expanded and diversified around the world in recent years. Efforts to virtually eliminate greenhouse gas emissions have picked up internationally, beginning with the European Green Deal. On the mobility front, a transition to CASE (Connectivity, Autonomous, Sharing/ Services and Electric) principles is guiding the development of electromotive vehicles\*, as well as of a diverse range of other advanced mobility platforms. These include urban air mobility, drones, and small electric mobility vehicles.

In order to rapidly address these changes, in June Toray launched the Environment & Mobility Development Center (EMC) as an organization under the direct authority of the Chief Technology Officer. This move was made to integrate and strengthen the development functions performed by the Environment & Energy Development Center in regard to environmental materials and new energy-related materials and the solution proposal and technology marketing functions performed by the Automotive Center based on advanced materials for automobiles.

EMC will serve as the hub of global development collaboration in the environmental and mobility fields, including for Toray Advanced Materials Research Laboratories (China) and Toray Automotive Center Europe. At the same time, Toray established the Environmental Solutions Department and the Next Mobility Department within the Corporate Marketing Planning Division. In collaboration with EMC, these two departments will propose sophisticated total solutions that integrate the various advanced materials possessed by Toray Group.

\*Electromotive Vehicles: The general term for hybrid vehicles, plug-in hybrid vehicles, electric vehicles, and fuel cell vehicles.

### TOPICS

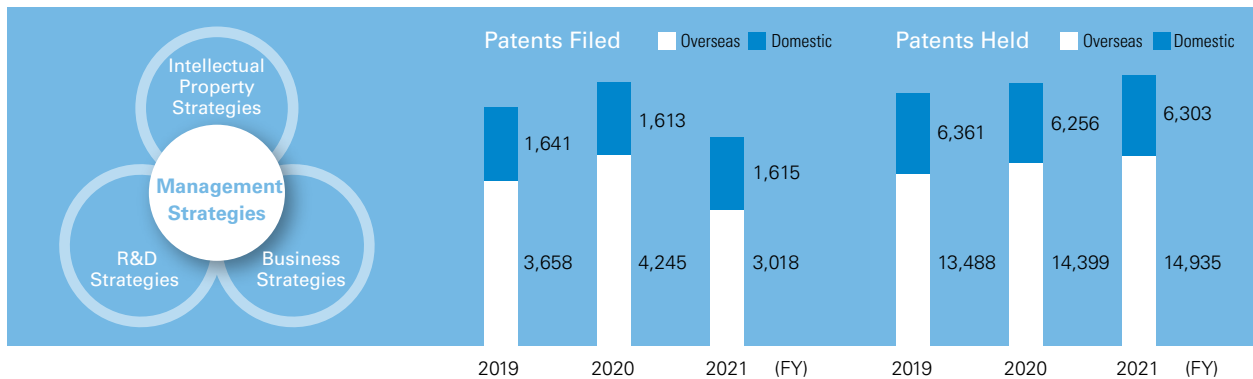
#### **68th Okochi Memorial Technology Award Received for the Development of Biaxially Oriented Polypropylene Film for Heat-durable Film Capacitor for Electrified Vehicle**

Toray received this award for its success in using an innovative film forming technology to develop and commercialize a biaxially oriented polypropylene (OPP) film designed for use in highly heat-resistant film capacitors. This development received high marks for its significant contribution to reducing the weight and to increasing the output of power control units (PCUs), a core component of electromotive vehicles, as a result of reducing the size and enhancing the performance of film capacitors. The development was also recognized for helping to increase PCU performance and to expand the use of electromotive vehicles. Toray received the Okochi Memorial Award, which is presented annually for outstanding achievements related to production engineering, research and development into production technology, and application of sophisticated production systems in Japan, for the 15th time this year. Toray previously received it during the 63rd event. Moreover, Toray's TORAYFAN™ polypropylene (OPP) films for film capacitors are also known throughout the world as the leading brand of capacitor films, and currently account for more than 60% of the global share for electromotive vehicles.

#### **30th Global Environment Award, Japan Business Federation Chairman's Award Received for Contributing to Green Hydrogen Cost Reductions**

Toray received this award in recognition of its contributions to green hydrogen cost reductions realized through the development of hydrocarbon-based electrolyte membranes. In this case, a hydrocarbon-based electrolyte membrane developed by Toray was used as part of a project originally commissioned by NEDO in 2016 to develop and demonstrate a Power to Gas (P2G) system for producing hydrogen using solar power. As a result, the project demonstrated the ability to produce twice the amount of hydrogen per area of membrane when compared to conventional fluorine films at the same voltage, which is anticipated to significantly help reduce the cost of green hydrogen in the future. By further enhancing the performance of and standardizing water electrolysis units using Toray's hydrocarbon-based electrolyte membranes, the project aims to realize a carbon neutral society through its contributions to achieving hydrogen costs that are comparable to those of existing fossil fuels, and to building a global green hydrogen supply chain.

## Intellectual Property



### Basic Policies on Intellectual Property

Toray Group has formulated and executes the following four intellectual property strategies as its basic policies on intellectual property.

#### 1. Intellectual property strategies, as a part of the strategy trinity, that conform to management principles

Toray Group regards intellectual property as one of its vital management resources. We integrate our intellectual property strategies mutually and organically with our business strategies and R&D strategies, and as part of this "trinity," we designate intellectual property strategies as one of the most important elements of our management strategies.

#### 2. Promoting the procurement of rights

In order to protect Toray Group's products and technologies and to ensure profits, we promote high-quality patent applications and patenting, and strive to build a strong patent network with deterrence capabilities. Regarding trademarks, we execute the acquisition of appropriate rights with an eye to improving brand value.

#### 3. Respecting the rights of others

Toray operates a patent confirmation system to comprehensively investigate the relationship between its own products and technologies and patents owned by other companies to assure that there is no infringement upon the rights of other parties. We also check the relationship of our trademarks with those registered by other companies prior to use.

#### 4. Rightful enforcement of our own rights

When Toray Group's patent rights are infringed upon by another party, we take proper steps depending on the circumstances by exercising our patent rights, such as demanding that infringement cease, receiving monetary profits from licensing, and using our patent rights for cross-licensing with the patent rights of other parties.

### Systems and initiatives for intellectual property strategy implementation

Toray Group implements intellectual property strategies in line with its basic policies through the following systems, initiatives, etc.

#### 1. Patent responsibility structure, global patent strategy responsibility structure

Toray and its major group companies appoints patent managers for each product line and technology group and have established patent committees with the participation of members from the Intellectual Property Division, as well as research, R&D, and marketing and sales departments. Activities with regard to filing, patenting, defense, and exploitation of rights are promoted upon deliberation by the patent committees. In addition, the supervising executives in charge of technology and production in each business are appointed as global patent strategy chairperson to guide and supervise global intellectual property activities conducted by Toray and its Japanese and overseas group companies in each business.

#### 2. Development and implementation of an IP action plan

Under the guidance of global patent strategy chairperson, each business formulates and carries out an "IP action plan" concerning important matters on intellectual property. Themes that should be given particular emphasis are selected as "Rank-A Projects" and focused upon for promotion. The status of implementation of the IP action plan is reported once a year to the Board of Directors.

#### 3. Building barriers to other companies' entry through intellectual property

Toray and its major domestic and overseas subsidiaries and affiliated companies are strategically using patent application and patenting as well as concealment of know-how to build strong barriers to entry by other companies.

#### 4. Patent confirmation system

When manufacturing or selling new products, we ensure that the use, production, sale, etc. of our technologies and products do not infringe upon the patents, etc. of others.

#### 5. IP landscape initiatives

In formulating IP strategies, we are taking action to explore ways to utilize our patents, and other initiatives, such as promoting the training of personnel (IP analysts, and others) who can exploit IP landscapes, developing research tools, and also analyzing the business environment and investigating new and relevant topics.

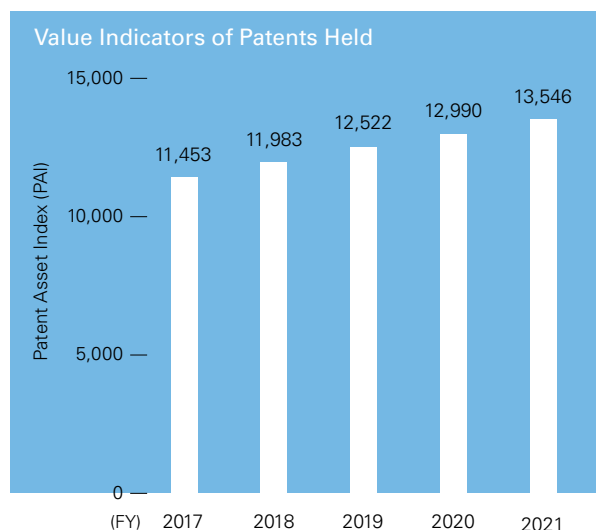
## Assessing Toray's intellectual property

### 1. Toray Takes Top Spot on Patent Result's Ranking for Fiber, Paper and Pulp Industry

The "2020 Ranking of Capability to Prevent Other Companies from Obtaining Patent Rights," published annually by Patent Result Co., Ltd., is an advanced patent application index that compiles the number of patents by a company that were cited as reasons for rejection of another company's patent application in the course of the patent deliberation process, in any particular year. Toray was ranked No. 1 in the fiber, paper and pulp category for the tenth consecutive year. As the same index benchmarks are used, if "fiber, paper and pulp," and "chemicals" categories are treated as a single industry, Toray's ranking becomes No. 3.

### 2. Patent Asset Index™ Assessments

LexisNexis® PatentSight® provides a Patent Asset Index™ (PAI) based on the technical and market value of patent families. The value of patents held by Toray Group assessed by PAI has been increasing year by year, as shown in the chart below. In order to obtain higher quality patents more efficiently, we carefully select domestic and foreign patent applications while placing focus on improving our practical IP skills, from specification drafting to patenting.

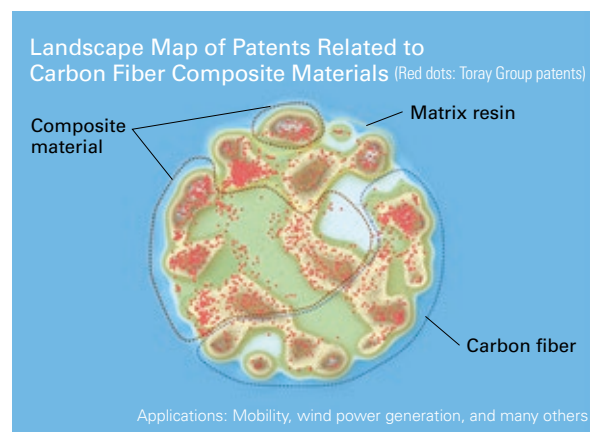


## Toray intellectual property contributes solutions to global environmental issues

### 1. Carbon fiber composite materials

Toray Group is advancing the development of carbon fiber composite materials for mobility applications such as aircraft and automobiles. By reducing the weight of aircraft, automobiles, and other vehicles, fuel efficiency can be improved and emissions of CO<sub>2</sub>, a greenhouse gas, can be curbed. Carbon fiber composite materials are also used in wind power generation blades, which are increasingly being developed and adopted.

The figure below maps the status of patents related to carbon fiber composite materials, with Toray Group patents indicated by red dots. From patents on carbon fibers and matrix resins, which are constituent materials, to patents on carbon fiber composite materials, it is well understood that Toray Group holds numerous patents in a wide range of fields, including for mobility and wind power generation applications.



### 2. NANOALLOY™

Toray Group is developing innovative materials by applying NANOALLOY™, a technology to precisely control the structure of polymer alloys, to achieve a balance between two contradictory properties, which is difficult to achieve with conventional materials.

Through materials utilizing NANOALLOY™ technology, we are proposing solutions to our customers and promoting the widespread development of materials, such as for impact-absorbing components for vehicles and parts for next-generation mobility.

### Major Patents Related to NANOALLOY™ in Japan

NANOALLOY™ TECHNOLOGY	Types of Polymer Alloys	
	Microdispersed to continuous structure	Nanomicelle structure
Patent specifying the structure of polymer alloys	Patent 4792721 (Defines nano-order structural periodicity)	Patent 4600015 (Specifying nano-order micelle size)
Patents specifying the properties of polymer alloys	Patent 4972878 (Specifying the conformation of polymer alloys)	Patent 4720567 (Specifying the relaxation time of the carbonyl groups in the polymer)



## Advanced Business Management by Utilizing Digital Technologies

### The Group-wide Effort to Promote Digital Transformation

A key initiative in “AP-G 2022” is promoting advancements in management through digital transformation (DX), which will strengthen competitiveness and transform business through the effective use of data and digital technologies. In order to facilitate reviews and discussions regarding group-wide efforts to promote DX, Toray established the Toray Digital Transformation (TDX) Promotion Committee, chaired by the President, and under that the Technology Center DX Promotion Committee and the Business Division DX Promotion Committee. The Company is advancing the group-wide TDX Promotion Project in addition to conventional departmental initiatives.

The Technology Center DX Promotion Committee is promoting DX through its policy of “on-site human resources with expertise in production, research and technological development (R&D) utilizing digital technology to solve on-site issues.” In R&D, we have succeeded

in making materials development more sophisticated and efficient by clarifying the nature of materials through simulation and predictive design using materials informatics (MI). In the production field, we have achieved significant results with AI-driven quality improvements and the predictive management of equipment failures.

The Business Division DX Promotion Committee is engaged in operations with themes that can be applied horizontally, serving as leading examples across the Group, such as improving the sophistication and efficiency of global supply chain management (SCM), introduction of a customer relationship management (CRM) system to visualize the information communicated with customers, and marketing automation (MA)-driven digital marketing.

In addition, the Information Systems Division is working to build out IT infrastructure and strengthen information security in support of global business expansion.

#### Toray Digital Transformation (TDX) Promotion Committee

##### Technology Center DX Promotion Committee

Drive advancement and streamlining by leveraging digital technology in research and technological development (R&D), and production

##### Business Division DX Promotion Committee

Visualize global management information in sales & marketing, finance & accounting, and purchasing & logistics, and advance business management

### The Strengthening and Development of Digital Human Resources

Based on its policy of “improving the digital skills of personnel with a good grasp of *Genba* (workplace) operations,” the Company’s DX program will immediately train dozens of experts with digital expertise and at least 100 key personnel who can utilize digital technology to proactively promote business, as well as research and technological development.

These key people, being personnel engaged in R&D, as well as being active in on-site production activities, will be educated in digital operations, by means including on-the-job training. We are currently also putting in place a DX human resource certification system for the purpose of expanding our pool of engineers and for specialist development.



## Examples of DX Initiatives

### Advancement and Streamlining by Leveraging Digital Technology

#### Example of Informatics

In resin material development, Toray has utilized high-quality data collected and amassed over many years, and AI technology based on physical property prediction AI technology, to develop a physical property prediction system for resin products. By entering the required properties, the external resin database for customers and other external users that incorporates this system enables them to understand the properties and availability of currently offered, developed, and projected

products. In addition to providing the necessary information for customers to select resin materials, this digital service enables us to provide resin materials that meet customer needs in a short period of time and contributes to accelerated customer product development. By applying the material property data accumulated in this system to computer-aided engineering (CAE) analysis, there is also a concierge function provided to assist in selecting the optimum resins for components.

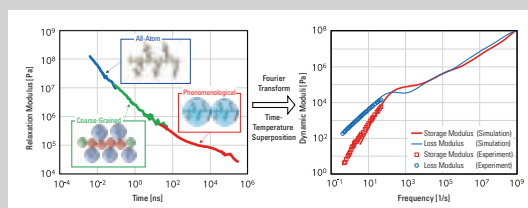


#### Example of Simulation

By means of global joint research with the University of Chicago in the United States, Toray has developed a multi-scale simulation technology that combines molecular simulation and coarse-grained simulation, and succeeded in reproducing the rheological properties of polymers. By utilizing this technology, it is possible to predict the physical properties of polymers with arbitrary chemical structures without using any experimental parameters, so simulations are expected to lead the way in the

molecular design of completely new polymer materials. By creating a database of physical property data obtained from simulations and using it for AI learning, it will also be possible to improve the accuracy of physical property prediction by informatics and expand the scope of application. Having been published in the American Chemical Society's journal *Macromolecules*<sup>\*</sup>, this achievement has received high academic acclaim.

<sup>\*</sup>H. Liang, K. Yoshimoto, P. Gil, M. Kitabata, U. Yamamoto, J. J. de Pablo, *Macromolecules* 2022, 55, 3159–3165.



### Improving Production Sites by Utilizing Digital Technology

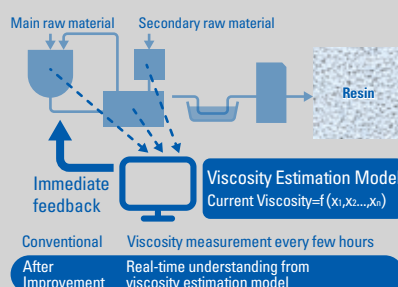
#### Example of AI Utilization

In the quality control of resin products, samples were conventionally taken every few hours to measure the resin's melt viscosity, and the manufactured product was disposed of when the viscosity no longer matched the specification. This method, however, also had the problem of increasing product loss, because it takes time to detect quality abnormalities.

To solve this problem, the Company has developed a software sensor that continuously analyzes the process data of a manufacturing

process by means of AI and estimates the viscosity in real time. This technology reduces inspectors' workloads and, at the same time, enables the immediate detection of viscosity abnormalities and feedback to manufacturing conditions, resulting in a significant reduction in product loss.

Widely utilized at production sites, AI contributes greatly to the increased sophistication of manufacturing technologies, for example by improving product quality and production efficiency.



## Human Resources Management

**The greatest of Toray's strengths is its people  
Success or failure of a company is decided by  
its people, and employees shape its destiny**

### Securing and Developing Human Resources

Under the philosophy that "success or failure of a company is decided by its people, and employees shape its destiny," Toray Group views its people as its most important management resource, and therefore engages in efforts to secure and develop human resources as one of its highest management priorities.

Specifically because today is a time when business is expanding globally and the pace of change is rapid, the Group believes in the importance and need of refining the foundations of morality, humanity, and sociability; of demonstrating expertise and originality; and of leadership that motivates in line with team vectors.

From this perspective, Toray Group places the objectives of human resources development on the three aspects of "development of individuals who act with fairness, ethical standards, and a sense of responsibility," "development of professionals who demonstrate originality with advanced expertise and technical skills, and who can face reality to solve problems," and "development of leaders who act with foresight, leadership, and a sense of balance."

Moreover, the Group takes a systematic approach to human resources development based on the four pillars of OJT, OFF-JT, self-development, and human resources systems and policies. In this respect, each of these initiatives is not advanced in isolation, but in connection so as to achieve more efficient human resources development.

### Promoting Diversity

Toray Group is endeavoring to promote diversity toward the creation of thriving workplaces in which a diverse range of individuals can fully demonstrate their potential.

