

TORAY IR Day

June 5 and 9, 2023

**Medium-term Management
Program, Project AP-G 2025
Business Outline and Strategy**

We provided an opportunity for the General Managers of each business division to directly explain their business strategies for the Medium-Term Management Program, Project AP-G 2025, focusing on the three-year business strategy through FY 2025. We engage in a diverse array of businesses under differing operating conditions. In light of this, we execute growth strategies in line with each stage of these businesses and their respective strengths. Taking this opportunity, we would like to fully convey those strategies to you.

*Organization names and titles are current at the time of IR Day event.

Message from the President

Value Creation for New Momentum

I would like to explain the concept behind the formulation of the Medium-Term Management Program, Project AP-G 2025 (hereafter AP-G 2025).

Since its establishment in 1926, Toray's management philosophy has been based on the concept of "Companies are public institutions and contribute to society through their businesses," and it has been carried forward to the current corporate philosophy, "Contributing to society through the creation of new value with innovative ideas, technologies, and products."

We have been actively addressing environmental issues from an early date, including the establishment of the Global Environment Committee in 1992. In addition, we have been expanding our Green Innovation (GR) businesses since 2011 and our Life Innovation (LI) businesses since 2014. In 2018, we released the Toray Group Sustainability Vision, which outlines the world we aspire to live in, the challenges we face, and our efforts to resolve them.

Toray's mission is to provide the necessary solutions to the challenges facing the world in terms of balancing development and sustainability through supplying innovative technologies and advanced materials. In addition, we have defined promotion of growth strategies based on the Toray Group Sustainability Vision as our basic long-term strategy, with the aim of achieving "sound, sustainable growth."

Our growth strategy involves targeting business expansion through aggressive capital investment made during the past four medium-term management programs, investing management resources in such growth business fields as carbon fiber composite materials. As a materials manufacturer that provides materials to all industries, Toray needs to identify growth business fields and invest capital in advance to fulfill its social responsibility to ensure high quality and stable supply globally. On the other hand, sustainable growth requires continuous capital investment and development to realize such

a sustainable society, including capital investment and promotion of DX.

Under AP-G 2025, we will maximize the cash generated from tangible and intangible assets accumulated to date, under the theme of "value creation" that enables this. To this end, our priority is to improve overall profitability and asset efficiency by increasing the share of Sustainability Innovation and Digital Innovation businesses, which are highly profitable growth business fields. The subheading of AP-G 2025, "Value Creation for New Momentum," also implies that Toray Group will reach even greater heights through a renewed focus on the creation of social and customer value. There is accelerating movement worldwide toward sustainability, led by decarbonization. For Toray as a materials manufacturer which has accumulated advanced research and technology development capabilities, this means ever increasing opportunities to help solve social issues. We are certain that we can play an even more important role in realizing this.

Akihiro Nikkaku
President



TORAY
Innovation by Chemistry

Toray Group's Measures for Ultimate Value Creation

Toray Group is creating ultimate value with an increased sense of urgency to create high-added-value for businesses and new businesses.

Cultivated throughout its history to date, Toray Group's five core strengths are the following: proposing solutions based on materials, creating new technologies through the pursuit of ultimate limits and technology integration, demonstrating the collective strengths of its R&D organizations, ensuring a stable supply of high-quality products, and building a global value chain.

In promoting "ultimate value creation," a key theme of our Medium-Term Management Program, Project AP-G 2025, we will draw on these strengths as a foundation of our efforts while leveraging digital technology with a focus on the frontlines to pair tangible and intangible assets and fully utilize them in a bid to realize high-added-value creation for businesses as well as for creating new businesses. In view of these aspirations, I would like to shine a light on our measures for "ultimate value creation."

Group-Wide Action to Support Growth Business Fields

Under AP-G 2025, we will not only focus on the growth of each business, but also look to expand in growth business fields through Group-wide action. Toray applies a single polymer to diverse fields such as fibers and textiles, films, and resins and has the ability to use this polymer in a wide variety of processes from polymerization to processed products globally. This strength in turn allows us to recover recycled resources and expand into a wide range of businesses. In June 2022, we established the Environmental Solutions Department, a dedicated department to formulate resource recycling strategies across our businesses by identifying markets in which we can promote the value of resource-recycling materials. Positioning the resource recycling market as a growth field, we will work to promote both sustainability and economic growth.

In the Mobility field, we established the Next Mobility Department to provide direct marketing to OEMs and to deliver speedy solutions to customers, leveraging cross-organizational, products, and regional collaboration. In this manner, we will increase the value offered to customers as a set rather than a single item. We have, for example, combined Ultrasuede™ and TORAYPEF™ as surface and base materials, respectively, in order to provide new value. We anticipate this initiative will help trigger the application of these composite materials in the specifications of other proposals.

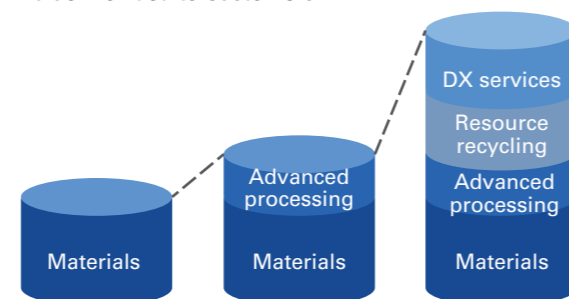
Enriching and Extending the Global Value Chain

Toray Group's trading company revenue (excluding inter-company sales) totals ¥1,050 billion, which exceeds that of its competitors. Moreover, we have developed structures in our respective businesses that not only

promote local production for local consumption, but are also resistant to geopolitical risks and capable of steadfastly fulfilling our supply responsibilities. These factors make up Toray's intangible assets that the Company has continued to build up since its overseas expansion in the 1950s. Looking ahead, we will strategically place human resources in areas close to end customers and fine tune our global sales operation capabilities.

In addition, we will maximize the value provided to customers while enriching and extending the value chain by leveraging collaboration with overseas business sites and external resources, creating high-added-value through advanced processing and technology integration, addressing sustainability issues, and promoting other measures. As part of the Group's endeavors, we launched the AI-based material concierge service as a DX service to help customers optimally select materials and reduce development time in the resin business in 2023. In the water treatment business, we will also focus on subscription-based services that help customers minimize their management burden while ensuring stable facility operations through TORAYWISE™, our proprietary real-time monitoring system.

Value Provided to Customers



Employing Strategic Pricing

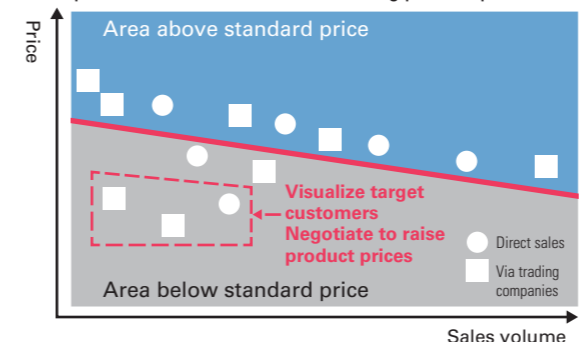
We believe it is extremely important to have a pricing strategy that appropriately reflects the value created to improve profitability. Taking into consideration the environment and market conditions of each business, we will therefore take advantage of every opportunity to proactively improve pricing. For example, we are utilizing digital tools to plot customer transactions on the two axes of sales volume and price. In visualizing customers whose sales volume and prices do not match specifications, we have already initiated steps to negotiate price increases.

Enhancing Brand Value

Under AP-G 2025, the Group as a whole will leverage its profile as a driving force throughout the organization to win not just on product specifications and price, but

Example of Initiative for Management of Price Differences between Customers and between Products

Identifying customers and products where product prices do not reflect the relevant costs, transaction volume and specification differences, and raising product prices



on brand. For example, Ultrasuede™, an ultra-microfiber nonwoven material with a suede texture, clearly defines our business vision and commitment to customers. As a result of our continued efforts to promote the cool image of Made in Japan as our brand identity, in conjunction with the Toray corporate brand, we have witnessed an increase in the brand value of Ultrasuede™ by a factor of 5.2 times from ¥6.6 billion in FY 2017 to ¥34.2 billion in FY 2022. At the same time, we are working toward the 100% use of plant-based raw materials to further enhance our brand value. In line with these endeavors, we will also proactively enhance our brand value in our performance chemicals, carbon fiber, water treatment, and other businesses under AP-G 2025.