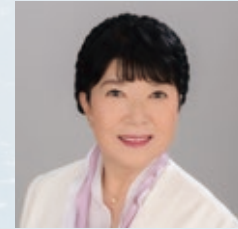
Toray has long advanced the creation of workplace environments in which women will feel comfortable in performing their duties. The number of female employees in upper-level positions has increased steadily, and as of April 2022, women held 10.0% of unit manager or higher positions, and 6.0% of section manager or higher positions. In addition, in June 2015, Toray appointed its first female director (a position equivalent to senior management in terms of duties and responsibilities). As of March 2022, there was one Senior Director.



**Boldly undertaking challenges and aiming for professionalism creates opportunities to excel**

I raised three children while working in the areas of pharmaceuticals and medical devices production, quality assurance and U.S. and European deployment with partner companies, and support for Chinese manufacturing plants. While I am currently responsible for business regarding medical devices involved in life and health as the General Manager of the Medical Products Division, I have also taken the lead in planning and managing voluntary activities for female general managers and the advancement of women since 2014. As part of the most recent (planning) training sessions for female managers (held for the 7th time in 2022), nearly 230 participants (half male and half female managers) conducted heated debates over employee development in an age of dramatic change. Toray employs roughly 1,200 women at 16 locations and plants around Japan. As representative of human resources with diverse backgrounds, environments, and ways of thinking, I believe women and efforts to create a corporate culture that leverages individuality while maintaining WLB\* will realize people-centric management. I think that throughout womens' careers, they will face many uncertainties, barriers, and failures. However, I think that by boldly undertaking challenges and aiming for professionalism, many opportunities to excel will be created.

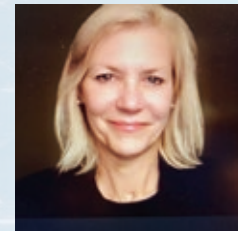
\* Work-life balance

**Harumi Horinouchi**

Toray Industries, Inc.  
Senior Director  
General Manager,  
Medical Products  
Division

**Strengthening cooperation with multiple departments**

Toray Performance Materials Corporation (TPMC) is the leading supplier of high-performance CFRT® (Continuous Fiber Reinforced Thermoplastic) composite products to the Industrial, Medical and Recreational markets. I began my career at Performance Materials Corporation (PMC) in 1997 as Associate Product Manager, then moved into a sales role managing the medical business, and later promoted to Director of Sales and Marketing. I became President of TPMC in September 2021. PMC was acquired by Toray in 2018 and TPMC, since then, has leveraged the acquisition with greater collaboration with a number of divisions and departments within Toray Group. Toray Group holds the same values held by our company and our customers, such as sustainability and contribution to society, so I feel that TPMC is a natural fit in the Group. TPMC is a group of passionate people pushing one another to be our very best, and it is an honor to be a part of the Toray-PMC team.

**Laurie Calligaris**

Toray Performance  
Materials Corporation  
President

**Setting challenging tasks in working to achieve targets**

As a subsidiary of Toray Industries (H.K.) Ltd., THK Apparel (Zhuhai) Co., Ltd. is located on the downstream side of Toray's fibers and textiles business. We manufacture and sell knitted products, and employ more than 1,000 people. After joining the company in 2001, I served as Sales Manager, General Manager of the Manufacturing Division, Assistant Plant Manager, and Vice President. In January 2022 I was appointed President, yet still feel the weight of my daily responsibilities even though almost a year has passed already. Currently, China's garment industry is faced with a difficult business environment resulting from rising labor costs, manpower shortages, an increasing number of garment manufacturing sites in Southeast Asia, and other factors, which are requiring THK Apparel to undergo a major transformation. As part of the next medium-term management program, we will set challenging tasks, and will steadily undertake these tasks with a commitment to the Toray Philosophy, a thorough *Genba* (workplace) approach, the integrity to do the right thing in the right way, and an awareness of what is best for the Company.

**Li Shuxia**

THK Apparel (Zhuhai)  
Co., Ltd.  
President

## Femtech Round Table

### —Toray’s Initiatives toward Femtech

#### Toray and Femtech

In recent years, with women entering the workforce and marrying later in life, issues related to women’s health, such as menstruation, pregnancy and childbirth, fertility treatment, and menopause, are now discussed as social issues, and with this rapidly changing awareness in society are driving the expansion of the femtech market. Femtech, a term coined by combining the words “female” and “technology,” refers to products and services that address women’s health and lifestyle concerns. Toray participates in the Ministry of Economy, Trade and Industry’s (METI) Femtech Demonstration Projects Supporting the Health and Continued Employment of Working Women in a four-company\*<sup>1</sup> partnership, and in tandem with that, in June 2022 launched the Blue Moon Project with the aim of enabling women to be themselves and shine throughout their lives with the power of new materials and technology. A strategy team, consisting of a total of 20 members, seven of whom are women selected from internal applicants as well as theme proposers (the majority of them are male), work concurrently with their regular duties as employees to take on the challenge of creating businesses around the three axes: digital wellness, reproductive health, and collaboration with leading customers and CX value enhancement. As an example, the team is currently working on the concept verification of a concept for a communication app which will support women with their physical pain and anxiety, which are difficult to express outwardly, within the framework of a METI demonstration project.



Visualization of working women who need to deal with presenteeism\*<sup>2</sup>

\*1 ASKA Pharmaceutical Co., Ltd., Next Innovation Inc., Premier Wellness Science Co., Ltd., and Toray

\*2 A condition that reduces labor productivity due to health problems, but not as severe as taking a sick leave

#### —What motivated you to apply for the Blue Moon Project?

**Sakamoto** I was genuinely interested in the project as I had seen femtech products often in Instagram posts and when I was shopping. Another reason was that I wanted to take on a challenge that went beyond the silos of my own department.

**Ishibashi** I’ve been a member of the back office since I joined the Company, but I also wanted to be involved in creating something if the opportunity arose. Also, the fact that I myself suffered from gynecological problems when I was younger is another reason. The dual role is hard, but I decided to participate in this project, as so many people cheered me on.



**Mie Asanuma**

Hot Balloon Catheter  
Business Dept.

**Sakura Sakamoto**

TORRELIEF Sales Section  
Graphic Systems Dept.

**Hiroko Ishibashi**

Secretarial Office, General  
Administration Dept.

**Asanuma** I thought there would be a lot to gain from this project as I’m in the medical device business. And it seemed to me that I could contribute to the care of female employees in the same situation, based on my own experience with problems unique to women. Furthermore, felt supportive of the idea of this project to utilize the full array of Toray resources to create something new.

**Qin** I belong to the BSF (battery separator films) Division, and I applied because I have always been interested in health issues to the extent that people think I’m a health geek. Being a Chinese national, I want to contribute to solving the problems of working women from a non-Japanese perspective as well.

**Shionoya** It all started with a casual conversation, in which I told my boss about the launch of my own business when I was a student and that I wanted to try my hand at creating a business from scratch at Toray. Given that, I was the first to be invited by my boss to join this project.

#### —Please introduce some of the work you have done through this project.

**Sakamoto** The Reproductive Health Team conducts interviews and online surveys to select topics that we should tackle, such as endometriosis, morning sickness, and postpartum depression.

**Ishibashi** The Digital Wellness Team is working on analyzing competing apps and exploring collaboration opportunities.

**Asanuma** We are examining solutions to address pain and conducting research on reproductive health.

**Qin** We are considering absorbent underpants and new forms of sanitary products.

**Shionoya** We have outlined a plan for “pain communication” and currently discussing marketing and monetization.

#### —What are your thoughts and feelings working on this project?

**Sakamoto** I’m very excited to see how collaborating with other companies can give us such new perspectives,





**Shunsuke Shionoya**  
Toray Systems Center, Inc.  
ICT Infrastructure Service Dept.  
Security Service Group

**Qin, Xiongyi**  
BSF Dept.

and it makes me feel that it's possible to set our sights on realizing a wide range of businesses. I also want to be able to act first and find something without limiting my own possibilities.

**Ishibashi** There is a lively exchange of ideas and opinions that I would not have thought of myself, and I learn a lot, especially from the younger members. The generation gap is rather refreshing, and I'm impressed that the project is coming to life through the power of young people.

**Asanuma** For Toray, femtech is not a topic on a distant horizon, and I feel that it should be one of Toray's strengths. I also learned anew the breadth of Toray's business fields, contacts, and collaborations, and the broad perspective and connections I gained were for me extremely meaningful. I intend to apply them to my activities in my own workplace.

**Qin** I'm amazed at the number of women's health issues that keep cropping up that I was not aware of before. On the other hand, I also feel firsthand how difficult it is to create new businesses.

**Shionoya** I remember starting up an advertising business when I was a student, and I find it interesting to think up a business from scratch. However, since this is a business that Toray will be involved in, we would like it to be a business that not only makes profit, but also influential enough to leave an impact on society.

### —What kind of company do you want Toray to become in the future as a result of this project?

**Sakamoto** Many Toray employees are talented and have interesting ideas, so I think it's important to enhance the foundation upon which we can take advantage of such strengths.

**Ishibashi** I hope a better internal environment will be created in which every individual can make the most of his or her strengths, that horizontal ties will become more active and extend beyond the boundaries of divisions, and that it will become commonplace for employees to freely and

openly express their ideas and opinions.

**Asanuma** I would be happy if the situation of presenteeism among working women improves, and to see that a culture of mutual support and relying on each other, regardless of gender, permeates Toray.

**Qin** I hope that this project will make this Company a more comfortable workplace for women and that it will encourage them to venture further and further into unexplored fields.

**Shionoya** Toray is often seen as a conservative company, especially by younger people. We will do our utmost to make this project a success, believing that it will dispel such an image and change the way people see us, namely, into a company that is full of dreams and challenges.

**Kasabo** The goal of the project is to provide a system that helps users to become more aware of their pre-symptomatic conditions and to guide them in the right direction by providing support for their physical pain and anxieties that they may not be able to express. Today, Toray's business is to sell materials to consumer goods manufacturers, but the Company aims to establish contact with end-users through pain communication and other means by around 2030, and leverage the information obtained to provide better quality materials and products on a sustainable basis.

In addition, Toray is also looking to improve its corporate value from various angles, such as by ecosystem formation through reusable napkins from a CSV/SDGs business perspective, and contributing to work style reform and improvements to productivity for female employees around the world by bringing femtech to factories. I believe that such a concept cannot be realized by Toray alone, and it is essential to collaborate with the government and partner companies. My role is to find ways to have the unique characters of the project members shine through and resonate. Ultimately, I hope that this will be a step toward creating an environment in which society as a whole can address unseen health problems, for both men and women.



#### **Miki Kasabo**

Blue Moon Project Leader  
General Manager on Special Assignment,  
Life Innovation Business Strategic  
Planning Dept.,  
Global Operations Dept.

Miki Kasabo is responsible for healthcare business planning to support health and medical care. She joined the Company in 1996, and gained factory experience at the Seta Plant, where she was involved in product development utilizing functional fibers. Since 2008, she has been involved in the promotion of Life Cycle Management (LCM) and promoted the development of environmentally-friendly products and the introduction of environmental analysis tools. In 2018, she was transferred to the Tokyo Head Office, where she currently serves.

## Toray's Marketing Strategy

Toray Group will make inroads into the global market with its ability to offer comprehensive solutions that transcend the boundaries of its businesses.

General Manager,  
Corporate Marketing Planning Division

**Hiroshi Tsuzuki**



### How the Corporate Marketing Planning Division was established, as well as its strengths and structure

Q1

Please tell us the reason behind transitioning from what was the Corporate Marketing Planning Department, to the Corporate Marketing Planning Division that offers an array of functions.

A1

First of all, the market is changing. Toray's sales and marketing, production, technology, and research organizations, as well as its subsidiaries and affiliated companies, collaborate closely together in each business. However, customer needs are diversifying, including in the areas of mobility and environmental initiatives, and it's necessary to work at expanding business in a cross-functional manner, not only through vertically segmented marketing according to business, but also in terms of marketing based on Toray's group-wide solutions. Another point is to stay a step ahead of the competition in providing unique value for innovations in the markets we should focus on, by being quick off the mark in developing optimal materials by combining the superior technological resources in our respective businesses. In addition, we hope to create a virtuous cycle by strengthening external communication about Toray Group businesses and initiatives to raise our profile and gain recognition in various markets, while at the same time improving employee engagement.

Q2

What stands out about the chief characteristics and strengths of Toray's marketing?

A2

Toray's sales and marketing personnel, who are also marketers, stand at the front lines of each business to create customer value through materials-driven solutions, or in other words, leveraging our strength in problem solving to dramatically increase customer product value through innovative materials. Toray delivers a variety of materials in desired forms by optimizing the supply chain, from material supply to end products, in response to customer requirements. In particular, we are proud of our information network built up through years of overseas expansion and our operational capabilities in long, global supply chains, which are superior to those of our competitors. Viewing the diversifying market and customer needs as opportunities, the newly established Corporate Marketing Planning Division will support business model reform beyond single material sales by leveraging these strengths, bolstering functions in all business areas and globally, and deepening and extending the value chain.

**Q3** In what way do you collaborate with the various departments?

**A3** As an area that transcends business boundaries and one should be addressed by Toray Group as a whole, we have newly established the Environment & Mobility Development Center, putting in place a framework for technology development. At the same time, we established the Next Mobility Department and the Environmental Solutions Department within the Corporate Marketing Planning Division. This will quicken the pace of materializing market needs in long-term growth areas from both technology and marketing perspectives.

In Next Mobility, we will propose advanced total

solutions combining fibers and textiles, resins, films, electronic & information materials, carbon fiber composite materials, etc., in light of developments in mobility revolution such as electric vehicles (xEVs) and autonomous driving, and in cooperation with regional companies in China, a country driving growth markets, and in Europe, a leader in terms of environmental regulations. Environmental Solutions has established a group-wide review system that spans businesses and promotes strategic planning. In particular, customer needs for the circular economy are rapidly increasing, and we will strengthen our cross-business strategy formulation and implementation functions, including for carbon neutrality, in parallel with initiatives in each business division.

## Marketing Strategy

**Q4** Please tell us about your marketing strategy initiatives.

**A4** In terms of current corporate branding initiatives, Toray is well known in Japan, but its global brand lift\* has not surpassed a certain level. However, considering Toray's growth strategy, it's necessary to elevate this level and strengthen B-to-B marketing overseas. That's why the Corporate Marketing Planning Division, in parallel with redoubling efforts to improve the value of our corporate brand, has established the Branding & Communications Department to actively communicate to the world the materials and technologies that contribute to society, as well as our approach that Toray Group is endeavoring to achieve its Sustainability Vision through brand communication in line with the business strategies of each division.

\*Brand lift: The changing of attitudes through branding advertisements, etc.

**Q5** Please tell us about your strategy to raise awareness worldwide.

**A5** I believe that appeals for business, products, and technology are not inherently different from one another. Toray's products are backed by advanced technology and reliable quality and should be

delivered to customers in the desired form and timing. That makes marketing essential to making an impression to the effect that Toray's valued products and technology play an important role as elements within customer products. To this end, the newly established Corporate Marketing Planning Division will firmly execute core branding that strengthens efforts to effectively communicate that Toray's products and technologies support the added value of customer products, thereby raising our profile in the market.

Our branding efforts are ultimately meant to make the appeal that we are a company that contributes to the realization of a sustainable future society by offering optimal solutions under our corporate slogan, "Innovation by Chemistry." In more specific terms, we believe that this means communicating the excellence of our product and technology portfolio, for example, helping provide clean water and air as well as minimize energy consumption with carbon fiber. We also supply fibers and textiles that combine comfort and innovative functionality to enrich people's lives. These efforts at communication enable Toray to promote its entire product and technology portfolio, which is built on the wisdom of Toray's predecessors, and contribute to advanced problem solving for customers and society while globally instilling our support for the future of society.

# Members of the Board and Corporate Auditors

(As of June 22, 2022)

## Members of the Board



**President and  
Representative Member of the Board**  
**Akihiro Nikkaku**

1973 Joined the Company  
2001 General Manager, Engineering Division;  
General Manager, Second Engineering Dept.  
2002 Vice President (Member of the Board)  
2004 Senior Vice President (Member of the Board)  
2006 Senior Vice President (Member of the Board &  
Member of the Executive Committee)  
2007 Executive Vice President and Representative  
Member of the Board  
2010 President and Representative Member of the Board  
2020 President and Representative Member of the Board,  
Chief Executive Officer, Chief Operating Officer (incumbent)



**Representative Member of the Board**  
**Mitsuo Ohya**

1980 Joined the Company  
2009 General Manager, Industrial & Textile Fibers Division  
2012 Vice President (Member of the Board)  
2014 Retired from Vice President (Member of the Board)  
President and Representative Member of the Board,  
Toray International, Inc.  
2016 Senior Vice President (Member of the Board & Member of  
the Executive Committee)  
2020 Executive Vice President (Representative Member of the  
Board) (incumbent)



**Representative Member of the Board**  
**Satoru Hagiwara**

1981 Joined the Company  
2012 General Manager, Industrial Films Division;  
Chairman, Toray Films Europe S.A.S.;  
Chairman, Toray Plastics Europe S.A.  
Vice President (Member of the Board)  
2014 Senior Vice President (Member of the Board)  
2017 President and Representative Member of the Board,  
Toray Advanced Film Co., Ltd.  
2020 Senior Vice President (Member of the Board)  
2022 Executive Vice President (Representative Member of the  
Board) (incumbent)



**Member of the Board**  
**Kazuyuki Adachi**

1980 Joined the Company  
2017 Director, Toray Industries (Thailand) Co., Ltd.;  
President, Luckytex (Thailand) Public Company Limited;  
Chairman, Thai Toray Textile Mills Public Company Limited  
2018 Senior Vice President (Member of the Board)  
2020 Senior Vice President (Member of the Board) (incumbent)



**Member of the Board**  
**Minoru Yoshinaga**

1979 Joined the Company  
2008 General Manager, Manufacturing Division (Torayca &  
Prepreg Manufacturing, ACM Technology Dept.)  
2011 Vice President (Member of the Board)  
2015 Chief Executive Representative for the Americas;  
Chief Representative for the Americas; Chairman,  
Toray Holding (U.S.A.), Inc.; President, Toray Industries  
(America), Inc.; General Manager, Torayca & Advanced  
Technology and Manufacturing for the Americas  
2019 General Manager, Torayca & Advanced Composites  
Division (Carbon Fiber Business Strategy)  
2020 Senior Vice President (Member of the Board) (incumbent)



**Member of the Board**  
**Yasuo Suga**

1980 Joined the Company  
2013 Chairman and Representative Director,  
Toray Carbon Magic Co., Ltd.  
Vice President (Member of the Board)  
2016 Senior Vice President (Member of the Board)  
2019 Retired from Senior Vice President (Member of the Board)  
Chief Representative for Europe;  
President, Toray Industries Europe GmbH  
2020 Senior Vice President  
2021 Senior Vice President, Corporate Strategic Planning  
Division (incumbent)



**Member of the Board**  
**Kazuhiko Shuto**

1980 Joined the Company  
1998 Vice President (Member of the Board), Penfabric Sdn. Berhad  
2005 Chairman, Toray Jifa (Qingdao) Textile Co., Ltd.  
2010 General Manager, Textiles Division  
2014 Vice President (Member of the Board)  
2016 Senior Vice President (Member of the Board)  
2018 Chief Representative for China; Chairman & President,  
Toray Industries (China) Co., Ltd.; Chairman, Toray Sakai  
Weaving & Dyeing (Nantong) Co., Ltd. (incumbent)  
2020 Senior Vice President  
2022 Senior Vice President (Member of the Board) (incumbent)



**Member of the Board**  
**Masahiko Okamoto**

1986 Joined the Company  
2009 Vice President (Member of the Board), Toray Industries  
(Malaysia) Sdn. Berhad; Vice President (Member of  
the Board), Penfabric Sdn. Berhad; General Manager  
on Special Assignment, Finance & Controller's Division  
(Finance & Controller's Chief for Malaysia)  
2011 General Manager on Special Assignment, International  
Division  
2013 General Manager, Finance Dept.  
2017 General Manager, Controller's Dept.  
2020 Corporate Vice President (Member of the Board)  
(incumbent)



**Member of the Board (Outside)**  
**Kunio Ito**

2002 Dean, Graduate School of Commerce and Management  
and Faculty of Commerce and Management, Hitotsubashi  
University  
2004 Executive Vice President and Board Member, Hitotsubashi  
University  
2013 Director, Kobayashi Pharmaceutical Co., Ltd. (incumbent)  
2014 Director, Seven & i Holdings Co., Ltd. (incumbent)  
Vice President (Member of the Board) of the Company  
2018 Research Professor, Department of Business  
Administration, Hitotsubashi University Business School  
(incumbent)  
2020 Member of the Board of the Company (incumbent)





## Member of the Board (Outside)

**Ryoji Noyori**

1997 Dean, Graduate School of Science and School of Science, Nagoya University  
 2001 Director, TAKASAGO INTERNATIONAL CORPORATION (incumbent)  
 2003 President, RIKEN  
 2004 Special Professor, Nagoya University (incumbent)  
 2015 Director-General, Center for Research and Development Strategy, Japan Science and Technology Agency (incumbent)  
 Vice President (Member of the Board) of the Company  
 2020 Member of the Board of the Company (incumbent)



## Member of the Board (Outside)

**Susumu Kaminaga**

1969 Joined Sumitomo Precision Products CO., LTD.  
 1995 Representative Director, Surface Technology Systems Ltd.  
 2000 Director, Sumitomo Precision Products CO., LTD.  
 2002 Managing Director, Sumitomo Precision Products CO., LTD.  
 2004 President, Sumitomo Precision Products CO., LTD.  
 2012 Senior Advisor, Sumitomo Precision Products CO., LTD.; Representative Director, SK Global Advisers Co., Ltd. (incumbent)  
 Director, DEFTA Capital (incumbent)  
 2016 Outside Director, Olympus Corporation (incumbent)  
 2020 Member of the Board of the Company (incumbent)



## Member of the Board (Outside)

**Kazuo Futagawa**

1980 Joined the Ministry of Health and Welfare  
 2012 Director-General of Minister's Secretariat, the Ministry of Health, Labour and Welfare  
 2014 Director-General, Health Policy Bureau, the Ministry of Health, Labour and Welfare  
 2015 Vice-Minister of Health, Labour and Welfare  
 2017 Retired from Vice-Minister of Health, Labour and Welfare  
 2018 Special Advisor on Policy, Social Security Reform Office, Cabinet Secretariat  
 2020 Member of the Board of the Company (incumbent)

## Corporate Auditors



## Corporate Auditor

**Toru Fukasawa**

1978 Joined the Company  
 2003 Executive Officer, Chori Co., Ltd.  
 2005 General Manager on Special Assignment, Corporate Strategic Planning Division; General Manager on Special Assignment, Investor Relations Dept.  
 2006 General Manager, Controller's Dept.  
 2010 Chief Executive Representative for America; Chief Representative for America; Chairman, Toray Holding (U.S.A.), Inc.; President, Toray Industries (America), Inc.  
 2012 Vice President (Member of the Board)  
 2015 Senior Vice President (Member of the Board)  
 2018 Senior Vice President (Member of the Board and Member of the Executive Committee)  
 2020 Corporate Auditor (incumbent)



## Corporate Auditor

**Yoshiyuki Tanaka**

1984 Joined the Company  
 2006 Executive Vice President, Toray Fluorofibers (America), Inc.  
 2014 General Manager, Okazaki Plant  
 2015 Vice President (Member of the Board)  
 2018 General Manager, Manufacturing Division (Fibers & Textiles Technology and Manufacturing)  
 2020 President and Representative Member of the Board, Toray Opelontex Co., Ltd.  
 2021 Corporate Auditor (incumbent)



## Outside Corporate Auditor

**Toshio Nagai**

2008 Chief Research Officer, Supreme Court  
 2012 President, Hiroshima High Court  
 2013 President, Osaka High Court  
 2014 Mandatorily retired  
 Registered as a lawyer (The Dai-ichi Tokyo Bar Association)  
 Takusyou Sogo Law Office (incumbent)  
 2015 Outside Corporate Auditor of the Company (incumbent)  
 2016 Outside Corporate Auditor, SUMITOMO CORPORATION (incumbent)



## Outside Corporate Auditor

**Kazuya Jono**

1977 Joined Mitsui Bank, Limited  
 2005 Executive Officer, Sumitomo Mitsui Banking Corporation  
 2007 Managing Executive Officer, Sumitomo Mitsui Banking Corporation  
 2010 Senior Managing Director, Sumitomo Mitsui Banking Corporation  
 2012 Retired  
 Representative Director, President & CEO, Citibank Japan Ltd.  
 2014 Retired  
 2015 Outside Corporate Auditor of the Company (incumbent)  
 2019 Outside Corporate Auditor, Brother Industries (incumbent)



## Outside Corporate Auditor

**Hiroyuki Kumasaka**

1973 Joined FUSO Audit Corporation (later MISUZU Audit Corporation)  
 2007 Chairs of the Board of Council; Head, Tokyo Office, the Audit Corporation Representative Liquidator, the Audit Corporation  
 2008 Outside Corporate Auditor, MATSUDA SANGYO CO., LTD.  
 2011 External Corporate Auditor of the Board, Japan Airlines Co., Ltd.  
 2015 Outside Audit and Supervisory Committee Member, MATSUDA SANGYO CO., LTD.  
 2019 Outside Corporate Auditor of the Company (incumbent)

# Management Team

(As of June 22, 2022)

## President

### Akihiro Nikkaku

President, Chief Executive Officer,  
Chief Operating Officer

## Executive Vice President

### Koichi Abe

Technology Center;  
Chairman, Toray Research Center Inc.

## Executive Vice President

### Mitsuo Ohya

Marketing & Sales;  
Legal & Compliance Division (Security  
Trade Administration Dept.);  
Corporate Marketing Planning Division;  
Affiliated Companies Division

## Executive Vice President

### Satoru Hagiwara

Intellectual Property Division, Global  
Environment Business Strategic Planning  
Dept., and Life Innovation Business  
Strategic Planning Dept.;  
Technology Center

## Senior Vice President

### Kazuyuki Adachi

Purchasing & Logistics Division;  
Manufacturing Division

## Senior Vice President

### Minoru Yoshinaga

Torayca & Advanced Composites Division;  
Chairman, Toray Carbon Fibers Europe S.A.

## Senior Vice President

### Yasuo Suga

Corporate Strategic Planning Division;  
Quality Assurance Division;  
HS Division

## Senior Vice President

### Kazuhiko Shuto

Resins & Chemicals Division

## Senior Vice President

### Hirofumi Kobayashi

Pharmaceuticals & Medical Products  
Division;  
Pharmaceuticals & Medical Products  
Division (Technology & Manufacturing)

## Senior Vice President

### Tetsuya Tsunekawa

Chief Representative for Europe;  
President, Toray Industries Europe GmbH

## Senior Vice President

### Shigeki Taniguchi

Human Resources Division;  
Toray Human Resources Development  
Center

## Senior Vice President

### Kenichiro Miki

Fibers & Textiles Division;  
Osaka Head Office

## Senior Vice President

### Satoru Nishino

Films Technology & Manufacturing Division

## Senior Vice President

### Hideki Hirabayashi

CSR & Investor Relations;  
General Administration & Communications  
Division;  
Tokyo Head Office

## Senior Vice President

### Hiroshi Enomoto

Electronic & Information Materials Division;  
Display & Graphic Materials Division

**Corporate Vice President**

**Hajime Ishii**

Fibers & Textiles Division;  
Global SCM Division

**Corporate Vice President**

**Hiroyuki Matsuda**

Information Systems Division;  
Engineering Division

**Corporate Vice President**

**Masahiko Okamoto**

Finance & Controller's Division

**Corporate Vice President**

**Yuichiro Iguchi**

Research & Development Division;  
Basic Research Center

**Corporate Vice President**

**Yoshio Yamamoto**

Legal & Compliance Division;  
Compliance Dept.

**Corporate Vice President**

**Kazuhisa Itsuji**

Films Division;  
BSF Division;  
Chairman, Toray Films Europe S.A.S.

**Corporate Vice President**

**Satoshi Shimoyama**

Water Treatment & Environment Division;  
Water Treatment Division;  
Chairman, Toray Asia Pte. Ltd.;  
Chairman, Toray Membrane (Foshan) Co.,  
Ltd.

**Vice President**

**Young Kwan Lee**

Chief Representative for the Republic of  
Korea;  
President, Toray Industries Korea Inc.;  
Chairman, Toray Advanced Materials Korea  
Inc.

**Vice President**

**Teh Hock Soon**

Chief Representative for Malaysia;  
President, Toray Industries (Malaysia) Sdn.  
Berhad;  
Chairman, Penfabric Sdn. Berhad;  
Chairman, Toray Malaysia Systems Solution  
Sdn. Bhd.;  
Chairman, P.T. Century Textile Industry Tbk

**Vice President**

**Kei Shimaji**

Chief Representative for Americas;  
President, Toray Industries (America), Inc.

**Vice President**

**Osamu Tsuneki**

Purchasing & Logistics Division

**Vice President**

**Kazuyuki Yakushiji**

Manufacturing Division (ACM Technology &  
Production)

**Vice President**

**Yasuo Fukuda**

Manufacturing Division (Fibers & Textiles  
Technology and Manufacturing)

**Vice President**

**Masahide Matsumura**

Chief Representative for Thailand;  
President, Toray Industries (Thailand) Co.,  
Ltd.;  
Chairman, Toray Textiles (Thailand) Public  
Company Limited

**Vice President**

**Toru Kutsuzawa**

Chief Representative for China;  
Chairman and President, Toray Industries  
(China) Co., Ltd.;  
Chairman, Toray Sakai Weaving & Dyeing  
(Nantong) Co., Ltd.;  
Chairman, Toray International (China) Co., Ltd.

**Executive Fellow**

**Executive Fellow**

**Akihiko Kitano**

Advanced Materials & Application Center;  
ACM Technology Division

## Messages from Outside Directors



**Kunio Ito**

Outside Director

**Q** In your capacity as chair of the Governance Committee, what contributions are you particularly aware of? To the extent possible, please tell us about the content of your committee's discussions in fiscal 2021 and what you are keeping in mind in preparation for fiscal 2022.

**A** In carrying out my duties as chair of the committee, I pay attention to transparency and fairness so that I can fulfill my accountability to shareholders. I also strive to elicit active opinions from committee members, especially the outside directors. The Governance Committee discusses the nomination and remuneration for members of the Board as well as matters concerning governance in general. In fiscal 2021, we held in-depth discussions on topics that included the management team succession plan, a review of the remuneration system for members of the Board and corporate auditors, a review of the internal culture with regard to the Underwriters Laboratories (now UL Solutions) certification issue, and where the responsibilities of members of the Board lie. In fiscal 2022, we will be focusing on further increasing the frequency of Governance Committee meetings, the further reform of the corporate culture, deepening discussions on Board member succession plans, and on fundamentally reviewing the remuneration system for members of the Board and corporate auditors.

**Q** Do you have any recommendations for environmental initiatives?

**A** Toray has been proactively addressing environmental issues in its R&D and product development. Going forward, I want to have great expectations for the role that Toray will play in promoting Green Transformation (GX). I would also like the Company to actively promote the disclosure of information on climate change, including the TCFD. In particular, I would like to see Toray actively working to measure and disclose Scope 3 GHG emissions, which Japanese companies have yet to adequately address, thereby leading Japan as a whole.

**Q** Do you have any recommendations for human resources initiatives?

**A** I would like the Company to promote human capital management in line with the ITO Report for Human Capital Management (published in September 2020) and the ITO Report 2.0 for Human Capital Management (published in May 2022). In particular, I want the Company to proceed with the following recommendations: the further linking of management strategy and human resources strategy; the development of company-wide dialogue to foster a corporate culture that encourages behavioral changes in organizations and individuals; the provision of wide-ranging reskilling opportunities for employees outside their positions; the dynamic placement of the right person in the right job that capitalizes not only on that person's attributes but also on their knowledge and experience.



**Ryoji Noyori**

Outside Director

**Q Based on what is expected of you personally as an outside director, what holds particular interest for you in fiscal 2022?**

**A** As the saying goes, “It is not the strongest that survives. Only those that are able to adjust and adapt to their environment will survive.” In recent years, however, the natural and social environments have changed too drastically and rapidly. If a company responds to individual changes on an ad-hoc basis, the essence that should be maintained is lost, and sustainability as a company does not apply. The future is full of uncertainties, and what will happen in fiscal 2022? Those responsible for management are on occasion required to make decisions rather than reactive judgments. Outside directors help this process from an objective and impartial perspective. I would like to express my opinions toward the realization of the Toray Philosophy with a medium- to long-term, forward-looking attitude and without being constrained by history and what has been customary.

**Q Do you have any recommendations for human resources initiatives?**

**A** In highly ethnically homogenous Japan, there is a marked lack of recognition of the differences between groups and teams. A group is a spontaneous group of homogenous people, like a wild herd. Even if ecologically beneficial to its survival, a group lacks competitiveness. Teams, on the other hand, have a clear purpose and are intentionally created social organizations consisting of people with heterogenous specialties. For Toray to fulfill its social mission on the basis of its unique corporate philosophy, it will be essential to bring together a diverse range of talented human resources. The in-house vocational training of human resources who are excellent but standardized through uniform education will not be able to adapt to these changing times. I get the feeling that it will be necessary for such people to reacquire skills through external training in Japan and overseas.

**Q Do you have any recommendations for promoting DX?**

**A** Advanced technological capabilities represent Toray’s lifeline, and the Company is maintaining sufficient uniqueness and global excellence. How can the Company maximize this enormous intellectual property value? Measures that bet on the Company’s fortunes are required. It is the inventor himself who knows any individual scientific and technological significance, but it is often outside insight that finds and maximizes the possible social value. To create innovation, it is essential to strategically disclose rather than strongly guard intellectual property, and to draw out opportunities for co-creation with a wide range of other fields. In this age of information revolution, big data, digitalization, and artificial intelligence, the source of creativity that changes the world by materials capabilities is the accumulation of diverse intelligence.

## Messages from Outside Directors



**Susumu Kaminaga**

Outside Director

**Q Based on what is expected of you personally as an outside director, what holds particular interest for you in fiscal 2022?**

**A** In fiscal 2022, we will have moved out of the several years in which the Company had no choice but to focus on defense due to the spread of COVID-19 infections and will have started to assuredly build a solid foundation for demonstrating its comprehensive strengths for the future. It will be essential that investments in equipment, R&D, and human resources development are appropriately and promptly executed from a medium- to long-term perspective. In the current fiscal year, the Company is required to tackle the COVID-19 pandemic and climate change, and to react keenly to geopolitical risks, transforming supply chains, and diversifying market trends. Thus, this is an important fiscal year as the Company will want to be starting its next medium-term management program from fiscal 2023 without having fallen behind the needs of the times. I want to contribute to management through the giving of advice based on my many years of corporate management experience.

**Q Do you have any recommendations with regard to governance, compliance, and risk management?**

**A** Governance, compliance, and risk management are all fundamental to management, and systems and action plans have been put in place to share the importance of each. Under such circumstances, it is essential to instill company-wide efforts based on a common understanding that the inappropriate handling of UL certification, which has had a major negative impact, will not reoccur as a natural behavior in daily tasks. On the other hand, the effective functioning of governance, compliance and risk management is not enough. It is important to keep this in mind as a basis and push ahead toward the original purpose of Toray's business, which is the use of new materials to create innovation.

**Q Do you have any recommendations for human resources initiatives?**

**A** In management that values people as assets (human resources), research, technology and production as well as sales and marketing functions are organized organically, and the Company creates products based on new materials under a well-organized system and thereby contributes to society. In aiming for further evolution to lead the industry and change the world, the required human resources will hone their own specialties and remain sensitive to rapidly changing market trends. They are people who create innovation with an entrepreneurial spirit that transcends boundaries, and effective for their development will be the putting in place of situations in which action is required from a broad perspective and with an awareness of a time axis. Such situations include collaborative work beyond divisions and types of occupation and cooperation with customers and partner companies.

**Kazuo Futagawa**

Outside Director

**Q Based on what is expected of you as an outside director, what holds particular interest for you in fiscal 2022? Also, do you have any proposals regarding management strategy policies or suggestions regarding human resources initiatives?**

**A** Toray adopted “Contributing to society through the creation of new value with innovative ideas, technologies and products” as part of its corporate philosophy and even used “Materials change our lives” as the catchphrase in its TV commercials. It is quite a well-known fact that the fuselages and wings of some aircrafts are made of Toray’s carbon fiber, and that many of UNIQLO’s clothing items are made of Toray’s high-performance fibers. However, there are many Toray products that are not known. Toray has eight major divisions that cover, for example, fibers and textiles, films, resins, carbon fibers, and water treatment membranes, and its annual revenue for fiscal 2021 was more than ¥2 trillion, and there are many products each with revenues of several billion yen. Even if the revenue is small, the Company supplies products that are essential for industry and society, which I refer to as “Toray’s multipolar structure.”

For the development of the company, what I consider it important to address more than anything else is that all employees in every location, be it R&D, production or sales and marketing, take a self-confident pride in knowing that they are supplying products that are essential for society.

In the first half of this year, the Toray product quality certification scandal came to light. Companies positioned at the pinnacle of their industry have to engrave onto the minds of their employees that the impact of even the slightest wrongdoing or mistake on society can be immeasurable.

As an outside director entrusted by shareholders, I believe that it is my role to encourage all employees to work in a strong-willed manner without overlooking even the slightest wrongdoing or mistake, and to encourage Toray to continue to be a company that creates beneficial value.

For this reason, as the basis of human resources development I am working on raising the abilities and motivation of individuals to the maximum extent in a variety of situations, such as in-house meetings, workshops, and research briefings.