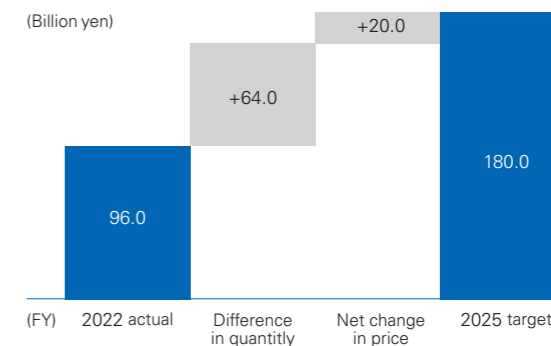
Improving Asset Efficiency

First, Improve ROIC to Approximately 5%

Under AP-G 2025, we have set certain financial targets for FY 2025 as KPIs. This includes core operating income of ¥180 billion (¥96 billion in FY 2022) and ROIC of approximately 5% (2.7% in FY 2022). As far as our core operating income is concerned, we will work to improve our capacity utilization rate by expanding quantities sold in growth business fields. In addition, we will improve our profitability by ultimate value creation, including improvement in pricing. As a part of these endeavors, we will take steps to increase ROIC by reducing working capital and continuing to engage in reengineering with a focus on low-growth and low profitability businesses while improving the turnover of existing assets.

Over the period of AP-G 2025, the Performance Chemicals Business which experienced a decline in FY 2022, is projected to enjoy the largest increase in income owing to recovery in market conditions. We are targeting increase core operating income by ¥64 billion on the back of differences in quantity and ¥20 billion owing to the net change in price from capturing recovery of the aircraft application demand in the carbon fiber composite materials business and business growth in the automobile, semiconductor, and other markets, as well as the reaping the benefits from the past capital investments, coupled with advances in high-added-value products in the fibers and textiles, resins, films, and carbon fiber composite materials businesses.

Variance Analysis of Core Operating Income (Business Growth Factors)



Variance factor	Difference (billion yen)	Business strategies for increasing income
Difference in quantity (Net of fixed cost variance)	+64.0	<p>Fibers & Textiles: Increase sales volume of ultra-microfiber nonwoven material with a suede texture and airbags, where capital investment has been completed, reflecting the recovery in automobile production volume</p> <p>Resins & Chemicals: [Resins] Boost compound production sites by expanding PPS polymer production facilities; expand market share in Chinese xEV market [Films] Increase sales volume by meeting higher requirement for release film for multi-layer ceramic capacitor (MLCC) and by capturing growth in mobile device and automotive markets [Electronic & Information Materials] In line with the OLED market growth, achieve full operation of facilities that are being expanded and scheduled to be completed within the term of AP-G 2025 Carbon Fiber Composite Materials: Capture increasing demand in aircraft applications</p>
Net change in price	+20.0	<p>Fibers & Textiles: Promote recyclable products with high-added-value (including "difference in quantity.") Performance Chemicals: Pass on increased costs to sales prices and implement pricing strategy Carbon Fiber Composite Materials: Advance high-added-value strategy through expansion of intermediate materials</p>
Total	+84.0	

Mitsuo Ohya

Executive Vice President and Representative Member of the Board



R&D Strategies

Utilizing Core Technologies and Combined Strengths to Differentiate Materials and Enhance the Ability to Create Value

Undivided R&D Organization

The definitive characteristic of Toray Group's R&D approach is all of its R&D functions have been centralized into the Technology Center. This undivided R&D organization is able to generate new technologies through fusion and integration of existing technologies more easily and enables more rapid deployment of advanced materials to a wide range of business fields. Each division at the Toray Technology Center is engaged in R&D involving various materials based on the four core technologies of organic synthetic chemistry, polymer chemistry, biotechnology, and nanotechnology. In many cases, the new materials conceived in this center flourish in other business fields. Another major characteristic is that the Group can fully utilize its combined strengths by exploiting the technologies and knowledge from many different fields to solve problems in an individual business field.

Toray Group has been particularly focused in recent years on enhancing the use of these combined strengths. In this respect, it has been fusing its core technologies with its "chemical engineering process," "engineering," and "analysis technologies" in an effort to accelerate development for key initiatives. In the area of "chemical engineering process," the Group creates safe, cost-competitive processes from the perspective of chemical engineering, and supports group-wide themes. In the area of engineering, the Group applies molding, surface treatment, AI, and other elemental technologies to realize and demonstrate innovative processes and equipment that are able to consistently produce products with the nanometer scale, thereby contributing to the development of equipment capable of consistently producing nano-level products, as one example. In the area of analysis, the Group leverages high-end electron microscopes and other devices that can directly observe molecules to analyze structures and compositions.

Technology Center centralizes these technologies to solve various challenges involved in research, technological development, and manufacturing.

Acceleration of Cross-Business Deployment of Separation Membrane Technology

Since the 1980s, Toray Group has created unique separation membrane technologies such as dialyzer and reverse osmosis (RO) membrane. Going forward, further evolution and development of these technologies will move in an increasingly interesting direction. For example, in the area of water treatment, these membranes are used to collect valuable materials and to separate oil from water, and in the health care field, their uses are expanding in areas such as personal protective clothing and new blood purifiers. Moreover, in the chemicals area, research is progressing in biochemical processes that integrate separation technologies and biotechnologies. Similarly, in the area of new energy, membrane technologies are being rolled out for use in electrolyte membranes designed to produce hydrogen for the realization of a hydrogen society. Serving as a means of creating added-value in such a broad range of industrial fields, separation membrane technology is rooted in the fiber, textile, and film technologies possessed by Toray Group. Without question, this cross-business technology deployment stems from the Group's undivided R&D organization.

Using Super Nanotechnology in the Creation of High-Added-Value Products

Each of Toray Group's business fields possesses many unique and high-value differentiated products, or so-called unrivaled technologies and products, which stand on its advanced technological capabilities. Along with making these technologies the de facto standard and expanding market share, the Group continues to engage in

developments that secure and expand profits by continuously reducing costs. NANODESIGN™, NANOALLOY™, and nano-multilayer are just three of these technologies that have enabled a leap in the improvement of material properties and that have created products with characteristics unique to Toray Group. Likewise, the Group is focusing its energy into these technologies, which it refers to in general as Super Nanotechnology.

NANODESIGN™ is a proprietary flow control technology that forms fiber cross-sections at the level of points and that controls the process at the nano-scale, thereby creating unprecedented fibers. This technology has enabled the fibers to have luster, moisture retention, water repellency, elasticity, and other properties as we like. Meanwhile, NANOALLOY™ is a technology that disperses and kneads different polymers at the nano-level as a means of expressing heat resistance, resilience, and various other properties to a higher degree. This technology has been adopted for impact-absorbing components for sports equipment and automobiles. Finally, nano-multilayer technology allow us to individually design film thicknesses ranging from several hundred to a thousand layers, thereby enabling flexible wavelength selection design. This technology is used in a wide array of applications, including films with metallic luster and films for automobile head-up displays.

By deploying these Super Nanotechnologies within each business field, the Group aims to expand related revenue to the level of ¥40 billion by FY 2025 (from approx. ¥12 billion in FY 2022).

the Group envisions R&D expenditures reaching the level of ¥220 billion, a ¥25 billion increase from AP-G 2022 period. The Group will accelerate development through allocating more of these R&D expenditures to the high-added-value themes prioritized by each business field in the aim of increasing revenue in FY 2025 by more than ¥200 billion over FY 2022.

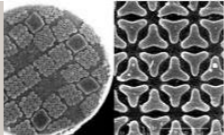
Priority Subjects for the Technology Center

High-added-value themes prioritized by each business field

Fields	Priority issues for the Technology Center
Fibers & Textiles	NANODESIGN™, recycled fibers
Resins & Chemicals	PPS resin, NANOALLOY™ resin, fine particles
Films	Nano-multilayer film, lithium-ion battery separator film
Carbon Fiber Composite Materials	Intermediate materials for industrial use, fuel cell electrode substrates
Electronic & Information Materials	Electronic coating materials, environmentally friendly printing materials
Pharmaceuticals & Medical Products	APOA2-i, acute lung injury treatment column
Water Treatment, Environment & Amenity	RO membranes for seawater desalination, air filters
Others, new businesses, basic and foundational themes	

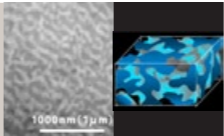
Super Nanotech

NANODESIGN™




Fiber precision
Cross-section control

NANOALLOY™



Polymer
microstructure control

Nano-multilayer

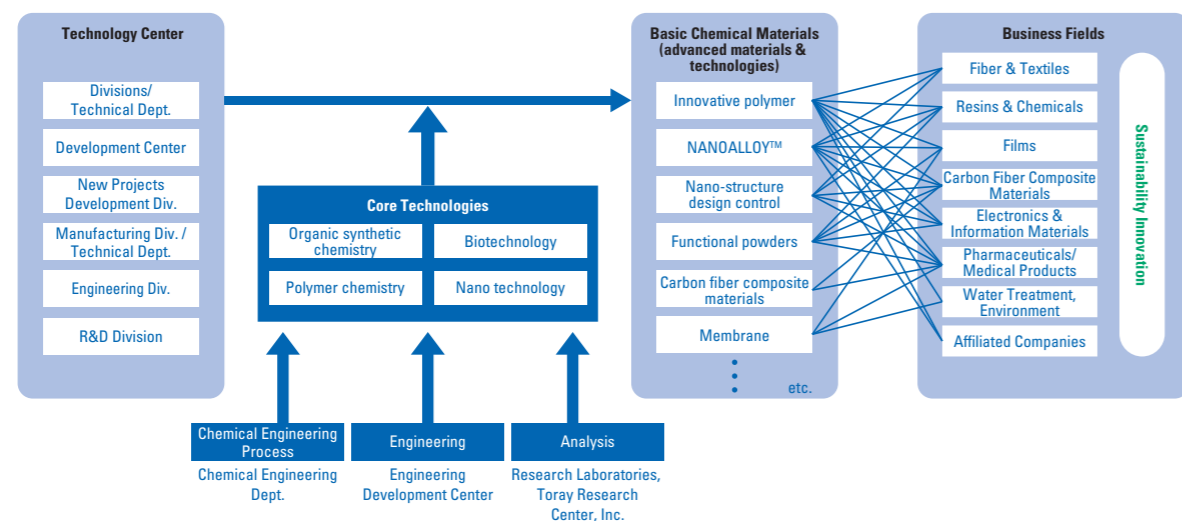


Nano-multilayer/
polymer design
technology

Investing ¥220 Billion in R&D Expenditures under AP-G 2025

Toray has consistently increased its R&D expenditures under the concept that research and technological development provide the key to building the Toray of tomorrow. During the three-year period of AP-G 2025,

Undivided R&D Organization



Satoru Hagiwara
Executive Vice President
and Representative
Member of
the Board, CTO

Fibers & Textiles Business

Basic Policy under AP-G 2025

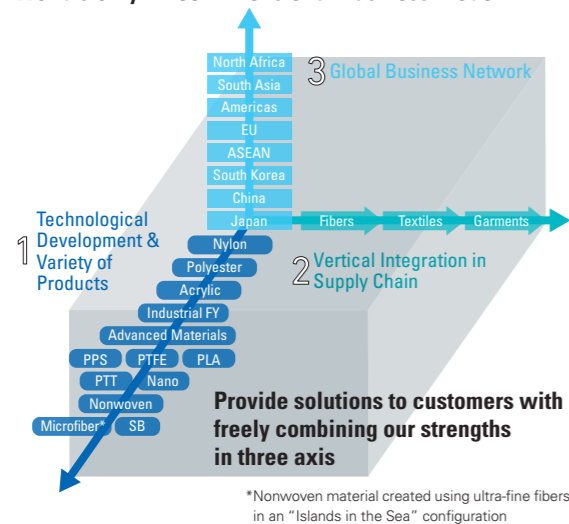
Aim for sustainable growth with high profitability through the realization of strengthened foundation and advanced of products as measures for promoting sustainability, and through global business expansion in growth business fields

The World's Only Three Dimensional Business Model

Toray's fibers and textiles business provides customers with a full range of solutions by combining its three axes of strength: technological development and a variety of products, vertical integration in the supply chain, and global business network. Leveraging the world's only three dimensional business model, we are expanding our business not only in the apparel field, but also for use in industrial applications such as textiles for airbags, nonwoven fabrics for hygiene products, and artificial leathers for automobile interiors.

As far as the Group's technological development and variety of products are concerned, we are working on the development of core materials to high-performance fibers as well as biomass-based and recycled fibers, based on polymer chemistry technology. From a supply chain vertical integration perspective, we are pursuing added value at each stage of production from raw materials (filament and staple fibers) to textiles and garments. Our global operations include 28 production bases in 17 countries worldwide. This network allows us to establish and maintain a production platform in optimal locations, including cooperation with external partner factories.

World's only Three Dimensional Business Model



Main Initiatives of AP-G 2025

Under Project AP-G 2025, Toray Group will work to address the following main initiatives (growth strategies) in its fibers and textiles business: (1) Improving profitability by ultimate value creation, (2) Business expansion in growth fields based on high-performance, highly textured products that make use of environmentally responsible materials, and (3) Product and operational excellence.

Improving Profitability by Ultimate Value Creation

In the fibers and textiles business, we will focus on expanding artificial leather and airbag businesses and adding higher value utilizing Toray's unique technologies. In specific terms, we will direct our energies largely toward the fashion and automobile interior fields as we strive to expand our business centered on the Ultrasuede™ brand developed in Japan and the ALCANTARA™ brand from Italy. Particularly for artificial leather, demand is expected to increase significantly due to the shift away from natural leather and the rapid expansion of the EV market pushing demand upward for automobile interior application. Accordingly, we will expand production facilities for Ultrasuede™ in Japan.

Demand for airbag fabrics is expected to grow at 7% annually between 2022 and 2025. Against this backdrop, Toray is looking to address the needs of the world's major automobile manufacturing regions through its six fabric production bases. In addition, our supply chain network is comprised of three fiber production sites and two cushion sewing sites. We have also established R&D and marketing sites as a part of efforts to build an integrated supply chain. Looking ahead, we will leverage these strengths to meet diversifying needs, including trends in interior spaces as well as the growing demand for environmentally friendly products associated with the shift to autonomous driving.

Toray Group will create a continuous stream of products that offer innovative functions commensurate with efforts to provide higher added-value through its

Proceeding high-added-value creation with Toray's unique technology: NANODESIGN™

Major Products (already in the market)

uts-fit™	<ul style="list-style-type: none"> • Smooth and sleek texture • Bulkiness, retention of shape • Rich in stretchability 	
Qticle™	<ul style="list-style-type: none"> • Natural and deep color • Elastic and stretchable 	
Kinari™	<ul style="list-style-type: none"> • Luster that surpasses silk • Noble glaze, rustling sound of silk • Easy to process and sewing, looking beautiful when tailored 	
Camifu™	<ul style="list-style-type: none"> • Warm texture • Lightness, elasticity • Functional additives retainability 	

Awards: Technology Award of The Society of Fiber Science and Technology; Grand Prix of Senken Gosen Award Material Division; Chemical Society of Japan's Award for Technical Development, etc.

unique technologies, such as conjugate spinning technology NANODESIGN™. These products include uts-fit™, Kinari™, Qticle™, and Camifu™.

Business Expansion in Growth Fields based on High-Performance, Highly Textured Products That Make Use of Environmentally Responsible Materials

Turning to high-performance, highly textured products that make use of environmentally responsible materials, we aim to expand our business with a focus on two brands, namely the biomass-based Ecodear™ and &+™, which utilizes recycled materials. Ecodear™ is a plant-based synthetic fiber which does not affect atmospheric CO₂ concentration even when incinerated. Toray Group markets Ecodear™ N510, a 100% plant-based nylon fiber produced from nylon raw materials such as castor oil plants and corn. Premarketing examples of 100% plant-based polyester include Patagonia's Sugar Down and headrest covers of All Nippon Airways' ANA Green Jet, a special aircraft to embody its environment slogan "ANA Future Promise."

&+™ is a recycled fiber made from collected PET bottles, fishing nets, and other waste materials that can be made into high-added-value functional fibers with traceability functions. Fishing nets and gear are said to account for 10% of marine plastic waste by weight. The viability of the recycling business depends on involvement of stakeholders. When people's thoughts and actions for the future are connected (&), new value (plus factors) is added. For example, we are making fibers from the PET bottles collected from the 2023 Tokyo Marathon and recycling it into the uniforms to be worn by volunteers from the following year. In addition, boxes have been set up next to vending machines located in the Group's business and production bases in Japan to collect PET bottles for use in the manufacture of &+™. Promotional activities have begun in Malaysia with the cooperation of the Penang state government to extend this initiative overseas.



Product and Operational Excellence

In the pursuit of product and operational excellence, we are strengthening our textile sales capabilities to leading apparel customers in Japan and overseas with a focus on our high-performance materials AIRTASTIC™, Primeflex™, and Dermizax™. Moreover, we will continue our efforts to deepen and extend our global supply chain for apparel applications, with a particular emphasis

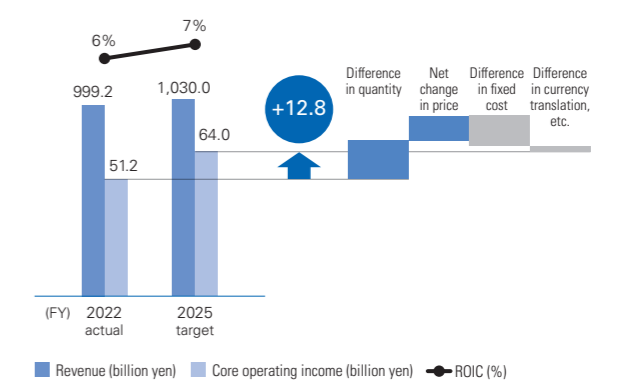
Enhancing Global Megabrand Expansion

AIRTASTIC	Advanced nylon and polyester fabric made of Toray's unique thin yarns, light and compact, with soft textures
Primeflex Stretch Fabric	Advanced fabric with flexible and stretching texture. Has durability, lightness, comfortability, fast-drying properties, applicable to various purposes
Dermizax Waterproof Breathable Fabric	Functional fabric offering a high level of water resistance, breathability and resistance to condensation, as well as excellent elasticity

on expanding our production base in India, a promising market for the future. In contrast, we will take steps to improve the profit foundation by optimizing the scale of production, reviewing the business portfolio, and withdrawing from low-profitability businesses at affiliates in Japan as well as nylon fiber and polyester/cotton fabric businesses that are in need of business structure reform.