# Corporate Governance

## Basic Policy

From the outset, one of Toray Group's managerial principles has been that the purpose of a company is to contribute to society. The Group has developed the Toray Philosophy that incorporates this principle. The Group systematizes the Toray Philosophy as a Corporate Philosophy, Corporate Missions, Corporate Guiding Principles, etc. The Corporate Missions clearly enunciate that the Group will practice "sincere and trustworthy management." The

Corporate Guiding Principles stipulate the Group's commitment to "acting with fairness, high ethical standards and a strong sense of responsibility while complying with laws, regulations and social norms to earn trust and meet social expectations." When establishing the corporate governance structure, the Group seeks to realize these philosophies as its basic policy.

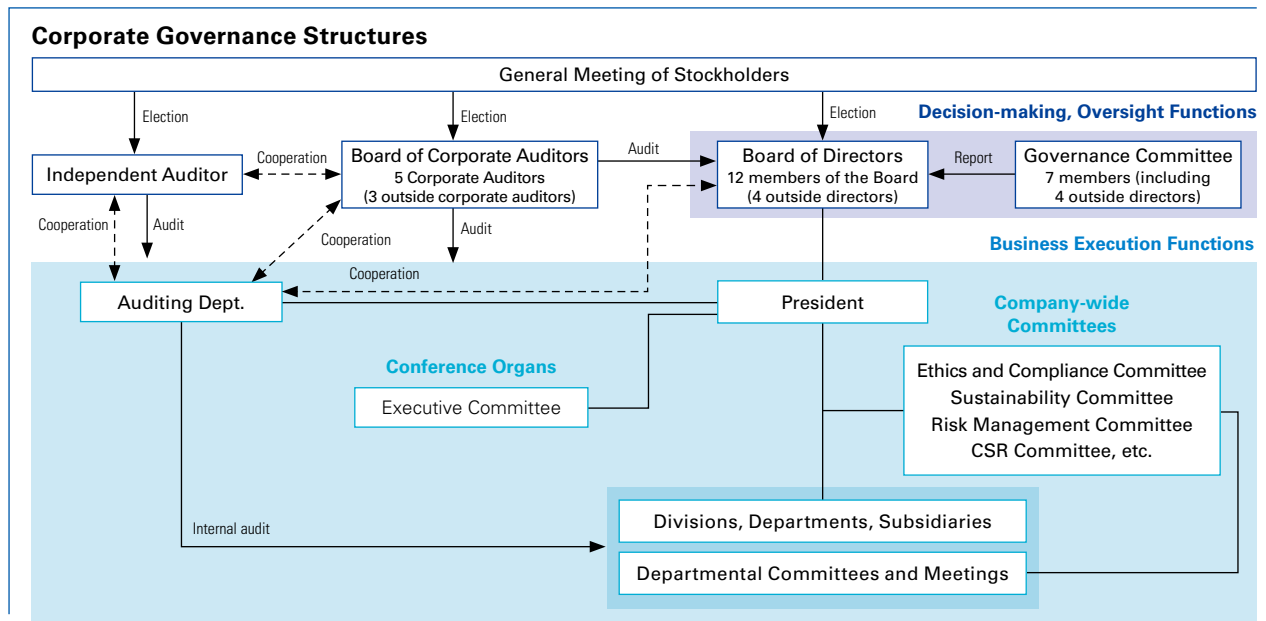
## Outline of Governance System and Reasons for Adopting the System

Toray operates as a company with a Board of Corporate Auditors and Board of Directors. The Board of Directors, which includes outside directors, decides on the business execution and supervises the execution of duties by the members of the Board. The Board of Corporate Auditors includes outside corporate auditors and independently audits the execution of duties by the members of the Board, separately from the Board of Directors and the executing organization. This framework is designed to secure the transparency and fairness of decision made by the Board of Directors. In addition, there is a Governance Committee, which serves as a voluntary advisory body to the Board of Directors. The Governance Committee deliberates on all matters relating to corporate governance, enhancing the effectiveness of governance by the Board of Directors.

Toray Group operates in a broad spectrum of business fields at a global level. Business management and

decision-making, as well as oversight, require assessment of a wide variety of risks from multiple perspectives based on expertise related to the day-to-day operations of the Group's worksites. To that end, the structure of the Board of Directors is designed to ensure that members bring a diverse range of perspectives to management oversight and decision-making. Meanwhile, outside directors are elected to the Board to enhance transparency and fairness, to ensure management oversight from an even broader perspective, and to obtain appropriate managerial advice from a medium- to long-term perspective.

The Board of 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 oversee directors' execution of their duties.



## Strengthening the Governance Framework

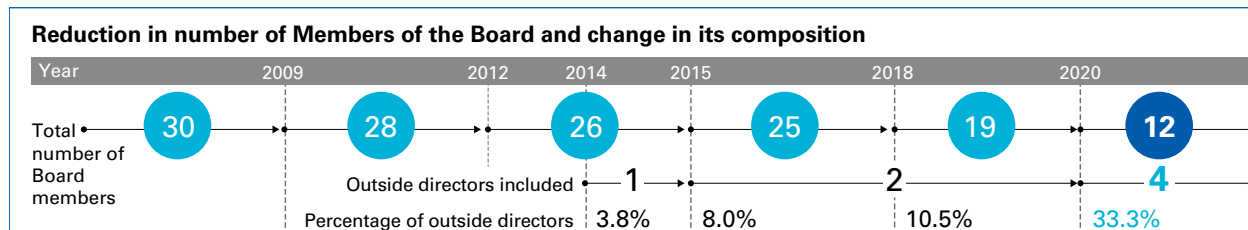
In fiscal 2020, Toray Group decreased members of the Board of Directors to 12 and increased outside directors to four in order to improve the effectiveness of the Board of Directors and to strengthen the business execution

framework. The Group also introduced an executive officer system for the purpose of flexibly implementing management execution based on quick decision-making that accurately reflects the business environment and



changes therein. The Board of Directors both establishes the scope of business execution entrusted to the vice presidents and supervises the execution of their duties. Moreover, the Governance Committee, which consists

of three internal members of the Board and four outside directors, is also chaired by an outside director. These measures help ensure a multifaceted perspective.



### Policy on the Composition of the Board of Directors, Policy and Procedures for Selecting Members of the Board

The Board of Directors has to evaluate a wide variety of risks multilaterally to fulfill its roles of oversight and decision-making. To that end, the Board of Directors strives for appropriate balance in the number of members and structure, with members who widely cover the fields of the corporate activities of the Group in terms

of knowledge, experience and ability, and appropriately ensures diversity as a whole with the announcement of the skill matrix of members of the Board. As to the structure of the Board of Directors, the Governance Committee continuously reviews it.

**Skill Matrix**

Name	Business operations				Corporate		Strategic
	Management experience	Global business experience	Technology/ Manufacturing/ R&D	Sales & Marketing	Legal/Intellectual property/Risk management	Accounting/ Finance	
Akihiro Nikkaku	●	●					
Mitsuo Ohya	●			●			
Satoru Hagiwara	●		●				
Kazuyuki Adachi		●	●				
Minoru Yoshinaga		●	●				
Yasuo Suga	●						●(DX)
Kazuhiko Shuto		●		●			
Masahiko Okamoto		●				●	
Kunio Ito						●	●(ESG)
Ryoji Noyori			●				●(Science and technology) ●(Business strategies)
Susumu Kaminaga	●						●(Policy science)
Kazuo Futagawa					●		
Toru Fukasawa		●				●	
Yoshiyuki Tanaka		●	●				
Toshio Nagai					●		
Kazuya Jono						●	
Hiroyuki Kumasaka						●	

\*The skill matrix above is not an exhaustive list of all the knowledge and experience held by the individuals, but presents up to two major skills among those that the Company expects of them to promote management strategies.

### Status of Outside Directors/Corporate Auditors Elections

Toray ensures objectivity and transparency of corporate governance by establishing and disclosing standards for independence of outside directors and outside corporate auditors. Based on these standards, the Company elects

four outside directors and three outside corporate auditors and submits notification regarding their status as independent officers to the Tokyo Stock Exchange.

## Corporate Governance

## Remuneration for Members of the Board

Given their roles, remuneration for internal members of the Board consists of basic remuneration which is a fixed amount as well as a performance-based remuneration, including a bonus which takes into account the consolidated business results for each fiscal year and other factors, and stock acquisition rights as stock options, which are linked to medium- to long-term business results. In the light of their roles, remuneration for outside directors consists of basic remuneration only. Remuneration is set at a level that enables the Company to secure superior human resources and further motivate them to improve performance, referring mainly to the results of a survey of other companies' remuneration by an external third-party organization. The Company undertakes reviews of the payment ratios of performance-based remuneration and remuneration other than performance-based remuneration as appropriate, based on the results of a survey of other companies' remuneration and deliberations at the Governance Committee.

With respect to basic remuneration, the maximum limit of total remuneration is determined at general meetings of stockholders. Particulars of the agenda at the general meeting of stockholders are determined by the Board of Directors following a report from the Governance Committee. Bonuses are determined by the Board of Directors following a report from the Governance Committee, with consideration given mainly to the consolidated core operating income for each fiscal year that best represents the results of the Company's

global business operations, plus the historical record.

The maximum limit of total number of Stock Acquisition Rights as well as the limit of remuneration relating to the granting of the Stock Acquisition Rights as stock options to members of the Board is resolved at the general meetings of stockholders. Within that limit, the total number of Stock Acquisition Rights to be allocated to each internal member of the Board is determined at the Board of Directors meeting based on the standards determined by the Board of Directors after the Governance Committee makes a report to the Board of Directors. The issue price of the 11th series of stock acquisition rights allocated during the fiscal year under review (allocated on August 14, 2021) was ¥686,000 per stock acquisition right (¥686 per share).

Given their roles, remuneration for corporate auditors consists of basic remuneration only. With respect to basic remuneration, the maximum limit of total remuneration is determined at general meetings of stockholders. Within the scope of the maximum limit, basic remuneration to each corporate auditor is determined through consultation by corporate auditors based on the Company's internal regulations.

Regarding details of remuneration to individual members of the Board, the remuneration system is continuously reviewed by the Governance Committee. Based on the results, the Governance Committee makes a report to the Board of Directors, which makes a resolution. Accordingly, the Board of Directors believes that the said details are in line with the Decision-making policy.

## Details of Remuneration (April 2021 - March 2022)

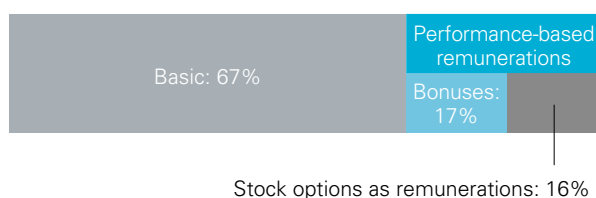
Position	Total remuneration (millions of yen)	Total remuneration by type (millions of yen)			Recipients
		Basic	Performance-based remunerations		
			Bonuses	Non-monetary remunerations Stock options as remunerations	
Members of the Board (excluding outside directors)	631	431	97	103	9
Corporate auditors (excluding outside corporate auditors)	79	79	—	—	3
Outside directors	48	48	—	—	4
Outside corporate auditors	36	36	—	—	3

Notes: 1. Recipients included one member of the Board (excluding outside directors) and one corporate auditor (excluding outside auditors) who retired during fiscal 2021.

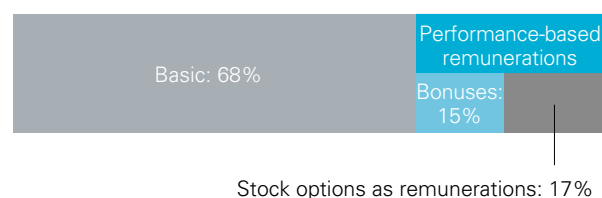
2. Total amounts of remuneration do not include the ¥17 million paid in salaries to one employee-director.

## Composition of Remuneration (April 2021 - March 2022)

## President and Representative Member of the Board



## Internal Member of the Board



## Overview of the Results of the Analysis and Evaluation

Toray's Board of Directors implemented "Questionnaire Survey to Evaluate the Effectiveness of the Board of Directors in the fiscal year ended March 31, 2022" of all the 17 Board members and corporate auditors. In addition, the Company had individual interviews with seven outside directors and outside corporate auditors to hear opinions in relation to the responses to the questionnaire. The collection and summary of the questionnaire and interviews were outsourced to a third-party organization to ensure transparency and objectivity. The survey results were analyzed and evaluated at the Governance Committee held on June 2, 2022, and the results of the analysis and evaluation were deliberated at the Board of Directors' meeting held on June 15, 2022. The overview of the analysis and evaluation results shown below describes the contents resolved at the Board of Directors meeting.

- (1) In fiscal 2021, the Board of Directors performed oversight and decision-making based on a deep understanding and sympathy with the Management Philosophy and Corporate Missions. As a result, we believe that the Board of Directors generally fulfilled its roles and responsibilities in indicating the direction of corporate strategies and other major courses of action in an appropriate manner.
- (2) In fiscal 2021, the Board of Directors held 14 meetings in total to perform oversight and decision-making in a timely and appropriate manner. Furthermore, it promoted reviews on the scope of delegating decision-making authority. Through these initiatives, we believe that the Board of Directors generally fulfilled its roles and responsibilities in establishing an environment conducive to appropriate risk-taking by the senior management in an appropriate manner.
- (3) With respect to the 14 Board of Directors meetings held in fiscal 2021, the attendance rate of the members of

the Board was 100%. Outside directors made remarks mainly from their respective professional viewpoints. Their opinions at the Board of Directors meetings, including the abovementioned remarks, were appropriately reflected in measures taken by the management. With respect to transactions causing possible conflicts of interest, internal procedures to handle them were appropriately carried out. For all of the reasons above, we believe that the Board of Directors generally fulfilled its roles and responsibilities in carrying out the effective oversight of members of the Board and the management from an independent and objective standpoint in an appropriate manner.

- (4) In light of foregoing, we believe that the Board of Directors generally fulfilled its roles and responsibilities in an effective manner in fiscal 2021. Regarding "diversity at the Board of Directors meetings," however, we will continue discussions, on the premise of ensuring quality, on the recruitment of human resources that can contribute to realizing the Toray Philosophy. With regard to "further activating discussions at the Board of Directors meetings," continuing from the fiscal year ended March 31, 2022, specific measures for improvement must be taken in the fiscal year ending March 31, 2023 and thereafter so as to further improve the effectiveness of the Board of Directors.
- (5) With respect to the opinions received from the members of the Board and corporate auditors while evaluating the effectiveness of the Board of Directors, the Governance Committee shall deepen discussions based on those opinions with a view to further improving the effectiveness of the Board of Directors, as necessary.

## Measures to ensure the effectiveness of the governance framework for listed subsidiaries

### Chori Co., Ltd.

- On March 25, 2020, Chori Co., Ltd. established the Governance Committee, which is a voluntary committee, to strengthen the independence, objectivity, and accountability of the functions performed by its Board of Directors regarding the nomination and remuneration of members of the Board. The subsidiary's Governance Committee also deliberates on matters that become necessary to be addressed from the perspective of protecting the interests of its general shareholders. No former employees, directors, officers, or other personnel of the Company serve as members of the Governance Committee, which is composed mainly of independent outside directors, hence the independence of the subsidiary in exercising authority over the election and dismissal of its directors is guaranteed.
- When exercising authority over the election and dismissal of the subsidiary's independent outside directors, the Company seeks to make an appropriate decision for each agenda item, while serving the interests of the subsidiary's shareholders in general. That decision depends on whether the candidate can oversee management from a broader perspective to further improve the transparency and fairness of management and can provide appropriate management advice from a medium- to long-term perspective, based on his/her sympathy to the management philosophies of Toray and the subsidiary, in addition to understanding of the businesses.

- The transactions between the Company and the subsidiary are concluded based on the negotiations with reference to several factors such as the market price.

### Suido Kiko Kaisha, Ltd.

- The Company's involvement in the appointment of director candidates in Suido Kiko Kaisha, Ltd. is limited to a reasonable extent in the interest of maintaining parent-subsidiary cooperation, to leverage the Company's knowledge and network so that the most suitable candidates can be elected for the enhancement of the subsidiary's corporate value. In addition, the subsidiary shall reserve the power of appointment to ensure the independence of its management.
- When exercising authority over the election and dismissal of the subsidiary's outside and independent directors, the Company seeks to make an appropriate decision for each agenda item, while serving the interests of the subsidiary's shareholders in general. That decision depends on whether the candidate can oversee management from a broader perspective to further improve the transparency and fairness of management and can provide appropriate management advice from a medium- to long-term perspective, based on his/her sympathy to the management philosophies of Toray and the subsidiary in addition to understanding of the businesses.
- The transactions between the Company and the subsidiary are concluded based on the negotiations with reference to several factors such as the market price.

## Compliance

### Basic Approach

In order to contribute to society by leveraging innovative technologies and advanced materials in line with its corporate philosophy, as well as by working to resolve major global issues, Toray Group must build and maintain relationships of trust with our various stakeholders. And in order to gain this trust, it is essential to comply with the

laws and regulations related to our business activities in each country in which we operate and maintain the highest level of integrity in all our actions. Therefore, top management focuses on a leadership role in placing the highest priority on compliance, while both the Group and its suppliers are required to promote ethics and compliance.

### Ethics and Compliance Structure

Toray has established an Ethics and Compliance Committee chaired by the President and consisting of the vice presidents. At this committee, management and workers come together to consider and discuss policies related to ethics and compliance. Moreover, this Committee reports on the operational status of the whistle-blowing system established by Toray Group, including the number of reports (consultations) and other details, to members of the Board.

During fiscal 2021, this Committee met twice to deliberate and discuss Toray Group's ethics and compliance activity results for fiscal 2020 and the activity plans and progress updates for fiscal 2021. We also discussed individual measures, such as the implementation of Compliance Month and collaboration on plans with

safety activities. In each workplace, instead of top-down initiatives led by each divisional/departmental general manager, we promote such activities by shifting to middle-up-down approach. As a starting point, the middle management at each workplace themselves considered and implemented the activities required in each workplace, then conveys the opinions obtained through the activities to the top management.

In initiatives for group companies around the world, Toray Group has established the Affiliate Companies' Compliance Meeting and the Overseas Affiliate Companies' Compliance Meetings under the Ethics and Compliance Committee. Through these committees, Toray Group is examining and promoting compliance activities in each company, country and region.

### Ethics & Compliance Code of Conduct

Toray Group has established the Ethics & Compliance Code of Conduct (revised in June 2022), which outlines the code of conduct as important rules to be followed by executives and employees of Toray Group, as well as the compliance helpline, and the promotion framework for ethics and compliance. The contents of the code are regularly reviewed by the Ethics and Compliance

Committee, chaired by the President and consisting of the vice presidents. Also, reports are made and submitted to the Board of Directors by this committee. The code of conduct is thoroughly communicated to all Toray group executives and employees including contracted, part-time, and temporary workers.

### Corporate Ethics and Legal Compliance Education

Toray posts information on CSR and legal compliance on its corporate intranet. Toray Group circulates important information about legal and compliance matters that are highly relevant to its business in Japan and overseas. Besides, for the entire group companies, we promote active discussions in workplaces through workshops to examine these matters and study cases of corporate misconduct.