By addressing the aforementioned major initiatives, we aim to achieve revenue of ¥1,030 billion in FY 2025, up ¥30.8 billion compared with FY 2022, and core operating income of ¥64 billion, up ¥12.8 billion compared with FY 2022 exceeding the fiscal 2019 level prior to the pandemic.

Target for FY 2025



Variance	Main Factors
Difference in quantity	<ul style="list-style-type: none"> • Expansion of business growth fields such as airbag and artificial leathers • Capturing recovering demand for integrated apparel business • Sales expansion of textile with advanced functions and high-added-value
Net change in price	<ul style="list-style-type: none"> • Expansion of high-added-value such as NANODESIGN™ products • Proceeding with passing on the rise in raw material and fuel prices to the sales price • Business structure reform for low-growth and low profitability
Difference in fixed cost	<ul style="list-style-type: none"> • Expansion of new production lines for products including airbag and artificial leathers • Increase of expenses and labor cost due to expansion of sales activities

Kenichiro Miki

Senior Vice President,
General Manager,
Fibers & Textiles Division



Resins & Chemicals Business

Basic Policy under AP-G 2025

Contributing to the realization of a sustainable society by creating high-added-value products

Main Initiatives of AP-G 2025

Resins Business

Enhancing Governance

In light of the inappropriate action in improperly identifying certain resin products as receiving certification from Underwriters Laboratories (UL), a third-party safety science organization headquartered in the United States, details of which were announced in January 2022, Toray is continuing to promote measures aimed at preventing recurrence. In addition to taking all necessary steps regarding actions on the recurrence prevention measures in response to the recommendations of the Expert Committee, Toray has completed UL recertification for the necessary grades and secured the reinstatement of ISO 9001 certifications for the scope of products for which certification was partially suspended or withdrawn. Moving forward, we will promote measures to prevent a recurrence, appropriately operate a quality control system, and further enhance compliance awareness.

Actions on the recurrence prevention measures in response to the recommendations of the Expert Committee

1	Enhance compliance awareness	<ul style="list-style-type: none"> ✓ Promotion of corporate culture reform through senior managers continually communicating messages to employees the importance of compliance and through communication to the frontlines ✓ Enhancement communication by 5,900 employees on the floor, in order to 1. Enhance process control, 2. Create a culture of openness and 3. Foster a sense of pride (Ongoing)
2	Establish work procedures and a training system for UL-related operations	<ul style="list-style-type: none"> ✓ 1. Training for all members ✓ 2. Restructuring of the certification system/operation procedures ✓ 3. UL verification audit, C-CAP (Completed)
3	Transfer personnel between business divisions and other interaction	<ul style="list-style-type: none"> ✓ 1. Change of director in charge of the division ✓ 2. Personnel transfer of related individuals (Completed)
4	Establish a system to confirm UL compliance by the internal quality assurance organizations and/or external organizations	<ul style="list-style-type: none"> ✓ 1. Internal audit by the Quality Assurance Division ✓ 2. External audit by UL and ISO recertification (Chiba, Nagoya) (Completed)
5	Strengthen the structure of quality assurance organization	<ul style="list-style-type: none"> ✓ Strengthened organizational structure by increasing members in the division and by strengthening auditing system, etc. (Completed)
6	Establish system to ensure reporting of misconduct to Toray administrative organizations	<ul style="list-style-type: none"> ✓ Improved contents of the internal survey (implemented in November 2022), conducted a follow-up of results (Completed)

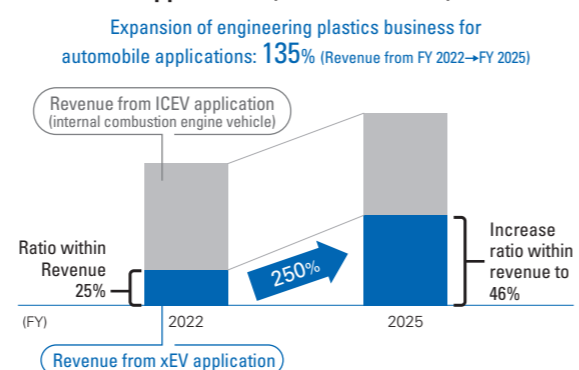
Creating High-added and Ultimate Value

In the resins business, Toray Group commercializes a broad lineup of products, including amorphous ABS resin, crystalline nylon resin, PBT resin, PPS resin, and LCP resin. We also brought to the market TORAYCA™ resin, a carbon fiber reinforced plastic. In addition to an extensive array of products, we provide total solutions encompassing a wide range of areas, including material development

and proposals, design proposals, and support for process and molding, to comprehensively assist customers in their product development activities. These efforts are backed by the strength of our global capabilities and network of 19 business and production bases in 10 countries outside Japan. Toray Group is also successively increasing its compound production capacity in growth regions.

Under AP-G 2025, we will work to enhance the performance of our resin compound business as a first step in creating high-added-value. The percentage of high-performance product revenue to total revenue in the engineering plastic resins business will climb from 30% in 2022 to 36% in 2025. In specific terms, we are targeting 250% growth in revenue from xEV-related sales, where demand is projected to especially expand in FY 2025 compared with FY 2022. If we meet the target, the ratio of xEV applications within the automobile applications is expected to reach 46%.

Automobile applications (Trend in revenue)



PPS resins form a second integral component of efforts for high-added-value creation. PPS resin is a super engineering plastic with long-term heat resistance, chemical resistance, and flame-retardant properties. Its use is expanding in versatile applications, including power semiconductors. Toray has established the world's only integrated monomer/polymer/compound production system and held a 32% share of global PPS compound sales in 2022. During the AP-G 2025 period, we will expand our polymerization facilities in South Korea as well as sales globally, focusing on Europe and China with the goal of securing a global market share of 36% by 2025.

Third in our efforts for high-added-value creation, we will look to our ABS resins. While competition for general purpose ABS resins is becoming increasingly harsh, we expect demand for high-performance ABS resins to return to a 5% annual growth trajectory, and will focus on transparent ABS resins and automobile applications. We aim to maintain our number one share of the global market for transparent ABS resin, and are targeting a global share of 45% by FY 2025, with sales volumes

for automobile applications projected to reach 1.6 times that of FY 2022. Furthermore, we aim to establish our status as a high performance and sustainable ABS resin supplier by developing the market for recycled grades and launching ABS resins using bio-based monomers. In addition, to strengthen our ability to create value through digital innovation, we will integrate materials informatics (MI) and design support tools (CAE systems).

We aim to increase the value we provide to customers by significantly shortening product development lead times, significantly reducing product development costs, and achieving the selection of the best material candidate.

Chemicals Business

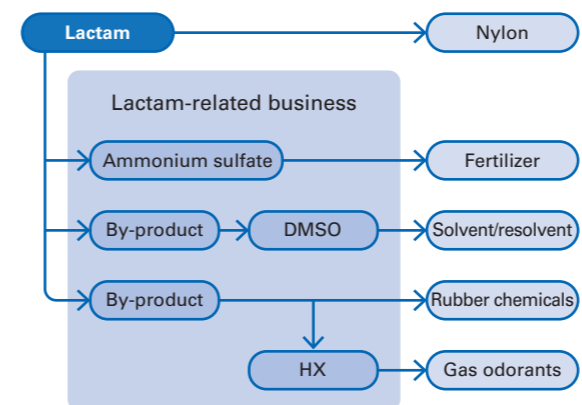
Expanding the Fine Chemicals Business

In the chemicals business, we aim to expand sales mainly of products with the world's top market share by utilizing our proprietary technologies and raw materials. In specific terms, we will focus on New Zeolite (NZ) products that contribute to the advancement of agricultural and food security as raw materials for agricultural chemicals, dimethyl sulfoxide (DMSO), which is used as a cleaning agent and solvent for semiconductors and electronic components, and Thiokol™, which contributes to high insulation and energy conservation as a sealant for insulating glass. DMSO, in particular, is safe and is expected to be in demand as a substitute for other catalysts.

Toray has also developed the world's first interferon drug for cats and dogs and a chronic kidney disease drug for cats with the aim of extending the healthy life expectancy of companion animals. In the aromatic fine chemicals business, we will focus on proposing fragrances to the cosmetics industry based on market research and analysis, and building a flavor supply network to China, ASEAN, and other countries for the food industry. Moreover, as a new business, we will promote the development of high-performance resin powders for 3D printing by utilizing our high-performance polymer design technology.

Strengthening the Lactam and Lactam-Related Business

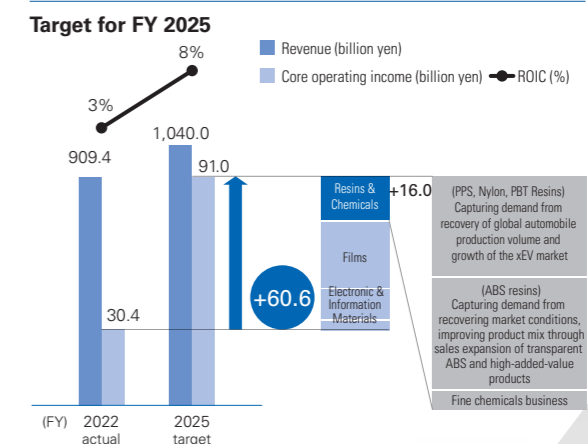
Toray's caprolactam uses the Company's unique photo-reaction technology to realize high safety and easy process. To further reduce environmental impact, we are also developing a new type of lamp that uses LED as its photoreactive light source. Moreover, we are expanding our business in various fields by leveraging the by-products generated during caprolactam production.



Contributing to the Realization of a Sustainable Society

While focusing on expanding sales of high-performance products, we are working to make materials more sustainable through three methods: (1) material recycling, in which plastic products are collected from the market and returned to the polymer or compounding process; (2) chemical recycling, in which collected raw materials are depolymerized and returned to the monomer process; and (3) bio-based production of raw materials. While our efforts are currently focused on material recycling, we aim to push forward with chemical recycling and the use of bio-based raw materials during the period. Through these means, we aim to employ sustainable materials for 30% of the raw materials we sell by 2030.

Taking all of the aforementioned into consideration, Toray aims to capture demand in the xEV and other growth markets by enhancing its solution proposing capabilities, expanding global bases, and developing high-performance products in the resins business. Furthermore, by expanding the fine chemicals business, we aim to increase core operating income in the resins and chemicals businesses as a whole by ¥16 billion in FY 2025 compared with FY 2022.



Kazuhiko Shuto

Vice President,
General Manager, Resins &
Chemicals Division



Films Business

Basic Policy under AP-G 2025

Complete the concept shift from plastic films to environmentally friendly functional films while promoting the transfer of increased product value to selling prices in line with improvements in quality

Developing Various Applications through the Pursuit of Ultimate Performance

The film business has production and processing sites in nine countries around the world. Drawing on this network, Toray Group is developing such products as polyethylene terephthalate (PET) films that pursue ultimate performance and biaxially oriented polypropylene (OPP) films for a variety of applications, including smartphones, displays, and electronic components used in multilayer ceramic capacitors (MLCCs), capacitors, motors, and batteries for automobiles as well as food packaging materials through polymer, nano, film making and other fundamental technologies.

Main Initiatives of AP-G 2025

Expanding the Digital Innovation and Mobility Businesses

The thinner the functional film, the better is its product characteristics. As a result, the growth in functional film demand is seen mainly in capacitor dielectric material, semiconductor manufacturing processing, and mobility-related applications.

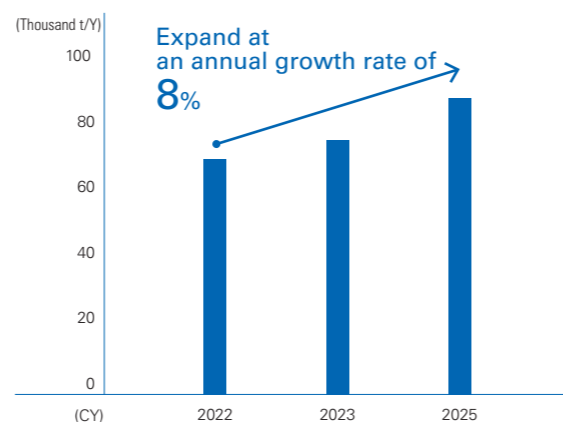
As far as capacitor dielectric applications are concerned, MLCCs are becoming smaller while increasing in capacity at an accelerating pace. This reflects the improved performance of electronic devices and higher data transmission volume. Under these circumstances, Toray's PET films have been adopted by many MLCC manufacturers owing to their superior smoothness and cleanliness, which enables thinner and more ceramic layers. Based on the increase in demand, we will increase production capacity in Japan by 1.6 times compared with the current level by 2025. For our ultra-thin OPP capacitor films for xEVs, for which we hold a 60% global market share, steps have already been taken to increase production capacity in Japan by 1.6 times in 2022. As the leader in the automotive capacitor film market thanks to our ultra-thin, high voltage resistance, high-quality products, we plan to increase our production capacity another 1.4 times by 2025 in light of the forecast growing demand for xEVs.

In the area of semiconductor packaging manufacturing process applications, we will strengthen our production system for dry film photoresist (DFR) application PET films, which are essential for the formation of semiconductor circuit boards amid the trend toward finer wiring. Toray boasts a high market share in the high-end

DFR market and is taking preparatory steps to address increased demand in areas where sound growth is expected, including data center servers.

From a mobility application perspective, polyphenylene sulfide (PPS) films with high heat resistance and durability (resistance to hot water, strong acids, and chemicals) are enjoying widespread acceptance and use as xEV motor insulation materials and in fuel cell vehicle (FCV) as well as hydrogen production equipment applications. Sales are expanding rapidly in China, especially for motor applications. Complementing this product, we are strengthening global partnerships to create new applications for our PICASUS™ brand of polyester films which employs our nano-layering technology. PICASUS™ helps to control light direction by enabling the transmission of vertical incident light while reflecting obliquely incident light and addresses the needs of xEVs for heat insulation and automated driving.

Demand Forecast : PET Film for MLCC Process



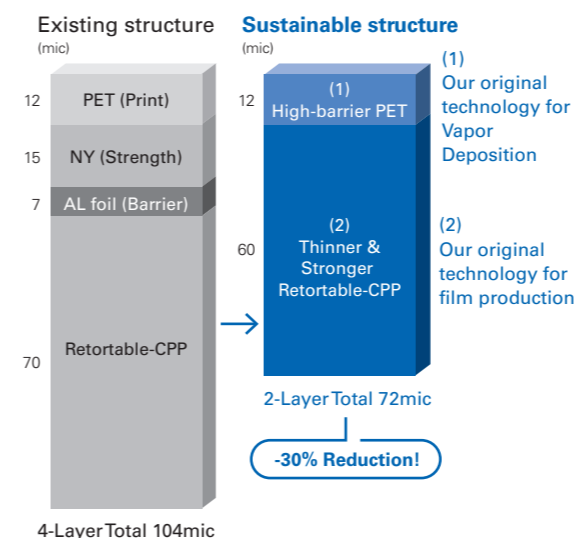
Expanding the Sustainability Innovation Business

Toray has taken the lead ahead of its competitors to collect and recycle the PET film discarded after use in the MLCC manufacturing and other processes. Moving forward, we will deepen collaboration with supply chain companies to provide this recycling system more broadly. Moreover, we will promote the early introduction of chemical recycling and development of bio-based PET.

Responding to pressing social issues including reducing food loss (extend the shelf life of food) and use of plastic, we are developing films for use in packaging materials that combine high-barrier PET films with

thinner, stronger sealant films that help reduce the use of plastic by 30%. These films have a structure that does not use aluminum foil as a barrier material to preserve quality and enables microwave heating, which emits 80% less CO₂ when compared with boiling. We project our products will become mainstream in the retort market going forward. Furthermore, we are promoting the shift to mono-material packaging to address the recycling difficulties encountered with packaging materials made of different ones.

Reducing Food Waste and Plastic Consumption — Films for Retort Pouches



Strengthening Ultimate Value Creation and Competitiveness

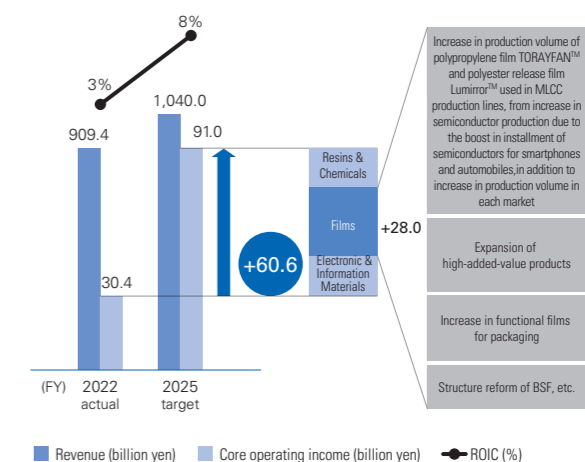
Toray Group will focus on strategic pricing and promoting value in its bid to create ultimate value. The market for the general-purpose films used in electronic components is distinguished by its large number of customers and decentralized pricing strategies. In reality, prices have repeatedly risen and fallen from the initial prices set individually due to a variety of circumstances, including the balance between supply and demand as well as fluctuations in raw material and fuel prices. In this instance, we classify customers into major and long tail users, quantify the risk of losing business, extract customers and products where prices are not appropriate in terms of price, sales volume, and specifications, and take steps to negotiate price hikes. Meanwhile, in the case of PET film for dry film resist (DFR) use, for example, we will focus on reflecting our efforts to reduce circuit defects attributable to foreign substances inside films and surface micro-scratches, to help reduce customers' production costs, and other initiatives in our product prices.