Since fiscal 2012, Toray has provided e-learning courses on corporate ethics and legal compliance for all executives and employees, including contracted,

part-time, and temporary workers. Themes in the training courses set for each fiscal year included explanations to instill Toray's code of conduct and whistle-blowing system, as well as case studies on anti-bribery, human rights and harassment. In fiscal 2021, the Company covered the Whistleblower Protection Act, which had been revised and enforced in June 2022, in the themes. Going forward, Toray will continuously provide information and education for further penetration. In addition, group companies in Japan are also using these materials to implement their own training.

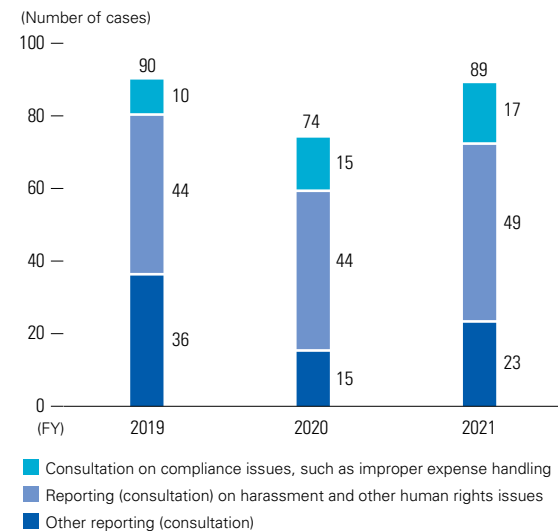


## Expanding the Whistle-Blowing System

Toray established the Corporate Ethics and Legal Compliance Helpline as a whistle-blowing system in fiscal 2003 and expanded the system to include all group companies in Japan in fiscal 2010. In fiscal 2021, Toray and its group companies in Japan received a total of 89 whistle-blowing reports and consultations. The facts were investigated with utmost care to protect against any risk of negative impact on the individual reporting to or consulting with the hotline. If a problem was identified, efforts were made to solve the problem and measures were taken in accordance with the internal rules of each company, such as company regulations. The operational status of the whistle-blowing system is reported to the Board of Directors and the Board of Corporate Auditors by the Ethics and Compliance Committee.

In 2022, we developed internal regulations based on the Whistleblower Protection Act, which had been revised and enforced in June of the same year, and added executives, employees who have retired within one year, and business partners to the users of the whistle-blowing system. We also made our own revisions,

### Content and Number of Whistle-Blowing (Consultation) for Toray Group



such as adding rules regarding the designation of personnel who handle whistleblower-related tasks.

## Reinforcing Compliance in Product Quality Assurance

Toray Group is pursuing five major issues to reinforce product quality assurance compliance throughout the Group.

### 1. Reinforcement of structures related to quality assurance systems of the entire Toray Group

The Group provides guidance to Toray Industries and its group companies globally regarding the development of quality assurance system, and audits the effectiveness of these systems and operations. Based on the formulated product quality assurance vision, the organizations design initiatives to close the gap between the vision and actual performance.

### 2. Development of human resources and creation of workplace culture not allowing any misconduct

Toray has designated November as Quality Month. Coinciding with this initiative, the Company has conducted quality assurance compliance education since fiscal 2020. By providing educational materials to Toray Industries as well as its group companies in and outside Japan, each department and company is taking the initiative in promoting training. (Number of training participants in fiscal 2021: 20,395)

### 3. Understanding of actual state of agreements with customers and establishment of guidelines related to product quality (assurance)

Based on the guidelines for product quality assurance agreements, we continue to assess agreements and review their provisions as necessary.

### 4. Appropriate maintenance or control and modernization or fulfillment of measuring equipment

The Group has risk assessment tables for judging the necessity of upgrading or conducting maintenance on measuring equipment, and use them to identify devices in need of an upgrade.

### 5. Improvement of quality data management system to not allow any misconduct

The Group is developing data management systems that minimize human involvement, such as by automating measurement and transfer of measurement data, and issuance of inspection reports.

## Compliance

**Concerning Inappropriate Actions Relating to UL certification in Resins Business**

Certain resin products were improperly identified by Toray as receiving certification from Underwriters Laboratories LLC (UL), a global third-party safety science organization headquartered in the United States. Regarding UL94 that indicates the flame retardancy performance of resins, we learned the case that certain types of samples submitted to UL for testing were different from the resins certified by UL. We also found the case that some types of resins, which had different compositions from what was certified by UL, were manufactured and sold to customers. This fact was announced on January 31, 2022, and on the same day the Company formed an expert committee to conduct a thorough investigation and investigate the root cause. On April 8, the Company received the report that sets out the findings of the investigation along with recommended measures to prevent recurrence. Pointing out the fact that inappropriate actions had continued for many years, with analysis of the causes and recommends measures for prevention of recurrence, the report recommended six recurrence prevention measures.

Taking this fact gravely, the Company established a policy on recurrence prevention measures and began specific measures, the details and the state of progress of which are posted on the Company's website. The senior management team will take responsibility for ensuring that all executives and employees work together to thoroughly prevent any recurrence. The Company is determined to restore complete confidence in its integrity and to once again demonstrate what Toray can achieve.

**Recommendations and Toray's response (recurrence prevention measures)****(1) Enhancing compliance awareness****1. Improving compliance education**

Promote thorough training group-wide concerning private-sector certification and standards based on the recommendations.

**2. Incorporating quality assurance contribution into performance reviews**

Update the human resource evaluation system with more emphasis on compliance contribution, including quality assurance efforts.

**3. Sharing recurrence prevention activities**

Publicize the progress made with recurrence prevention measures on Toray's corporate website.

**4. Heightened and continued serious commitment by the senior management team**

Ensure senior managers continually communicate to employees the importance of compliance while declaring their own personal compliance responsibility and mission.

**(2) Establishing work procedures and an education system for UL-related operations**

Document the proper operation procedures and the responsibilities and roles of the relevant personnel.

Promote training on UL rules, and obtain third-party audits and verification of Toray's certification management system.

**(3) Transferring personnel between business divisions and other interaction**

Implement personnel changes of quality assurance department managers across business divisions, and personnel changes across business divisions at the management level.

Conduct training sessions using this case as a teaching tool, attended by employees and executives from different business divisions.

**(4) Establishing a system to confirm UL compliance by the internal quality assurance organizations and/or external organizations**

Document the specific role of the Quality Assurance Division for UL and other certification work, and obtain audits and verification that roles are being properly performed from a third-party.

**(5) Strengthening the organizational structure of quality assurance organizations (Monitoring and supervision of quality assurance sections activities by Quality Assurance Division and other internal and/or external organizations)**

Create mechanisms for the Quality Assurance Division to audit each of its departments, and receive operational audits of the entire Quality Assurance Division from an external organization.

**(6) Establishing a system to ensure any misconducts are reported to Toray administrative organizations and other parties****1. Clarifying rules for cases in which employees become aware of misconduct or suspected misconduct**

Clarify the obligation to report misconduct in the quality assurance and product safety management regulations.

**2. Establishing a system to encourage use of whistle-blowing hotline**

Improve the guide on how to use the whistle-blowing hotline, including by providing specific examples of reporting.

**3. Improved and continued internal surveys (Toray group-wide surveys) by quality assurance organizations**

Ensure that all employee responses, including comment box details, be sent directly to the Quality Assurance Division. In group-wide surveys, clearly state that violations of private-sector certification rules fall within the scope of the survey.

In response to the recommendations of the expert committee, we post the latest information on our website regarding the progress of our measures to prevent recurrence.

## Competition Law Compliance, Anti-Corruption, and Anti-Bribery

### 1. Competition Law Compliance

The Ethics & Compliance Code of Conduct, revised in June 2022, defines the code of conduct related to competition laws that must be observed by all Toray group executives and employees. Educational materials related to competition laws have been prepared in Japanese and English for all Toray group employees. Within Japan, the Group prepares and utilizes compliance training materials and gathers examples of compliance violations related to competition laws. In fiscal 2021, no legal action was taken against Toray Group on the grounds of anti-competitive behavior, antitrust or monopoly practices.

### 2. Anti-Corruption and Anti-Bribery

In January 2020, Toray Group formulated the Anti-Bribery Regulations that explicitly prohibit offering and accepting

bribes to or from public officials and business partners, and established the rules for approval and reporting when offering or receiving money or other benefits to or from public officials and business partners. Similar rules have also been introduced at both domestic and overseas group companies.

The Ethics & Compliance Code of Conduct defines the code of conduct related to anti-corruption and anti-bribery measures that must be observed by all Toray group executives and employees. Accompanying guidelines and educational materials covering to the anti-corruption and anti-bribery measures have been prepared in Japanese and English for all Toray group employees and they are shared on a group-wide basis. No legal action was taken against Toray Group on anti-corruption or anti-bribery grounds in fiscal 2021.

## Protection of Personal Information

In order to comply with Japan's Act on the Protection of Personal Information, Toray has established Regulations for the Management of Personal Information, together with a management framework and practices to ensure each department manages personal information appropriately. Audits are regularly conducted into the management conditions in each department.

In fiscal 2021, the Company received no complaints concerning personal information and there were no data breaches. Major Toray group companies in and outside Japan appropriately conduct management in accordance with the management systems and methods specified by the internal rules of each company.

## Promotion of Mission B.E.A.R. Activities

In fiscal 2018, Toray Group launched a new initiative with the slogan "Have the integrity to do the right thing in the right way." The initiative includes the following four principles for taking more effective action to ensure compliance.



### Compliance Action Principles

**B:** Be fair, be honest and have integrity

**E:** Encourage respect and communication

**A:** Adopt a *Genba* (workplace) approach—Look to the facts!

**R:** Responsibility as a member of our excellent company

Under the name "Mission B.E.A.R.," an acronym of the first word of each principle, Toray group companies formulate declarations and action plans related to compliance,

and implement initiatives that correspond to their individual situations. Toray Group implements periodic follow-ups for the initiatives of each company, shares the effective initiatives of each company within the Group, and encourages each company to take the initiative in evolving their compliance activities.

In fiscal 2021, Toray continued to assist each company's compliance promotion activities. Including the Compliance Promotion Month, steps were actively taken to share compliance-related initiatives, utilize the results of compliance awareness questionnaires, and carry out collaborative projects with safety activities at plants. Through these activities every effort is being made to strengthen risk response that emphasizes factors unique to each region and type of business while reinforcing Toray Group's integrity-driven corporate culture.

## Compliance

### Implementing Internal Legal Audits

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In fiscal 2021, Toray implemented internal legal compliance audits relating to high-priority items including the Antimonopoly Act, bribery regulations, insider trading regulations, and concluding agreements, for designated departments of Toray and its group companies in Japan. Nothing inappropriate was found in any of the items covered, but we will continue to raise awareness of legal compliance by sharing information through educational activities and in-house magazines.

## Risk Management

### Improving Security Trade Controls

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#### 1. Watching the Latest Trends and Management Strategies for Security Trade Controls

Concerns about the spread of conventional mass weapons of destruction and changes in the international security balance necessitate risk management addressing security trade controls. Toray convenes a Security Trade Administration Committee comprising officers of divisions that are involved in exports and technology transfer. In fiscal 2021, the committee decided on measures to implement for the fiscal year after considering pressing risks based on recent international circumstances and regulatory trends. The committee members also convene a Divisional Security Trade Administration Committee that communicates corporate measures and implements supplementary programs, such as precautions to be taken by departments and group companies under its supervision.

#### 2. Practically Addressing Risks

Toray Group performs risk management of security trade controls with regard to the export of all 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 within Toray's divisions and group companies**

In order to avoid the risk of COVID-19 infection, existing training systems have been reorganized: highly specialized on-the-job trainings have been switched to web conferences, and basic-level specialized trainings have been conducted through e-learning courses. Toray conducted trainings to provide the necessary practical knowledge to the mid-level employees that play a central role in implementing security trade controls, as well as training to newly appointed managers to encourage appropriate on-site management. A total of 1,544 employees participated in 13 courses and 3,130 employees participated in e-learning courses.

The Company also conducted a series of advanced courses for employees with specialized expertise to practice classifications. A total of 634 employees participated in three courses via web conference.

In addition, the Company systematically encourages employees to take the various qualification exams authorized by the Center for Information on Security Trade Controls in Japan. A total of 177 Toray group employees passed in fiscal 2021, bringing the cumulative number of qualified examinees in the Group to 4,334.



**(2) Conduct 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 enhance its risk management.

**(4) Improved inspection systems**

Toray has fully linked its security trade control system with its backbone sales system in order to prevent erroneous shipments due to human error. In order to improve management efficiency through use of the linked system, support was given to outstanding initiatives and the successful cases were shared with other departments.

## Business Continuity Plan Initiatives

### Ensuring Preparedness for Major Earthquakes

In fiscal 2018, Toray created and began administering BCPs for key products selected from each business in accordance with the Procedures for Developing BCPs for Designated Key Products in the event of an earthquake. Group companies in and outside Japan started this measure in fiscal 2019. In addition, since fiscal 2012, Toray Group has continued to conduct company-wide drills on setting up an emergency response headquarters. In fiscal 2021, in similar fashion to fiscal 2020, the Company conducted initial response drills online, on the assumption that a large number of employees could be working from home due to the suspension of transportation services and the outbreak of COVID-19, in light of Toray's enhanced network environment and the improved reliability of public network infrastructure. Toray Group will continue to strengthen its capacity to respond to earthquakes with training and other measures.

### Handling Water Hazard Risks (Floods, Storm Surges, Etc.)

In recent years, storm and flood disaster such as a typhoon and heavy rain has been in an increasing trend, causing devastating damage, especially in Japan. In light of this, the Risk Management Committee decided to include business continuity risks from water hazard risks as part of the fifth three-year set of priority risks (fiscal 2021–2023). Specifically, in fiscal 2020, Toray developed its own Wind and Flood Damage Control Checklist based on the Wind and Flood Damage Control Guidelines for

Hazardous Materials Facilities published by the Fire and Disaster Management Agency at the Ministry of Internal Affairs and Communications, and started reinspecting wind and flood damage control measures at manufacturing sites at Toray and its group companies in Japan. Subsequently in fiscal 2021, Toray conducted a survey on the risk of water-related disasters at each of its manufacturing bases overseas. The survey of Toray and group companies' manufacturing sites (89 companies, 146 plants), including those located overseas, consequently identified 40 plants operated by 19 companies which are located in potential flood zones.

In response to the identified risks, we have been systematically implementing the countermeasures as our plans formulated in fiscal 2021 for ensuring the safety of human life and preventing secondary damage at operational bases in potential flood zones. In addition, for key products selected based on the assumption of a large-scale earthquake, for each product the BCP promotion department investigated water damage risks for the entire manufacturing site and supply chain from the perspective of supply continuity. Based on the results, the existing key product (earthquake) BCP was revised and a key product (earthquake/water damage) BCP was formulated to reflect responses to water damage risks. As a result of these activities, we decided to complete activities that prioritize business continuity risk due to water-related disasters in 2021.



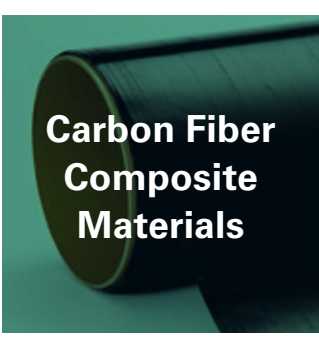
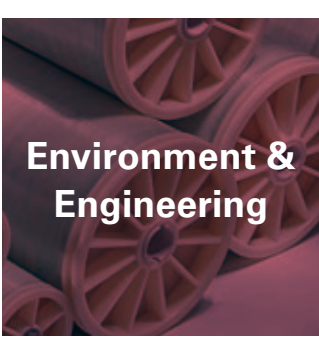

## Addressing Information Security Risk

Toray Group has established the position of Corporate Information Security Officer as the officer responsible for the entire security risk of the Group, based on regulations as its Confidential Information Management Regulations and Regulations for the Management of Personal Information. Under the supervision of the Corporate Information Security Officer, the role and responsibilities of each division and department are clearly defined. At the same time, every effort is being made to strengthen information security by implementing specific measures put forward by the Information Security Committee established in each department.

In April 2022, Toray Group established the Toray Group

Basic Policy on Information Security in order to strengthen governance with the aim of reducing information security risks, such as information leaks, by appropriately managing confidential information throughout the Toray Group. Each group company in and outside Japan formulates basic rules in accordance with the regulations and standards of Toray Industries, and promotes measures related to information security. Moreover, information security has been included in the fifth three-year set of priority risks for Toray Group (fiscal 2021–2023), and more comprehensive initiatives will be taken group-wide. The plan and progress regarding priority risks are reported to the Board of Directors on a regular basis.

## Results by Segment for Fiscal 2021

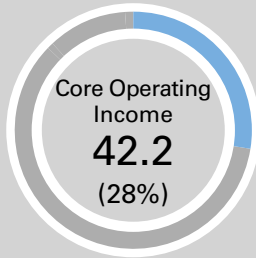
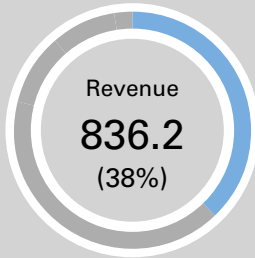
Segments	Summary of Financial Results
 <p><b>Fibers &amp; Textiles</b></p>	<p>Demand recoveries were seen both in Japan and abroad, and while the difference in quantity was positive, the net change in price was negative due to higher raw material prices compared with the previous fiscal year. The cost variance was also negative due to increases in operating expenses and fixed manufacturing costs. In the apparel applications, some applications continued to be affected by COVID-19, while sports and outdoor applications performed strongly. In the industrial applications, although recovery was seen in some applications, the automotive applications were affected by the decline in automobile production volume.</p>
 <p><b>Performance Chemicals</b></p>	<p>Demand in the resins business was strong overall, given the rebound from the COVID-19 pandemic and the recovery of the Chinese economy. In the chemicals business, demand for fine chemicals was robust in addition to a recovery in the basic chemicals market. In the films business, while the battery separator films for lithium-ion secondary batteries were affected by price decline, polyester films for optical applications and electronic components performed strongly. In the electronic &amp; information materials business, OLED-related demand increased.</p>
 <p><b>Carbon Fiber Composite Materials</b></p>	<p>While the segment was affected by the increase in raw material prices and the decline in the production rate of commercial aircraft, the sales of wind turbine blades and pressure vessels in the industrial applications expanded, and there was growth in the sports applications. In addition, the segment proceeded with passing on the rise in raw material prices to the sales price.</p>
 <p><b>Environment &amp; Engineering</b></p>	<p>In the water treatment business, demand for reverse osmosis membranes and other products grew strongly, while shipment to some regions were affected by COVID-19. Among domestic subsidiaries in the segment, an engineering subsidiary experienced increases in the shipment of some electronics related equipment.</p>
 <p><b>Life Science</b></p>	<p>In the pharmaceutical business, sales of pruritus treatment REMITCH®* were affected by the introduction of its generic versions as well as by a NHI drug price revision. In the medical devices business, shipment of dialyzers for hemodiafiltration grew strongly in Japan, and demand for other medical devices showed a recovering trend primarily outside Japan.</p> <p>* REMITCH® is a registered trademark of Torii Pharmaceutical Co., Ltd.</p>

Segment Information

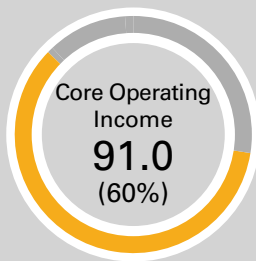
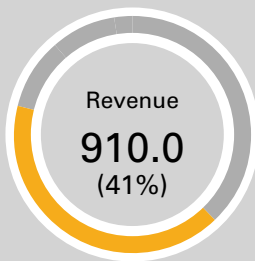
Performance (Billion yen)

\* The figures in parentheses of each segment are composition ratios by segment.