To strengthen our competitiveness, we will create new products and markets by leveraging our strengths

in multi layer, coating, and polymer design technologies, while upgrading and expanding our production and processing sites in line with the growing demand for films. We will also strengthen our cost competitiveness by introducing innovative processes and promoting smart factories using DX technology.

Taking into account the aforementioned, we will focus on expanding the digital innovation, mobility, and sustainable innovation businesses while promoting initiatives to strengthen our ultimate value creation and competitiveness. Through these means, we will work to increase core operating income by ¥28.0 billion in FY 2025 compared with FY 2022.

Target for FY 2025 (Performance Chemicals)



Kazuhisa Itsuji

Corporate Vice President
General Manager,
Films Division



Electronic & Information Materials Business

Basic Policy under AP-G 2025

Maximizing and stabilizing sales and profit by expanding sales in growth markets and regions, strengthening the management foundation, and creating new large-scale businesses

Turning “The One” Strategy Cycle

As the “First One,” the Electronic & Information Materials Business quickly ascertains future needs through its close relationships with leading companies in each industry and rapidly develops products by utilizing its own fundamental and process technologies. Next, we build high barriers to entry with an intellectual property (IP) network, production performance (high quality, stable supply, cost competitiveness), and customer support to become the “Only One.” We will also promote de facto standardization and establish our position as “Number One.” We call this “The One” Strategy and under AP-G 2025 will bring about the spiraling up of this cycle.

In addition to the recession due to stay-at-home demand, in the previous Medium-Term Management Program, Project AP-G 2022, the results for the final fiscal year were affected by inventory adjustments in the display and semiconductor supply chains. Despite the decline, however, we had been steadily laying the groundwork for AP-G 2025 during the same period.

First, in the semiconductor and JISSO (packaging) market, we took advantage of the spread of xEVs and renewable energy infrastructure and, in addition to concentrating our efforts on the development of materials for power semiconductors with a high market share, greatly expanded our share in the Chinese market. Having developed a photodefinable polyimide material that is free of N-methyl-2-pyrrolidone (NMP) solvent and thereby contributes to reducing environmental impact, we are also advancing toward making this the de facto standard coating material for semiconductors. In the display field, we made progress in developing materials for micro LEDs while maintaining good relationships with OLED display manufacturers. In the printing-related field, we have developed a volatile organic compound (VOC)-free printing technology and are focusing on developing label and package printing applications. In new fields, we worked on the development of multi-core optical fibers, for which NANODESIGN™ technology was adopted, and development of high-resolution scintillator panels.

We have also strengthened our support system by assigning key personnel in sales, research, and technology to major locations around the world. Under AP-G 2025, we will promote “The One” Strategy underpinned by these foundations.

Main Initiatives of AP-G 2025

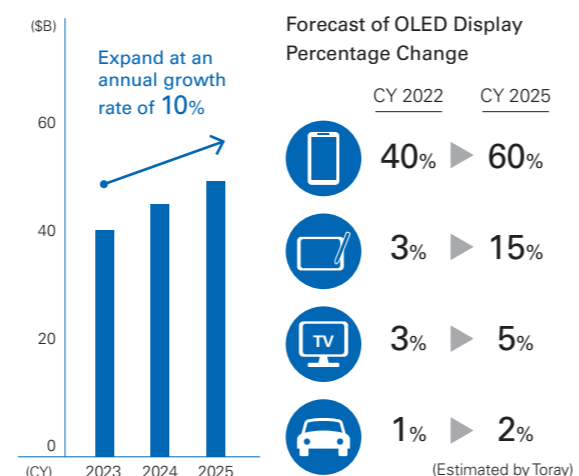
Semiconductor & JISSO Market: Sales Expansion of Materials for Power Semiconductors

The semiconductor market has experienced repeated cycles of growth and stagnation and it is expected to expand at an average annual growth rate of 7% or more until 2025. Under such circumstances, by means of our close relationships with leading companies and industry-academia-government collaboration, we aim to expand our business to exceed the market growth rate through, for example, the development of high-performance products in advance of the market, the establishment of bases in growth regions, sales expansion of environmentally friendly products (the NMP-free polyimide coating material). Geared toward xEVs and renewable energy in particular, with regard to power semiconductor applications, which are expected to further expand, we will focus on meeting the needs for highly reliable buffer coatings and thermal conductive materials with high heat resistance and high voltage resistance.

Display Market: Expansion of Business Centered on OLED

In the display market, OLED, which features high brightness, efficient dimensional designs, and low power dissipation, is beginning to be used not only in mid-sized TVs and smartphones but also in tablets and for automotive displays. Used as a material for insulation layers and planarization layers, Toray’s photodefinable polyimide is becoming the de facto standard in the OLED

Market Size of OLED Displays

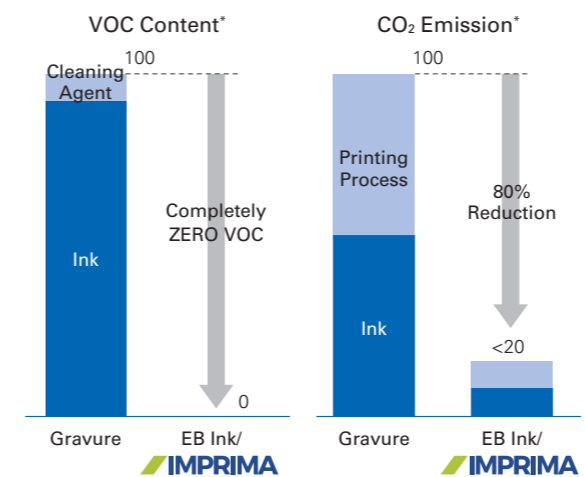


market and is expected to grow significantly along with light-emitting materials. In the micro LED market for next-generation displays, we also provide many related materials for wearable devices and VR goggles while preparing for full-scale market growth.

Printing Market: Accelerating Development of Applications for Completely VOC-Free Printing Systems

In the printing industry, the use of large amounts of organic solvents for inks and cleaning agents has become an issue in terms of environmental friendliness and work environment. In response, Toray has succeeded in developing a completely VOC-free printing system that does not use organic solvents using IMPRIMA™, an offset printing plate that does not require dampening water, and water-soluble electron beam (EB) curable ink. With this innovative system that can significantly reduce CO₂ emissions, we will work with partner companies to accelerate the development of applications such as food packaging.

Achieved “Completely ZERO VOC Printing System”



New Growth Markets: Focus on Multi-Core Optical Fibers and X-Ray Scintillator Panels

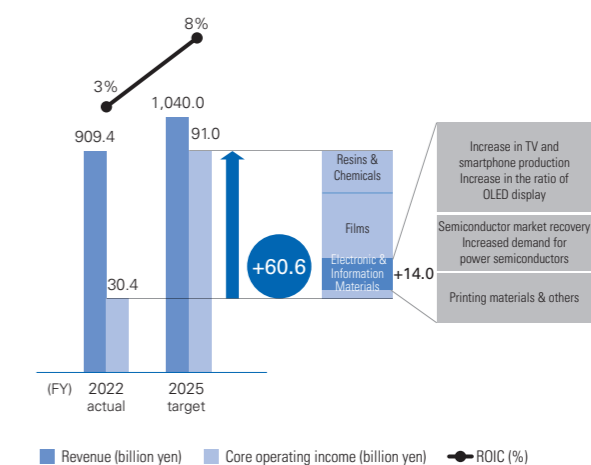
In new areas, we have developed a multi-core optical fiber that pushes the boundaries of conventional optical fibers by combining our proprietary NANODESIGN™ technology and resin flow control technology. By arranging multiple cores that transmit light in a single fiber, this product simultaneously achieves high-speed, high-capacity communication as well as power savings and is thus expected to be found applications in data centers and supercomputers.

We have also developed a scintillator panel for digital X-ray inspection with the world’s highest resolution. X-ray digital imaging promises high-speed processing and low cost, but the problem is that the image becomes blurry due to the diffusion of light within the panel. In response to this, we are developing cellular

scintillator technology that can obtain clear X-ray digital images by forming fine partition walls for each pixel. We aim to find applications in, for example, nuclear power plant piping inspections, aircraft part inspections, and the medical field, including mammography.

As mentioned above, in the electronic information and materials business, we aim to increase our core operating income by ¥14 billion in fiscal 2025 (compared with fiscal 2022) by expanding the market share of our materials for OLED displays and power semiconductors as well as by promoting diversification through the launch of new businesses.

Target for FY 2025 (Performance Chemicals)



Hiroshi Enomoto

Senior Vice President
General Manager,
Electronic & Information
Materials Division



Carbon Fiber Composite Materials Business

Basic Policy under AP-G 2025

In order to seize the business opportunity of the carbon neutral society, which is expanding and accelerating on a global scale, Toray Group provides the best products and realizes business expansion through social contribution by leveraging the core strengths of its carbon fiber composite materials, “high functionality” and “reliability (usability)”

Carbon Fiber Demand to Grow at an Annual Rate of 17%

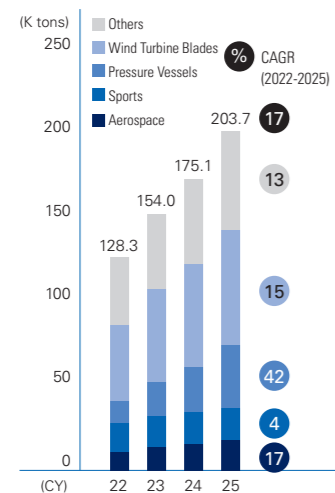
Through its carbon fiber composite materials business, Toray Group provides optimal products that meet the needs of customers from high-performance regular tow carbon fibers to low-cost large tow carbon fibers that are suitable for mass production. Manufactured in Japan, the United States, France, and South Korea, Toray Group maintains an annual regular tow carbon fiber production capacity*1 of 28,770 tons. Meanwhile, with an annual production capacity of 35,000 tons, the Group manufactures large tow carbon fibers in Mexico and Hungary. Toray Group has the world’s largest share*2 in both regular tow and large tow.

Demand for carbon fiber will continue to expand at an annual rate of 17% owing to such megatrends as the drive toward carbon neutrality and is projected to exceed 200,000 tons by 2025. In particular, pressure vessels, including compressed natural gas (CNG) tanks, renewable natural gas (RNG) tanks, and hydrogen (CHG) tanks, wind turbine blades, existing commercial aircraft models, and gas diffusion layer base materials for fuel cells can be expected to drive growth.

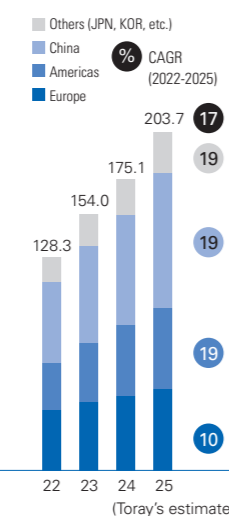
*1 As of March 2023

*2 Global Market share in 2022: Regular tow 35%; Large tow 50%

Demand Forecast by Application



Demand Forecast by Region



Main Initiatives of AP-G 2025

Toray Group has identified six goals to be achieved in its carbon fiber composite materials business over the three-year period of AP-G 2025. In particular, energies will be directed toward the three main tasks of (1) capturing recovery in aircraft demand, (2) reforming its business

structure based on the industrial application expansion, and (3) strengthening quality and cost competitiveness.

Items to be accomplished in the three years of AP-G 2025

1	Respond to Recovering Demand for Commercial Airplanes and for New Demand	Reorganize production bases for airplane (securing personnel) and gain new demands such as UAM and next generation aircraft programs
2	Capture Expanding Industrial Market	Increase production capacity to capture growing demand for industrial applications such as pressure vessel (CHG), wind turbine blades, and centrifuge
3	Business Structure Reform without Overdependence on Aerospace Applications	Expand production and sales for industrial and sports applications after aircraft demand recovers, and shift to business without overdependence on aerospace applications
4	Strengthen Regional Cooperation	Improve services by strengthening collaboration among regional subsidiaries in the Americas (CMA - TAC-G) and Europe (CFE - CIT - DELTA - EACC)
5	Develop a Road Map for Carbon Neutrality	Achieve carbon-neutrality in Europe (CFE) by 2040 and entire carbon fiber composites businesses by 2050
6	Improve Compliance	Improve operation of security trade control and quality control, etc.

Capturing the Recovery in Aircraft Demand

In light of the subsiding impact of the pandemic and the likelihood of a rapid recovery in passenger demand, both Boeing and Airbus announced plans to gradually increase production of existing models through to 2025. In addition, the development of next-generation aircraft that can further reduce fuel consumption and CO₂ emissions is expected by the beginning of 2030. To capitalize on the recovery in existing model demand, we will focus on preferential production from existing qualified material production lines. Responding without delay, we will steadily increase capacity of existing regular tow machines in a bid to minimize the impact on other applications. Moreover, we will work to address R&D and marketing issues related to the development and selection of materials with a view to obtaining material qualification for the next-generation aircraft program from 2025.

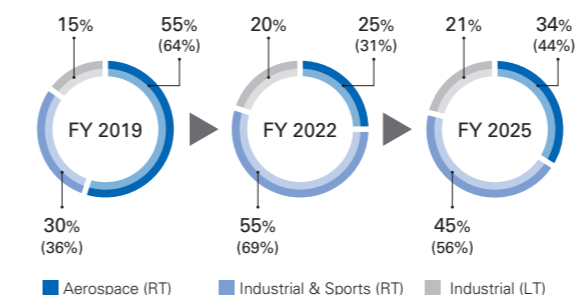
Reforming the Group’s Business Structure

Aerospace applications accounted for 55% of the marginal profit of the carbon fiber composite materials business in FY 2019. With 64% of the Group’s regular tow dependent on aircraft and aerospace applications, results under AP-G 2022 were significantly affected by COVID-19. Under AP-G 2025, we therefore intend to build a balanced earnings base that does not overly depend on aircraft applications. With the aim of improving our business portfolio, we will focus on capturing

the growing demand for industrial applications while strengthening profitability.

In order to strengthen our profit structure, we will install new cost-competitive equipment, adopt a price formula linked to raw material and fuel costs, and enhance product value through technical services and quality improvement.

Marginal Profit Structure by Application



*Numbers in parentheses indicate the ratio of RT

Strengthening Quality and Cost Competitiveness

Toray Group’s competitive advantage in its carbon fiber composite materials business includes its global power from each of production capacity, location, and human resources perspectives. Our strengths in this business also include the quality and reliability of data accumulated over 50 years and our development proposal capabilities encompassing regular and large tow as well as such diverse intermediate materials and composites as thermoplastic and thermoset resins. While taking full advantage of these inherent strengths against the growing emergence of competing manufacturers, we will work to increase our production capacity and production lines at optimal locations and promote the development of innovative processes in order to enhance our cost competitiveness. As a part of efforts to enhance our quality capabilities, we will not only focus on creating leading-edge material and products, but also on such activities as improving our carbon footprint.

Road to Carbon Neutrality

As a leading carbon fiber company, Toray will promote a progressive approach toward carbon neutrality. In line with the Toray Group Sustainability Vision, our policy is to reduce mainly Scope 1 and Scope 2 CO₂ emissions by over 30% from the current level by 2030. Moreover, we intend to initiate the production of recycled carbon fiber in Europe and the U.S. with the ultimate goal of achieving carbon neutrality by 2050. Meanwhile, we will quantify the Life Cycle Assessment (LCA) improvement effects on customers’ products and clarify Toray’s contribution.

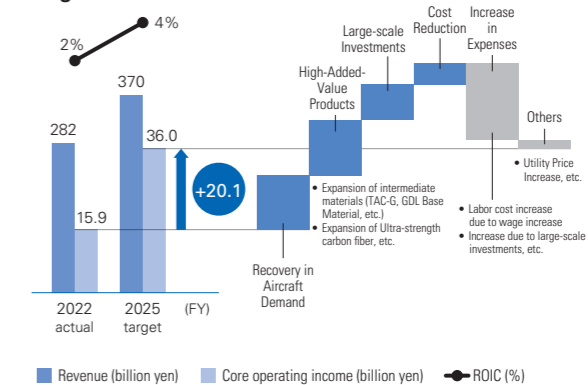
Demand for Carbon Fiber in Full Swing from 2026

As previously mentioned, Toray Group has identified various policies for its carbon fiber composite materials business under AP-G 2025. Guided by these policies, we will strengthen our business structure by capturing

the recovery in demand for commercial aircrafts and expanding high-added-value products. In addition to expanding the scale of business through large-scale capital investments, we will also promote further cost reductions. Based on these endeavors, Toray Group is targeting revenue of ¥370 billion in FY 2025, an increase of ¥88.3 billion compared with FY 2022. From a profit perspective, the Group is targeting core operating income of ¥36 billion in FY 2025, up ¥20.1 billion compared with FY 2022.

Demand for carbon fiber is projected to fully expand from 2026. Applications that are expected to drive this demand include hydrogen tanks and urban air mobility (UAM) flying vehicle development, which are estimated to increase four-fold (90,000 tons) and 10 times (2,000 tons), respectively, by 2030 compared with 2025, as well as next-generation aircraft, which are anticipated to expand to 3,000 tons around 2030. In light of conditions as they currently stand, the three-year term of AP-G 2025 is positioned as a preparatory period that Toray Group will take all steps to capture this potential demand, and we will continue to put in place a sound business base and promote environmental measures to address wide-ranging issues such as carbon neutrality.