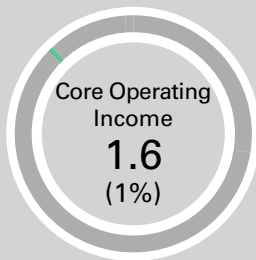
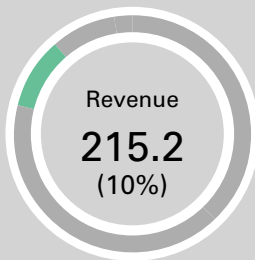
Main Products



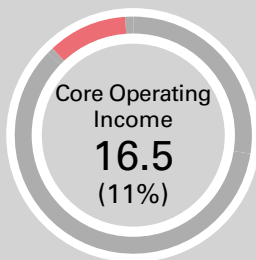
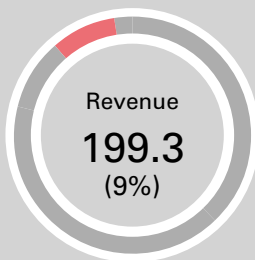
- Filament yarns, staple fibers, spun yarns, woven and knitted fabrics of nylon, polyester, acrylic, and others
- Nonwoven fabrics
- Ultra-microfiber nonwoven fabric with suede texture
- Apparel products, etc.



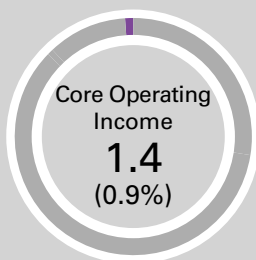
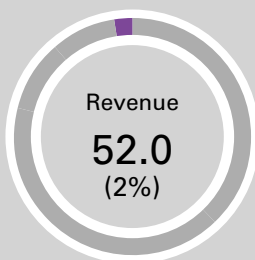
- Nylon, ABS, PBT, PPS, and other resins and molded products
- Polyolefin foam
- Polyester, polyethylene, polypropylene, and other films and processed film products
- Raw materials for synthetic fibers, and other plastics
- Fine chemicals
- Electronic and information materials, and graphic materials, etc.



- Carbon fibers, carbon fiber composite materials, and their molded products, etc.



- Comprehensive engineering
- Condominiums
- Industrial equipment and machinery
- IT-related equipment
- Water treatment membranes and related equipment
- Materials for housing, building, and civil engineering applications, etc.



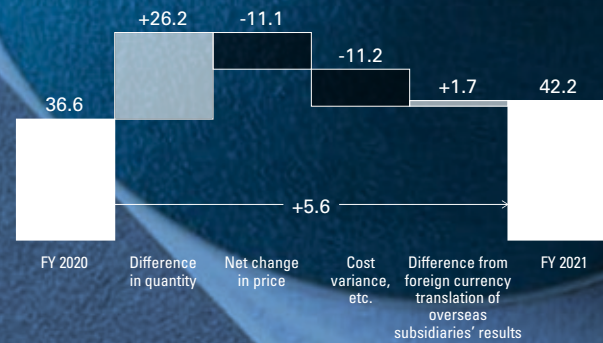
- Pharmaceuticals
- Medical devices, etc.

\*Excludes other businesses, equivalent to ¥15.9 billion (1%) in revenue and ¥3.0 billion in core operating income, and adjustment of core operating income of ¥23.6 billion. The composition ratio by segment of core operating income is calculated excluding the adjustment amount.

# Fibers & Textiles

(FY)	2020	2021	Changes	2022 (Forecast)
Revenue (Billion yen)	719.2	836.2	+16.3%	1,017.0
Core Operating Income (Billion yen)	36.6	42.2	+15.4%	54.0
Core Operating Margin	5.1%	5.0%		

Changes in Core Operating Income (Billion yen)



## Revenue

¥836.2 billion

## Core Operating Income

¥42.2 billion

## Core Operating Margin

5.0%

## ROA (Core Operating Income/Assets)

5.0%

## TOPICS

### Development and Sale of 100% Plant-Based Nylon Fiber

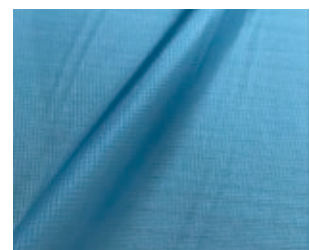
Toray has commenced sales of Ecodear™ N510, marking the first time that a nylon fiber made from 100% plant-based\* polymer has been commercialized under the Ecodear™ integrated brand. This nylon fiber is made by polymerizing and spinning chemical raw materials derived from castor-oil plant and corn, providing high melting point and superior dimensional stability. The nylon fiber also has the equivalent strength and heat resistance as conventional nylon 6, enabling sustainable product planning with the same specifications as products using existing petroleum-derived nylon.

Textiles range from light weight fabrics to cut-and-sew materials mainly for sports and outdoor applications, while fibers extend from items for these applications to inner lace and material applications. We propose these as a sustainable, high-end zone merchandise in Japan and overseas. In addition, we will promote the development of wide-ranging applications by making fibers thinner to reduce their weight and introducing modified cross-sectional shapes to add functionality.

\*ISO16620-1 3.1.5 biobased synthetic polymer content (plant-based ratio) is 100%.



Garment



Textiles



## Messages from the General Managers of the Business Divisions

### Fibers & Textiles Business



**Kenichiro Miki**

General Manager,  
Fibers & Textiles Division

#### Business Strengths

The strength of Toray's Fibers & Textiles business is its ability to provide appropriate solutions to diversifying needs by freely combining the following: (1) long-term accumulated R&D and a diverse range of materials, (2) supply chain responsiveness encompassing fibers, textiles, and garments, and (3) global business development.

#### Current Business Conditions and Initiatives

The market has been gradually recovering overall, but the demand structure has changed significantly in some areas for apparel applications following lifestyle and consumption trend changes amid COVID-19. Meanwhile, business conditions are once again becoming increasingly uncertain mainly due to the prolonged Ukraine crisis sharply driving up energy prices, rising global inflation, U.S. and European monetary tightening slowing down the global economy, and sharp yen depreciation. Amid unpredictable business conditions, our challenge is to remain sensitive to social changes and meet new market needs in growth business fields.

#### Achievement and Progress in Fiscal 2021 for Issues set in AP-G 2022

Though there was a partial impact from the decline in automobile production volume, demand generally recovered both in Japan and overseas. One of the AP-G 2022's basic policies of the Fibers & Textiles Division is: continuously strengthen the business structure; expand in growth regions and growth business fields; and enhance profitability by promoting a differentiation strategy and addressing sustainability. Under this policy, we have made progress in expanding businesses in growth business areas such as sports, outdoor, and interior applications for EVs. Moreover, we have expanded businesses to greater extent than planned mainly through our efforts involving &+™, a brand of sustainable recycled fiber made from used polyester (PET) bottles.

#### Major Initiatives in Fiscal 2022

In fiscal 2022, the final year of AP-G 2022, we still aim to return to a growth trajectory toward the next medium-term management program. To this end, we will continue to address major initiatives and solidly capture new demand mainly through business expansion in growth business fields and regions and enhancement of profitability by promoting a differentiation strategy, driven by airbags, nonwoven fabrics, nonwoven material, and integrated business from fiber to textiles and further to garments. We will also achieve this through the promotion of business expansion by addressing sustainability, by the expansion of the GR businesses, which are centered on energy saving materials, biomass, and recycling, to help address global environmental problems, and the LI businesses centered on the medical and healthcare fields.

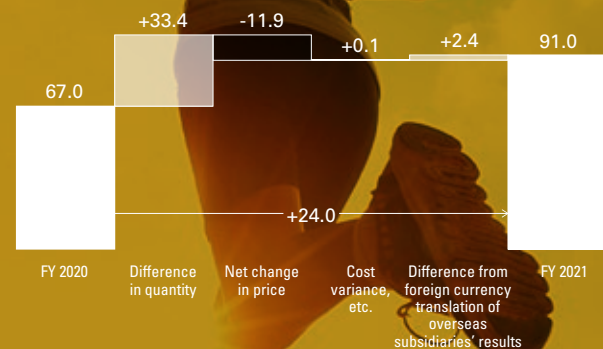
#### Message to Readers

Business conditions and values are changing significantly, and we will leverage these changes as opportunities to ceaselessly pursue R&D with the aim of creating innovative products in cooperation with our customers.

# Performance Chemicals

(FY)	2020	2021	Changes	2022 (Forecast)
Revenue (Billion yen)	720.4	910.0	+26.3%	995.0
Core Operating Income (Billion yen)	67.0	91.0	+35.8%	65.0
Core Operating Margin	9.3%	10.0%		

Changes in Core Operating Income (Billion yen)



## Revenue

¥910.0 billion

## Core Operating Income

¥91.0 billion

## Core Operating Margin

10.0%

## ROA (Core Operating Income/Assets)

8.2%

## TOPICS

### Establishment of Battery Separator Film Joint Venture in Hungary

In June 2022, LG Chem, Ltd. (LG Chem) invested US\$375 million in Toray Industries Hungary Kft. (THU)—a wholly owned Toray Hungarian subsidiary that manufactures and sells separator films for lithium-ion secondary batteries (LIB)—to establish LG Toray Hungary Battery Separator Kft. (LTHS), a 50:50 joint venture, with THU as the surviving company.

LTHS aims to manufacture and sell battery separator films for automotive LIBs, mainly supplying LG Group bases in the U.S. and Europe. LG Chem plans to acquire an additional 20% equity from Toray after 30 months in order to secure management control.

LG Chem and Toray excel in coating technology and film substrate film-forming technology, respectively. LTHS will license technologies from both companies and leverage synergies with LG Chem's relevant technologies in order to expand automotive application businesses. As in the past, Toray Group will continue to develop, produce, and supply its battery separator film-related operational bases located in Japan and the Republic of Korea.

## Messages from the General Managers of the Business Divisions

### Resins & Chemicals Business



**Kazuhiko Shuto**  
General Manager,  
Resins & Chemicals Division

#### Business Strengths

The Resin & Chemicals Business' strengths lie in the relationships it has built with customers to date. This is based on: (1) Toray's integrated production system for raw materials, polymers, and compounds; (2) stable supply, quality control, and high value-added product development at bases in 10 countries overseas developed by utilizing Toray assets such as fibers & textiles operations, which was the first to make inroads overseas; and (3) strong product lines through unique chemicals-related synthesis technology.

#### Current Business Conditions and Initiatives

Market conditions are currently deteriorating due to the delayed recovery of automobile production and the economic slowdown in China. However, we aim to become a true solution provider to realize customer success by developing high-performance products in new growth fields and expanding globally to enable us to respond to drastically changing social systems and industrial structures amid moves toward a sustainable society, the promotion of ICT applications, the ever-increasing global population, and aging society.

#### Achievement and Progress in Fiscal 2021 for Issues set in AP-G 2022

As for resins, demand for high-performance resins such as PPS has grown globally with the surge in demand for electric vehicles, a fast-growing market. As to transparent ABS for which demand continues to grow, Toray Plastics (Malaysia) Sdn. Berhad, one of our subsidiaries in Malaysia, added a new production line in May 2021 and increased market share. In chemicals, we are expanding the fine chemicals business and expanding the veterinary medicines business overseas.

#### Major Initiatives in Fiscal 2022

We would like to again offer our sincere apologies for any inconvenience and concern caused to society and our customers by the inappropriate actions related to UL certification. We will place the highest priority on strengthening compliance so that we can become a truly trusted partner. Business-wise, we will continue to reduce CO<sub>2</sub> emissions throughout the supply chain through further global expansion of high-performance products, promotion of the resin recycling business, and reduction of GHG emissions at our plants.

#### Message to Readers

Since its establishment, the Resins & Chemicals Business has been creating new value together with customers through the development and sale of high-performance products, supporting people's enriched lifestyles and contributing to the development of society. Going forward, we will continue to create materials that contribute to an enriched and sustainable society.

## Performance Chemicals

### Messages from the General Managers of the Business Divisions

#### Films Business



**Kazuhisa Itsuji**

General Manager,  
Films Division

#### Business Strengths

We have developed fundamental technologies involving polymer design, film forming processes, and film quality design over the past 60 years. On this basis, we manufacture the highest level of functional films produced using nanotechnologies such as nanoalloys and nano surface control at six bases worldwide, and sell them in a wide range of fields that include information and telecommunications, electronics, and the environment and energy.

#### Achievement and Progress in Fiscal 2021 for Issues set in AP-G 2022

Expanding high value-added products centered on electronic component-related applications was a top priority, while sales remained strong driven by stay-at-home demand from the second half of 2020 onward. In addition, the rapid shift to electric vehicles has increased automotive applications, and we have been able to cover cost increases because of surging raw material prices.

#### Current Business Conditions and Initiatives

As electronic circuit components become more highly integrated, there has been a need for more sophisticated products and greater supply capacity for the Company's functional films, such as MLCC production films. In automobiles, demand for OPP film for capacitors is also increasing due to the accelerating shift to xEVs. The new line at the Tsuchiura Plant—which was expanded in fiscal 2021—is already in full operation, and there is an urgent need for further production increases. In addition, the need for creating a circular economy is growing stronger every day globally, so prompt solutions are needed. Meanwhile, not only raw material prices but also energy and logistics costs are soaring, so passing these costs on to sales prices is also a major challenge.

#### Message to Readers

Toray was the first in the world to start PCR (post-consumer recycling) of MLCC production films, establishing a recycling system to collect and reuse used film products from customers. In addition, we will make addressing global environmental problems our top priority in the Films Business through initiatives that include conserving resources by making films thinner, shifting to non-petrochemical raw materials, and developing biodegradable films.



## Messages from the General Managers of the Business Divisions

### Electronic & Information Materials Business



**Hiroshi Enomoto**

General Manager,  
Electronic & Information  
Materials Division

#### Business Strength

We handle a large number of products with excellent material properties, a strong patent network, and solid personal connections with major domestic and overseas customers that have continued since the early days of their development. In particular, our materials for OLED displays and semiconductor/electronic components are product groups that embody our “The One” Strategy in Electronic & Information Materials: (1) developing, adopting, and mass-producing new products ahead of the competition; (2) establishing strong entry barriers; and (3) providing product lines that realize world standards. These product groups have high market shares.

#### Current Business Conditions and Initiatives

The current slump in global IT-related demand stems from the end of the special demand caused by COVID-19 and its repercussions, prolonged COVID-19 lockdowns in China, and the Russian and Ukrainian situation, while prices are surging for nearly all raw materials. Against this backdrop, we are working to thoroughly reduce costs and pass them onto sales prices since demand is expected to remain weak for the time being.

#### Achievement and Progress in Fiscal 2021 for Issues set in AP-G 2022

We were unable to launch some new products as planned since COVID-19 lockdowns in various countries prompted customer evaluation freezes. However, sales rose for our products which we have competitive strengths, partly thanks to a boost from the special demand caused by COVID-19, resulting in record-high profits.

#### Major Initiatives in Fiscal 2022

We are drastically reducing costs by optimizing production systems, innovating production processes, and utilizing DX in order to strengthen management structures to prepare for delayed demand recoveries for IT devices. On the other hand, we assume that global demand for electronics products will continue to increase over the long term driven by the need for energy-saving technologies and the spread of xEVs. Consequently, working closely with our customers to anticipate their needs, we focus on the rapid and timely development of new products based on further demand growth for our products which we have competitive strengths.

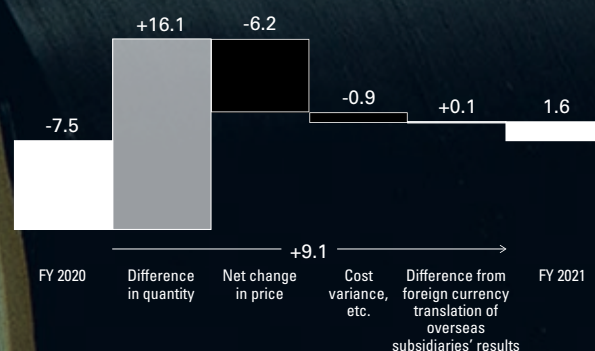
#### Message to Readers

The Electronic & Information Materials Division will utilize Toray Group’s advanced core technologies in the creation of high value-added electronic materials that meet new customer requests. Through the supply of these materials, we will strengthen the partnerships with its customers while realizing business expansion that is both sustainable and environmentally friendly.

# Carbon Fiber Composite Materials

(FY)	2020	2021	Changes	2022 (Forecast)
Revenue (Billion yen)	182.9	215.2	+17.7%	282.0
Core Operating Income (Billion yen)	(7.5)	1.6	—	14.0
Core Operating Margin	—	0.7%		

Changes in Core Operating Income (Billion yen)



## Revenue

¥215.2 billion

## Core Operating Income

¥1.6 billion

## Core Operating Margin

0.7%

## ROA (Core Operating Income/Assets)

0.3%

## TOPICS

### Increase Large Tow Carbon Fiber Production Capacity

Toray has decided to increase production facilities for large tow\* carbon fiber at its U.S. subsidiary Zoltek Companies, Inc. This capacity expansion involves plans by Zoltek to increase the production capacity of its Mexican plant from the current 13,000 tons to 20,000 tons/year, which together with the Hungarian plant's 15,000-ton production capacity will bring Zoltek's total annual production capacity to approximately 35,000 tons. The capital investment is approximately US\$130 million and production is scheduled to start in 2023.

In recent years, wind power generation has been newly introduced as a renewable energy source with low environmental impact. In addition, demand for longer and lighter wind turbine blades to improve power generation efficiency is increasing, while the use ratio is rising for carbon fiber, which has lower specific gravity and higher specific strength and rigidity. Against this backdrop, Zoltek will continue to meet growing global demand mainly for wind turbine blade applications by leveraging its strengths through its production facilities in the United States, Hungary, and Mexico.

\*Carbon fiber having more than 40K filaments (40,000 fibers) that is used as a relatively low-priced material and satisfies industrial application requirements, including those related to wind turbine blades and strengthening agents for resin compounds.



Mexico Plant



Hungary Plant

## Messages from the General Managers of the Business Divisions

### Carbon Fiber Composite Materials Business



**Minoru Yoshinaga**

General Manager,  
Torayca & Advanced  
Composites Division

#### Business Strengths

Leveraging high functionality and reliability (ease of use), we will provide optimal products as a leading company through our global supply network and supply capacity, featuring a broad array of products that use regular tow, large tow, and thermoset and thermoplastic resins.

#### Current Business Conditions and Initiatives

**Business Conditions:** Aircraft demand has begun to show signs of recovery but remains far below levels prior to COVID-19. In addition, market conditions are becoming increasingly severe due to energy prices surging amid global political instability and expansion by competitors in Japan and the Republic of Korea. However, against the backdrop of increasing environmental needs and the mobility revolution, demand has increased for carbon fibers in fields such as wind turbine blades, fuel cell vehicles and “flying cars” or Urban Air Mobility (UAM), while greater interest in health and outdoor activities has led to a steady rise in sports applications, such as bicycles, fishing rods, and golf shafts.

**Major Initiatives:** While ensuring that demand for aircraft is recovering, the Company will continue to aggressively invest in environmental and mobility applications, where demand is growing, as well as strengthen its competitiveness through quality and integrity, improved technical services, and cost reductions.

#### Achievement and Progress in Fiscal 2021 for Issues set in AP-G 2022

Our understanding of the medium- to long-term business environment and the basic strategies have not changed. Although demand for aircraft is sluggish, we have pursued higher sales for regular tow for industrial and sports applications, where demand is rising. As for large tow, Zoltek has completed expansion at its plant in Hungary for growing wind turbine blade applications and is currently increasing capacity at its plant in Mexico.

#### Major Initiatives in Fiscal 2022

Continuing from fiscal 2021, we will pursue business expansion and structural reforms in order to capture growing demand for industrial applications. We will cover rising raw material and fuel prices by raising prices of our products based on product value enhancements by strengthening our competitiveness in quality improvements and technical services.

#### Message to Readers

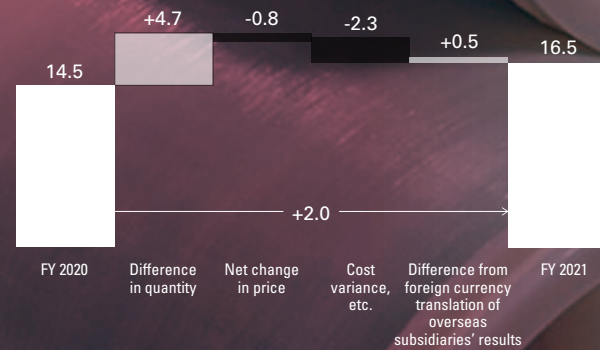
We will expand our businesses through the provision of optimal products and contributions to society by identifying business opportunities arising from carbon-neutral societies that are changing, expanding, and accelerating on a global scale. In order to realize a sustainable society of the future and the mobility revolution, we will propose and provide optimal materials globally that solve problems by fully leveraging our comprehensive corporate strengths.



# Environment & Engineering

(FY)	2020	2021	Changes	2022 (Forecast)
Revenue (Billion yen)	193.5	199.3	+3.0%	235.0
Core Operating Income (Billion yen)	14.5	16.5	+13.9%	22.5
Core Operating Margin	7.5%	8.3%		

Changes in Core Operating Income (Billion yen)



## Revenue

¥199.3 billion

## Core Operating Income

¥16.5 billion

## Core Operating Margin

8.3%

## ROA (Core Operating Income/Assets)

5.5%

## TOPICS

### RO Membrane Order Received for Desalination Plant in the Kingdom of Saudi Arabia

Toray has recently received an order for reverse osmosis (RO) membranes for the Rabigh 3 Desalination Plant in the Kingdom of Saudi Arabia. We were selected after having been highly evaluated for our solid track record in the Middle East that spans more than a decade and for being able to offer the technical support necessary for stable operations. Products and technical services will be provided by Toray Membrane Middle East LLC (TMME), a local subsidiary established in 2015 in Dammam 3rd Industrial City in line with the Saudi Vision 2030.

The Rabigh 3 Desalination Plant boasts a daily production capacity of 600,000 cubic meters of water, making it the largest RO desalination plant in the Kingdom of Saudi Arabia and one of the largest such plants in the world. Toray's RO membranes are used in a wide range of applications, including seawater desalination, sewage purification, and industrial applications, and cumulative shipment volume have grown to the size which can support water for daily use by 730 million people.





## Messages from the General Managers of the Business Divisions

### Water Treatment Business



**Satoshi Shimoyama**

General Manager,  
Water Treatment &  
Environment Division

#### Business Strengths

The strength of our water treatment business is that we were among the first to develop RO membranes, and along with the world's highest quality RO membranes and other products, we are able to provide solutions to increasingly serious water-related issues around the world by presenting a full range of high-performance UF and MBR membranes. We will also build a global production, sales, and technical service system to solve global water problems through a system of local production for local consumption.

#### Current Business Conditions and Initiatives

Fiscal 2021 witnessed to robust demand in the Middle East, where large-scale seawater desalination plant construction is moving forward, while growth in China, the largest market, is stagnating due to the government's stance toward carbon neutrality and its zero-COVID policy, and the rate of global market growth has not risen above the 4-5% level. Entering fiscal 2022, the market is becoming increasingly opaque due to soaring raw material prices and strained logistics, as well as the situation in Russia and Ukraine. However, new opportunities have appeared, such as the movement toward constructing semiconductor plants within the U.S. and European regions spurred on by preferential policies in individual countries triggered by trade friction between the U.S. and China, and the expansion of demand owing to more stringent environmental regulations. Also, there is no change in the trajectory of growth in water treatment membrane demand over the medium to long term. In this environment, issues to address are expanding our business over the medium to long term by further strengthening global production and sales systems, accelerating new product development and thoroughly reinforcing our business structure, and strengthening our ability to make proposals.

#### Achievement and Progress in Fiscal 2021 for Issues set in AP-G 2022

In the mainstay RO business, we are strengthening local production for local consumption by increasing capacity to meet growing demand, and have achieved significant earnings growth by continuing full production and full sales. In parallel with this, we have captured the top share of the world market for large-scale seawater desalination projects. For the UF and MBR businesses, we are promoting a stronger business foundation by expanding sales of new high-performance products launched in fiscal 2019.

#### Major Initiatives in Fiscal 2022

In the RO business, we will fully utilize the increased production capacity to supply large-scale projects in China, the largest market, as well as in the Middle East, where demand is strong, and aim to further increase our market share in the economic environment by accelerating the development and launch of new products that meet the needs of customers in each region. We will also enhance our competitiveness by thorough cost cutting with the aim of increasing earnings. In the UF and MBR businesses, we will increase the ratio of new high-performance products and endeavor to strengthen our business structure.

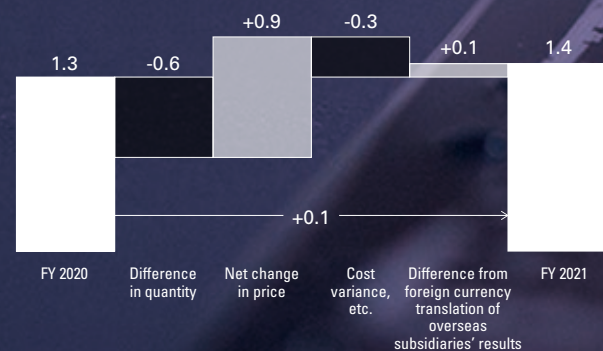
#### Message to Readers

Population growth, climate change and drought, environmental pollution, and other water-related issues are escalating in severity. In our water treatment business, we endeavor to develop the world's most advanced technologies, mainly for seawater desalination and wastewater reuse applications, and will continue to make further contributions to alleviate water shortages and reduce environmental burdens. We will meet the diversifying demand for water treatment membranes and contribute to realization of a "sustainable and prosperous planet" by solving water issues.

# Life Science

(FY)	2020	2021	Changes	2022 (Forecast)
Revenue (Billion yen)	53.0	52.0	-1.9%	55.0
Core Operating Income (Billion yen)	1.3	1.4	+6.0%	0.5
Core Operating Margin	2.4%	2.6%		

Changes in Core Operating Income (Billion yen)



## Revenue

¥52.0 billion

## Core Operating Income

¥1.4 billion

## Core Operating Margin

2.6%

## ROA (Core Operating Income/Assets)

1.9%

## TOPICS

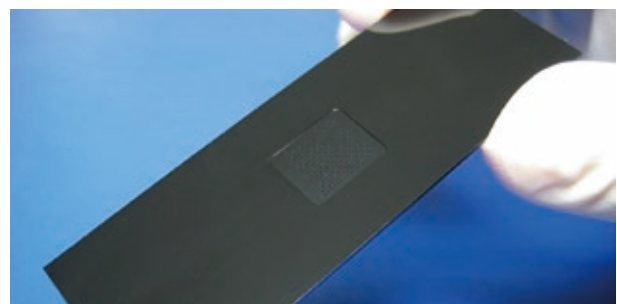
### Development of Highly Sensitive and Accurate Biochip for Multi-Item Allergy Testing

Toray has gained the prospect of securing the basic technology for an allergy testing biochip\*1 that enables simultaneous and highly accurate measurement of multiple allergen-specific immunoglobulin E (IgE) antibodies\*2 from a trace amount of blood. In-house verification testing confirmed that Toray's product, which simultaneously measures multiple allergy items from 20 microliters of blood, has a quantitative correlation exceeding 95% with existing in-vitro diagnostic products that measure single items.

Our intent is to have this biochip contribute to alleviating the burden on patients, such as small children who have difficulty in being taken a significant amount of blood, and to realize a more accurate diagnosis of allergies on site at medical facilities. Given this, going forward we will conduct a large-scale verification trial using specimens from allergy patients. Our aim is to apply for in-vitro diagnostic product certification at an early date.

\*1 Biochips for allergy testing are chips on which allergens (proteins) are affixed on a substrate, and allergen-specific IgE antibodies that bind specifically to the allergens can be detected.

\*2 Antibodies that bind to allergens and cause allergic symptoms.



Biochip for allergy tests

## Messages from the General Managers of the Business Divisions

### Pharmaceuticals & Medical Products Business



**Hirofumi Kobayashi**

General Manager,  
Pharmaceuticals & Medical  
Products Division

#### Business Strengths

The source of our competitive capability is the R&D we conduct in the pharmaceutical business that utilizes our core technologies of organic synthetic chemistry and biotechnology, and in the medical devices business, the generation of innovative medical products and devices to meet unmet medical needs based on advanced material technologies. The dialysis equipment business offers solutions to a diverse array of dialysis treatment needs and that enhance patients' quality of life (QOL) by combining dialysis-related equipment and dialysis equipment management systems, centered on dialyzers based on hollow fiber and surface processing technologies. We leverage our strengths by pursuing synergies among pharmaceuticals, medical devices, and dialysis, in addition to diagnostic drugs.

#### Current Business Conditions and Initiatives

The business environment continues to be challenging due to NHI drug price revisions and lower insurance reimbursement prices, as well as the market entry and widespread acceptance of generic products. The severity of business environment is also escalating with the continuing spread of COVID-19, both in Japan and overseas, causing the postponement of non-emergency surgeries and a decline in patient visits with concerns about infection, which has in turn delayed a rebound in consumption volume for certain medical devices, in addition to soaring costs for raw materials, fuel, and logistics.

While fulfilling our contribution to society through the stable supply of products and services, we are promoting business structural reforms and initiatives as in medium- to long-term strategies (overseas business development, applications expansion, launch of diagnostics and new businesses).

#### Achievement and Progress in Fiscal 2021 for Issues set in AP-G 2022

Despite being buffeted by a persistent and growing COVID-19 pandemic that led medical device sales to recover less than our expectations, demand for pharmaceuticals and medical devices and equipment related to chronic diseases requiring dialysis remained strong. As for clinical trials with an eye toward business expansion, we filed an application in June 2022, despite some delays both in Japan and overseas, for manufacturing and marketing approval for an in-vitro diagnostic drug that measures the concentration of apolipoprotein A2 isoform, which changes in the blood of pancreatic cancer patients. In addition, we are steadily achieving results through successful overseas clinical trials of pharmaceuticals, alliances and joint development of new medical products, and other efforts.

#### Major Initiatives in Fiscal 2022

Although we will feel the impact of revisions to NHI drug prices and lower insurance reimbursement prices in April this year, as well as soaring raw material and fuel prices and logistics costs, we will strive to expand earnings through demand recovery in catheters and medical devices, and sales of value-added dialyzer products including TORAYLIGHT™ NVF for hemodiafiltration (HDF) and PMF (proprietary technology PMMA membrane) as well as sales of total solutions (DX and AI) in dialysis-related equipment. We are also pressing forward on business expansion efforts by developing existing products outside Japan and growing indications and launching new medical device products and diagnostic drug businesses.

#### Message to Readers

In addition to contributing to society by offering better products and services for medical care to improve patient QOL and reduce the burden on medical professionals, we are committed to business growth and profitability by enhancing the pharmaceutical, medical devices, and dialysis businesses and developing our business outside Japan, in addition to the diagnostic drug business, while also being in pursuit of synergies and solutions.

## Toray Group CSR Materiality KPIs and Progress List (excerpt)

Materiality		Main initiatives of CSR Roadmap 2022	KPIs of CSR Roadmap 2022	
1	Contributing to the solution of environmental issues through business activities	Increase revenue from Green Innovation products	Revenue of Green Innovation products (IFRS)	
		Expand contribution to CO <sub>2</sub> reduction in the value chain* <sup>1</sup>	Contribution to CO <sub>2</sub> reduction in value chain	
		Expand water filtration throughput contribution by Toray's water treatment membranes* <sup>2</sup>	Contribution of Toray water treatment products	
2	Contributing to health maintenance and longevity through business activities	Increase revenue from Life Innovation products	Revenue of Life Innovation products (IFRS)	
3	Addressing resource and energy issues	Reduce greenhouse gas emissions per unit of revenue	Reduction of greenhouse gas emissions per unit of revenue (%)	
		Reduce water consumption per unit of revenue	Water usage per unit of revenue (%)	
		Aim for a high waste recycling rate	Waste recycling rate (%)	
4	Reducing greenhouse gas emissions	Reduce greenhouse gas emissions per unit of revenue	Reduction of greenhouse gas emissions per unit of revenue (%)	
		Aim for a high waste recycling rate	Waste recycling rate (%)	
5	Addressing substances with negative environmental impact	Reduce greenhouse gas emissions per unit of revenue	Reduction of greenhouse gas emissions per unit of revenue (%)	
		Reduce atmospheric VOC* <sup>3</sup> emissions	Reduction of atmospheric VOC emissions (%)	
		Aim for a high waste recycling rate	Waste recycling rate (%)	
6	Corporate ethics and legal compliance	Aim for no major cases of non-compliance with or violations of laws and regulations	Number of major violations of laws or ordinances	
		Conduct internal legal audits and improve problems found in the audits	Implementing internal legal audits of group companies, group companies improving problems found in internal legal audits in the previous year (%)	
		Provide information and implement education on major laws and regulations and other compliance-related matters	Group companies providing information and implementing education on major laws and regulations and other compliance-related matters (%)	
7	Ensuring safety and disaster preparedness	Aim for zero major accidents	Number of major accidents	
		Achieve world's best standard for safety management	Achieve world's best standard for safety management (not exceeding 0.05 frequency rate for occupational accidents resulting in lost work time)	
		Aim for zero fire and explosion accidents	Number of fire and explosion accidents	
		Aim for zero environmental accidents	Number of environmental accidents	
		Reduce greenhouse gas emissions per unit of revenue	Reduction of greenhouse gas emissions per unit of revenue (%)	
		Reduce water consumption per unit of revenue	Water usage per unit of revenue (%)	
		Reduce atmospheric VOC emissions	Reduction of atmospheric VOC emissions (%)	
		Aim for a high waste recycling rate	Waste recycling rate (%)	
8	Ensuring product quality and safety	Aim for zero product accidents	Number of product accidents	
		Provide quality assurance and product safety education	Group companies implementing product quality assurance and safety education (%)	



For more information on Materiality, please click here.

<https://www.toray.com/global/sustainability/stance/materiality.html>



Fiscal 2020	Fiscal 2021	Fiscal 2022	Activities of Fiscal 2020		Related SDGs
			Targets	Results	
1,000 billion yen (Fiscal 2022)			832.2 billion yen	Green Innovation Business Expansion Project	
5.3 times compared to fiscal 2013 (Fiscal 2022)			8.0 times	Green Innovation Business Expansion Project	
2.4 times compared to fiscal 2013 (Fiscal 2022)			2.2 times	Contributing Solutions to Social Issues through Business Activities	
300 billion yen (Fiscal 2022)			308.4 billion yen	Life Innovation Business Expansion Project	
At least 20% lower than fiscal 2013 (Fiscal 2022)			20.6%	Conserving Energy and Reducing Greenhouse Gas Emissions	
At least 25% lower than fiscal 2013 (Fiscal 2022)			28.3%	Initiatives for Managing Water Resources	
At least 86%	At least 86%	At least 86%	85.9%	Initiatives to Reduce Waste	
At least 20% lower than fiscal 2013 (Fiscal 2022)			20.6%	Conserving Energy and Reducing Greenhouse Gas Emissions	
At least 86%			85.9%	Initiatives to Reduce Waste	
At least 20% lower than fiscal 2013 (Fiscal 2022)			20.6%	Conserving Energy and Reducing Greenhouse Gas Emissions	
At least 70% lower than fiscal 2000	At least 70% lower than fiscal 2000	At least 70% lower than fiscal 2000	77.6%	Voluntary Initiatives to Reduce Atmospheric Emissions of Chemical Substances	
At least 86%			85.9%	Initiatives to Reduce Waste	
At least 86%			85.9%	Initiatives to Reduce Waste	
0	0	0	1	Ethics and Compliance	
Audits: Conduct at Toray Industries, Inc. and its group companies in and outside Japan Percent that improved: 100% for all audits by the following fiscal year			100%	Establishing a Corporate Culture of Total Respect for Ethics and Compliance	
100%	100%	100%	100%	Establishing a Corporate Culture of Total Respect for Ethics and Compliance	
0	0	0	0	Occupational Safety and Accident Prevention Activities	
No more than 0.05	No more than 0.05	No more than 0.05	0.38	Occupational Safety and Accident Prevention Activities	
0	0	0	6	Occupational Safety and Accident Prevention Activities	
0	0	0	4	Environmental Risk Management	
At least 20% lower than fiscal 2013 (Fiscal 2022)			20.6%	Conserving Energy and Reducing Greenhouse Gas Emissions	
At least 25% lower than fiscal 2013 (Fiscal 2022)			28.3%	Initiatives for Managing Water Resources	
At least 70% lower than fiscal 2000	At least 70% lower than fiscal 2000	At least 70% lower than fiscal 2000	77.6%	Voluntary Initiatives to Reduce Atmospheric Emissions of Chemical Substances	
At least 86%	At least 86%	At least 86%	85.9%	Initiatives to Reduce Waste	
0	0	0	2	Initiatives for Quality Assurance and Product Safety	
100%	100%	100%	100%	Initiatives for Quality Assurance and Product Safety	

## Toray Group CSR Materiality KPIs and Progress List (excerpt)

Materiality	Main initiatives of CSR Roadmap 2022	KPIs of CSR Roadmap 2022	
9 Initiatives for managing water resources	Reduce water consumption per unit of revenue	Water usage per unit of revenue (%)	
	Aim for a high waste recycling rate	Waste recycling rate (%)	
	Expand water filtration throughput contribution by Toray's water treatment membranes	Contribution of Toray water treatment products	
10 Managing social and environmental impact of suppliers	Request suppliers to practice CSR, including by conducting CSR surveys and audits, and having them make pledges, and strive to understand the status of each company's CSR initiatives	Group companies requesting their suppliers to practice CSR (%)	
		Suppliers confirming the status of CSR initiatives as requested by Toray Group (%)	
	Reduce CO <sub>2</sub> emissions intensity from distribution activities	Reduction in CO <sub>2</sub> emissions intensity from distribution activities (year-on-year)	
	Promote modal shift* <sup>4</sup> across distances of 500 km or more	Modal shift to sea or rail for transport across distances for 500 km or more (%)	
11 Respecting human rights	Implement human rights education and training	Group companies implementing human rights education and training (%)	
	Achieve the legally mandated employment rate of persons with disabilities	Group companies that have achieved legally mandated employment rate of persons with disabilities (%)	
12 Creating a positive workplace	As part of career develop initiatives for core staff, use the career path worksheets included in the new personnel information system	Career development of core staff using the new personnel information system (% of staff using a career path worksheet)	
	Support the return to work from long-term childcare leave	Employees returning to work from childcare leave (%)	
	Reduce the number of employees who exceed non-statutory working hours	Reduction in employees who exceed 45 hours/month of non-statutory working hours (%)	
	Encourage the use of annual paid leave by labor union members	Available annual paid leave used by labor union members (%)	
13 Securing and developing human resources	As part of career develop initiatives for core staff, use the career path worksheets included in the new personnel information system	Career development of core staff using the new personnel information system (% of staff using a career path worksheet)	
	Support the return to work from long-term childcare leave	Employees returning to work from childcare leave (%)	
	Reduce the number of employees who exceed non-statutory working hours	Reduction in employees who exceed 45 hours/month of non-statutory working hours (%)	
14 Conserving biodiversity	Reduce greenhouse gas emissions per unit of revenue	Reduction of greenhouse gas emissions per unit of revenue (%)	
	Reduce atmospheric VOC emissions	Reduction of atmospheric VOC emissions (%)	
	Aim for a high waste recycling rate	Waste recycling rate (%)	
	Conduct a survey of palm oil contained in raw materials and switch to certified products	Conduct a survey of palm oil contained in raw materials (%)	

\*1 Toray calculates the CO<sub>2</sub> emissions reduced throughout the value chain of products in accordance with the chemical sector guidelines of the Japan Chemical Industry Association, the International Council of Chemical Associations (ICCA), and the World Business Council For Sustainable Development (WBCSD).

\*2 Toray calculates water treated with Toray's water treatment membranes by multiplying the amount of fresh water that its ultrafiltration water treatment membranes can produce per day, including reverse osmosis (RO), ultrafiltration (UF) and membrane separation bioreactors (MBR), by the number of membrane elements sold.

\*3 Volatile organic compounds

\*4 A movement aimed at ensuring stable logistics function necessary for people's lives and for industrial activities while also contributing to economic growth in response to the shortage of truck drivers

Fiscal 2020	Fiscal 2021	Fiscal 2022	Activities of Fiscal 2020		Related SDGs
			Targets	Results	
At least 25% lower than fiscal 2013 (Fiscal 2022)			28.3%	Initiatives for Managing Water Resources	
At least 86%	At least 86%	At least 86%	85.9%	Initiatives to Reduce Waste	
2.4 times compared to fiscal 2013 (Fiscal 2022)			2.2 times	Contributing Solutions to Social Issues through Business Activities	
At least 80%	At least 90%	At least 95%	87%	Socially Responsible Procurement Initiatives at Toray Group	
At least 70%	At least 70%	At least 70%	87%	Socially Responsible Procurement Initiatives at Toray Group	
1%	1%	1%	5.8%	Toray Group Distribution Initiatives	
40% (Fiscal 2022 target)			27%	Toray Group Distribution Initiatives	
100%	100%	100%	100%	Human Rights Activity Report	
100%	100%	100%	48.4%	Promoting Diversity	
20%	30%	100%	100%	Securing and Developing Human Resources to Create New Value	
100%	100%	100%	99.0%	Creating a Positive Workplace for Employees	
Year-on-year reduction	Year-on-year reduction	Year-on-year reduction	112.2%	Creating a Positive Workplace for Employees	
About 90%	About 90%	About 90%	89.6%	Creating a Positive Workplace for Employees	
20%	30%	100%	100%	Securing and Developing Human Resources to Create New Value	
100%	100%	100%	99.0%	Creating a Positive Workplace for Employees	
Year-on-year reduction	Year-on-year reduction	Year-on-year reduction	112.2%	Creating a Positive Workplace for Employees	
At least 20% lower than fiscal 2013 (Fiscal 2022)			20.6%	Conserving Energy and Reducing Greenhouse Gas Emissions	
At least 70% lower than fiscal 2000	At least 70% lower than fiscal 2000	At least 70% lower than fiscal 2000	77.6%	Voluntary Initiatives to Reduce Atmospheric Emissions of Chemical Substances	
At least 86%	At least 86%	At least 86%	85.9%	Initiatives to Reduce Waste	
Usage survey of certified products : 100%	Decision making (Yes/No) of shifting to certified raw materials : 100% (Fiscal 2022)		100%	Biodiversity Initiatives	

## Stakeholder Engagement

Toray Group has established the Basic Policies to Promote Dialogue with Stakeholders. The Group is communicating proactively with various stakeholders in all aspects of its corporate activities, and periodically report on and discuss the content of these activities with its management. With the goal of strengthening the system for engaging with stakeholders, a new organization was established in April 2018 to supervise communications in general, and efforts are being made on centralizing the function of information transmission, both internally and externally.

### Engaging with Stockholders and Investors

The Group actively communicates with institutional investors and securities company analysts by providing information materials when requested and holding same-day results briefings when quarterly earnings are announced. In addition to IR materials, including integrated annual reports, the Group also provides a wide range of information on management policies and strategies, as well as financial and earnings information in the Investor Relations section of the Toray website.

Briefings on business for stockholders are held in order to deepen their understanding of Toray Group.

In fiscal 2021, Toray held four results briefings and held 499 meetings with investors and analysts.

### Engaging with Employees

The Toray Philosophy (TP) Project has reached its second year after being launched in fiscal 2020 as one of the group-wide projects under the Medium-Term Management program, Project AP-G 2022.

The gap between the Toray Philosophy and workplaces along with issues such as organizational culture will be taken over by the Corporate Brand Council, which has been placed under the Brand Management Committee chaired by the President and inaugurated in September 2021. To this end, the Corporate Brand Council will formulate and implement measures to revitalize internal communication, as well as promote affinity for Toray Group group-wide.

### Engaging with Customers

Toray Group believes that the customer comes first. Communication is carried out closely with the customers, mainly through the marketing and sales departments, and periodic customer satisfaction surveys. The results of these surveys are shared internally at Board meetings and through in-house newsletters as the Group strives to provide even higher quality customer service.

In addition, we have set up showrooms at major locations including Tokyo (in the Head Office) and Shiga (in the Shiga Plant) to showcase Toray business activities and product applications in an easy-to-understand manner. In fiscal 2021, we renovated the corporate culture floor of the Toray Human Resources Development Center (Mishima) and the exhibition space at the Environment and Mobility Development Center (Nagoya).

### Engaging with the Mass 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 actively engages with a wide range of media organizations, acting as the public's point of contact with the Company.

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 2021, the Company issued 138 press releases and responded to 247 media requests for information.

### Engaging with Business Partners

While providing materials and products as a manufacturer of advanced materials, Toray Group must engage in upstream management of its supply chains to better fulfill the needs of its customers, including the areas of production facilities and procured raw materials and resources. Accordingly, the Group has established its Basic Purchasing Policies and Basic Distribution Policies to emphasize this approach and ensure fair business activities. Throughout the Group, proper and fair transactions, adherence to laws, environmental preservation, respect for human rights, improvements in quality and other policies in initiatives with regard to corporate responsibility in procurement, purchasing, and distribution are promoted.

### Engaging with Local Communities

In addition to holding informal gatherings for discussion regularly, Toray Group strives to engage in more active dialogue with nearby residents in a variety of other settings, including by participating in events sponsored by local governments and inviting local residents onto plant grounds for summer festivals.

In fiscal 2021, nearly all of the various events held previously were cancelled due to COVID-19. However, we actively engaged in local community outreach activities that include support for protection against COVID-19 and implementing online initiatives.



# External Evaluation

Toray was included in the following SRI indices.

## Included in the Dow Jones Sustainability Index Asia Pacific

Toray is included in the Asia Pacific Index of the Dow Jones Sustainability Indices (DJSI), an SRI index administered by U.S.-based S&P Dow Jones Indices and Switzerland-based RobecoSAM.



## AAA Evaluation Obtained from MSCI ESG Ratings

Having obtained the highest AAA evaluation in the ESG ratings released by MSCI, which provides institutional investors (from pension funds to hedge funds) across the globe with various tools to support investment decisions, Toray was also selected for inclusion in the MSCI Japan Select Leaders Index.



## Selected for Inclusion in the FTSE4Good Index Series

Toray was selected for inclusion in the FTSE4Good Index Series. The FTSE4Good Index Series was developed by UK-based FTSE Russell. Those companies that implement outstanding ESG practices are selected for this index series.



## Selected as Constituent of S&P/JPX Carbon Efficient Index

Toray has been selected as a constituent of the environmental stock index presented by S&P Dow Jones and the Tokyo Stock Exchange.



## Selected as S&P Global Sustainability Yearbook Member

Toray has been selected for inclusion in The Sustainability Yearbook, by which S&P Global (USA), in cooperation with RobecoSAM (Switzerland), evaluates the sustainability of companies from three aspects—the economy, the environment, and society—and lists the top companies.



## Selected as CDP "Water Security A List Company"

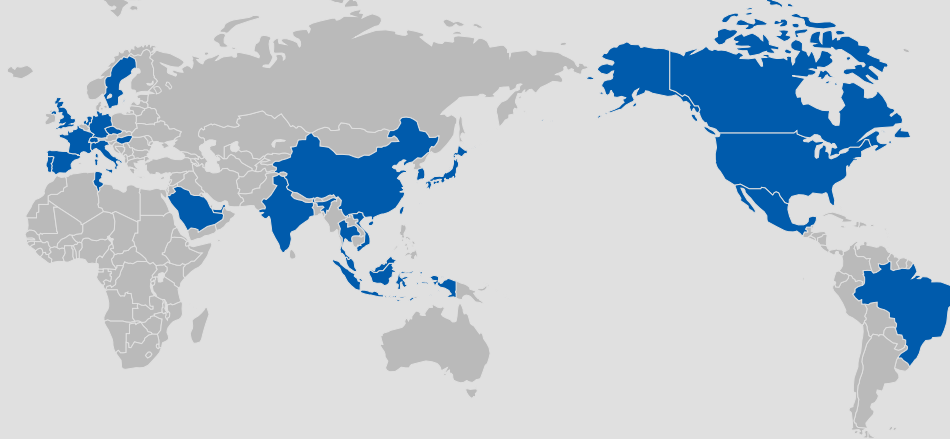
In a survey conducted by the Carbon Disclosure Project (CDP), an international non-profit organization, Toray was selected as an A list company with the highest evaluation in the water security category. Toray also received a B evaluation in the climate change category.



# Toray Group Worldwide Network

Toray Group operates businesses in 29 countries and regions including Japan.

317 subsidiaries and affiliated companies (116 domestic, 201 overseas) (as of March 31, 2022)



## Japan

- Toray Fine Chemicals Co., Ltd.
- Toray Advanced Film Co., Ltd.
- Suido Kiko Kaisha, Ltd.
- Toray Construction Co., Ltd.
- Toray Engineering Co., Ltd.
- Toray Medical Co., Ltd.
- Toray Systems Center, Inc.
- Toray International, Inc.
- Chori Co., Ltd.
- ■ Du Pont-Toray Co., Ltd.
- Japan Vilene Company, Ltd.
- DuPont Toray Specialty Materials K.K.
- Dow Toray Co., Ltd.
- Sanyo Chemical Industries, Ltd.

## United Kingdom

- Toray Textiles Europe Ltd.

## Italy

- Alcantara S.p.A.

## France

- Toray Carbon Fibers Europe S.A.

## China

- ■ Toray Fibers (Nantong) Co., Ltd.
- Toray Sakai Weaving & Dyeing (Nantong) Co., Ltd.
- Toray Industries (H.K.) Ltd.
- Toray Plastics (China) Co., Ltd.
- Toray Industries (China) Co., Ltd.
- Pacific Textiles Holdings Ltd.

## Republic of Korea

- ■ ■ Toray Advanced Materials Korea Inc.
- Toray Battery Separator Film Korea Limited
- STEMCO, Ltd.
- STECO, Ltd.

## Malaysia

- ■ Penfibre Sdn. Berhad
- Toray Plastics (Malaysia) Sdn. Berhad

## Indonesia

- ■ P.T. Indonesia Toray Synthetics

## Thailand

- Toray Textiles (Thailand) Public Company Limited
- ■ Thai Toray Synthetics Co., Ltd.

## U.S.A.

- Toray Plastics (America), Inc.
- Toray Composite Materials America, Inc.
- Zoltek Companies, Inc.
- Toray Advanced Composites USA Inc.

## Others

- Fibers & Textiles
- Performance Chemicals
- Carbon Fiber Composite Materials
- Environment & Engineering
- Life Science
- Other
- Trading

## Major Offices and Plants in Japan

### Osaka Head Office

#### Branches

Nagoya, Hokuriku, Kyushu, Tohoku, Chugoku & Shikoku

#### Plants

Shiga, Seta, Ehime, Nagoya, Tokai, Aichi, Okazaki, Mishima, Chiba, Tsuchiura, Gifu, Ishikawa, Nasu

## Overseas Offices

### U.S.A.

Toray Industries (America), Inc.

### Germany

Toray Industries Europe GmbH

### China

Toray Industries (China) Co., Ltd.  
Beijing Branch

### Republic of Korea

Toray Industries Korea Inc.

### India

Toray Industries (India) Private Limited

### Brazil

Toray do Brasil Ltda.

# Investor Information

 (As of March 31, 2022)**Common Stock:**

Issued: 1,631,481,403 shares  
(including treasury stock)  
Number of Stockholders: 220,480

**Annual General Meeting:**

The annual general meeting of stockholders is normally held in June in Tokyo.

**Listings:**

Common stock is listed on the Tokyo Stock Exchange.

**Independent Auditor:**

Ernst & Young ShinNihon LLC

**Transfer Agent:**

Sumitomo Mitsui Trust Bank, Limited  
1-4-1, Marunouchi Chiyoda-ku, Tokyo  
100-0005, Japan

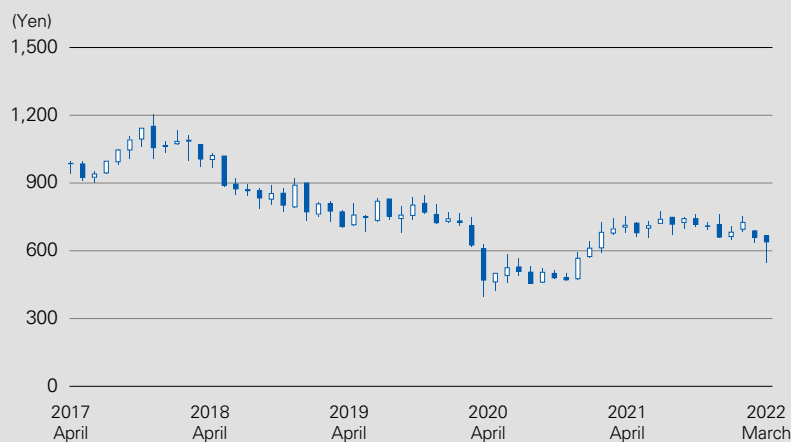
**Cash Dividends Per Share**

	FY 2021	FY 2020
Total for the year	¥16.00	¥9.00
Interim	8.00	4.50

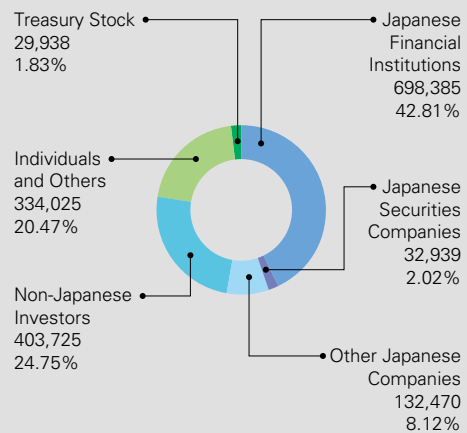
**Principal Stockholders**

	Shares held	Percentage of shares held*
The Master Trust Bank of Japan, Ltd. (Trust Account)	273,604,900	17.08
Custody Bank of Japan, Ltd. (Trust Account)	126,515,200	7.90
Nippon Life Insurance Co.	71,212,250	4.45
TAIJU LIFE INSURANCE COMPANY LIMITED	35,961,000	2.25
National Mutual Insurance Federation of Agricultural Cooperatives	26,593,000	1.66
Custody Bank of Japan, Ltd. (Trust 4 Account)	24,933,200	1.56
STATE STREET BANK WEST CLIENT-TREATY 505234	24,719,114	1.54
Sumitomo Mitsui Banking Corporation	24,022,000	1.50
JP MORGAN CHASE BANK 385781	19,755,684	1.23
Mitsui Fudosan Co., Ltd.	19,460,720	1.22

\* Percentage of shares held is calculated excluding 29,937,504 shares of treasury stock.

**Stock Price Range****Composition of Stockholders**

(Thousands of shares)



# Corporate Data

 (As of March 31, 2022)**Toray Industries, Inc.****Head Office**

Nihonbashi Mitsui Tower, 1-1,  
Nihonbashi-Muromachi 2-chome,  
Chuo-ku, Tokyo 103-8666, Japan  
Telephone: 81 (3) 3245-5111  
Facsimile: 81 (3) 3245-5054  
URL: [www.toray.com](http://www.toray.com)

**Established:**

January 1926

**Paid-in Capital:**

¥147,873,030,771

**Number of Employees:**

48,842

Parent company: 7,175  
Japanese subsidiaries: 10,413  
Overseas subsidiaries: 31,254

**Toray Industries, Inc.**

1-1, Nihonbashi-Muromachi 2-chome,  
Chuo-ku, Tokyo 103-8666, Japan  
Telephone: 81 (3) 3245-5111  
URL: [www.toray.com](http://www.toray.com)

For questions about this report;  
IR Dept.  
Telephone: 81 (3) 3245-5113