Target for FY 2025



Minoru Yoshinaga

Senior Vice President,
General Manager,
Torayca & Advanced
Composites Division

Water Treatment Business

Basic Policy under AP-G 2025

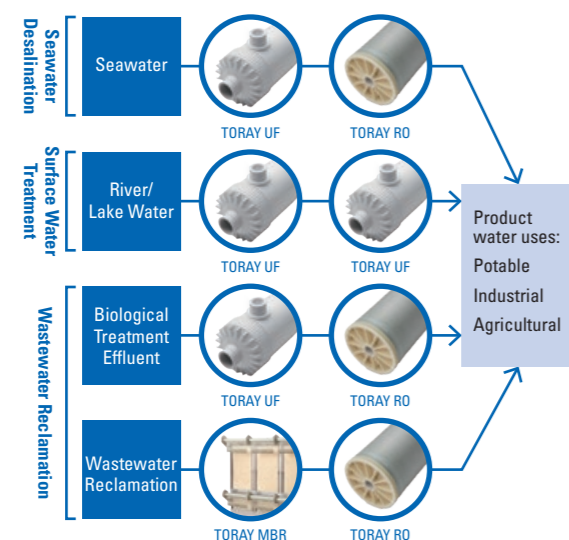
Strengthening the business foundation as a “Leading Company” in the water treatment membrane business—To achieve expanding global market share and secure profitability—

The Strengths of Broad Product Lineups and a Global Integrated Operation System

As the core business in the Environment & Engineering segment, the first strength of the water treatment business is its ability to propose total solutions (IMS*) through the combination of its broad product lineups. Toray Group develops, produces, and sells various membrane products of different diameters entirely in-house in accordance with the substances to be separated during water treatment, from reverse osmosis (RO) membranes to nanofiltration (NF) membranes, ultrafiltration (UF) membranes, and microfiltration (MF) membranes. In this way, it designs the optimal system in accordance with the water source and application to achieve the highest performance in an economical manner. The second strength is its global integrated operation system for production, sales, and technology. Through an organization consisting of five locations globally, the Group reliably supplies high-quality products and offers detailed customer support in a timely manner. It has also established R&D bases beyond Japan in China and India, and is committed to developing new products that align with the water quality and needs of each region.

* IMS: Integrated Membrane System

IMS (Integrated Membrane System)

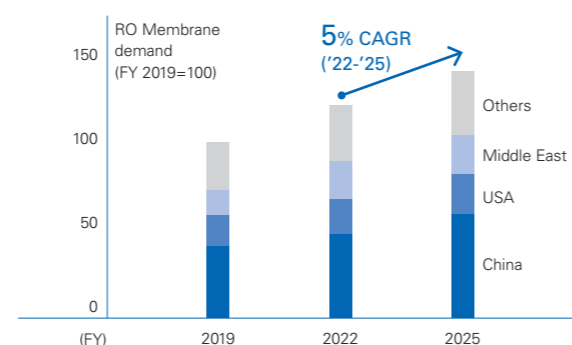


RO Membrane Demand to Grow at an Annual Rate of 5%

Demand for mainstay RO membranes is anticipated to grow at an annual rate of 5% through 2025. As the largest market, China is expected to see greater demand even as applications change, including the launch of applications for new energy in contrast to a contraction in applications for thermal power generation as the country aims to achieve peak carbon emissions by 2030. Moreover, the

U.S. market is experiencing growing demand for sewage and wastewater reuse as a countermeasure for droughts, especially on the West Coast, whereas the Middle East market continues to construct large-scale seawater desalination plants, leading to an outlook for strong demand.

RO Membrane demand outlook (Toray's estimate)



Main Initiatives of AP-G 2025

Under AP-G 2025, the Group aims to increase market share and secure profitability by (1) expanding business and solving social issues, (2) enhancing activities in growth business fields and growth applications, (3) strengthening price and non-price competitiveness, and (4) enhancing its sales network and the sophistication of its sales methods. In addition, the Group supports these efforts by (5) strengthening its organizational power and governance.

Five Major Issues

1 Business expansion and solving social issues	<ul style="list-style-type: none"> Achieve top market share in RO business Enhance activities in growing water reuse field Development of brine mining technology and study of product recycling
2 Enhance activities in growth areas and growth applications	<ul style="list-style-type: none"> Promote global business development in growth fields such as Water reuse, ultrapure water for semiconductors Keep No.1 position of SWRO and further enhance our presence in China and the US market
3 Strengthen price and non-price competitiveness	<ul style="list-style-type: none"> Development of high-added-value products Promote thorough cost reduction Development of drastic cost reduction technology for the future
4 Enhance our sales network and sophistication of sales methods	<ul style="list-style-type: none"> Strengthen web and digital marketing Expand maintenance warranty sales using ICT technology Enhance collaboration with partners
5 Strengthen organizational power & governance	<ul style="list-style-type: none"> Provide opportunities and HR development for young employees Strengthen quality management systems

Growth Driver Strategies

Aiming for the Top Global Share of RO Membranes

In the mainstay RO membrane business, the Group operates through an organization consisting of five locations globally in order to accelerate the development of high-added-value products that reflect customer needs in a

timely manner. Similarly, it will use this organization to enhance sales activities for priority applications and to construct global supply chains in a way that aligns with sales expansion. In addition to promoting cost reductions, the Group also works to further strengthen non-price competitiveness by enhancing its technical services. In short, the Group will globally deploy technical services that integrate everything from technology proposals for customers to support for the use of these technologies via after-sales services. Through these efforts, the Group aims to capture the top global share of the RO membrane market in 2025.

Enhancing Sales Activities for Sewage and Wastewater Reuse Applications

Since the start of the 2000s, efforts to reuse sewage and wastewater, especially in countries and regions suffering from drought, have accelerated. Compared to seawater desalination, sewage and wastewater reuse costs about one-third and it is easier to obtain the raw water, even in inland areas. Moreover, water reuse helps reduce environmental impact by curtailing wastewater discharge, which has led the market to expand at a pace exceeding at an annual rate of 10%. For example, with its poor access to water resources, Singapore began operating an advanced treatment plant called “NEWater,” which even enables sewage water to be used as drinking water. In addition to developing new products and making IMS proposals, the Group is working to strengthen its ability to communicate through a dedicated website and to allocate resources in a focused manner as a means of incorporating demand for these applications scattered among different regions.

Global Approach to Ultrapure Water Applications for Semiconductors

Ultrapure water applications for semiconductors are another growth application. Efforts centered on Europe and the U.S. to attract and build semiconductor plants in their own countries have been gathering strength. At the same time, as the performance of semiconductors improves and the fabrication process evolves, more advanced requirements are being placed on the cleaning water used at each stage of the production process, thereby increasing the need for ultrapure water. In response to these demands, Toray Group developed a new product that significantly enhances the ability to remove silica and other substances from water that cause lower yields during semiconductor fabrication cleaning processes. Along with implementing intensive promotional activities for this product and developing more effective energy-saving products, the Group aims to expand business activities for ultrapure water production applications for semiconductors.

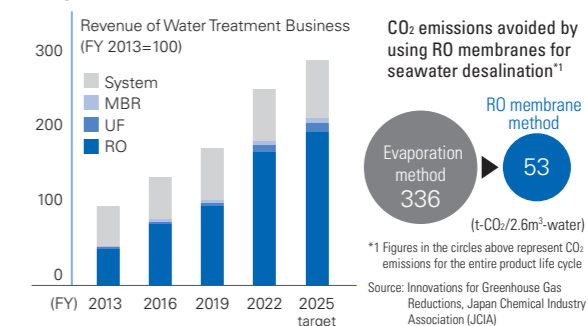
Maintaining the De Facto Standard Position for Seawater Desalination

In addition to increasing demand for water stemming from a growing population and industrial development policies, rising environmental awareness means the Middle East continues to construct large-scale seawater desalination plants using the RO membrane method, which generates few CO₂ emissions. This trend in seawater desalination applications is also spreading not only in the Middle East but also in North Africa against the backdrop of skyrocketing energy prices. Moreover, RO membrane

replacement demand from large-scale desalination plants is expected to increase in line with the accumulation of new plants. Although Toray's technology has succeeded in becoming the de facto standard for seawater desalination applications and has captured an overwhelming majority share, Toray Group will continue to construct supply chains that correspond to this growth in demand, become the accepted provider of specifications for replacement demand through technical service enhancements, and engage in efforts aimed at a further shift to localization and uncompromising cost reductions. In this way, the Group will solidify the de facto standard position.

Under AP-G 2022, the Group enhanced its systems for local production for local consumption and steadily promoted enhancements to its business structure, thereby achieving business expansion that exceeded the target. Under AP-G 2025, the Group will continue to promote the expansion of business activities for all growth applications, centered on the RO membrane business, with the aim of increasing revenues approximately 1.2 times over the three years. At the same time, the Group will contribute to the achievement of sustainability targets and to the realization of carbon neutrality through business expansion.

Target for FY 2025



Sustainability Target	FY 2013 (Baseline year)	FY 2022	FY 2025 Target
Water filtration throughput contribution by Toray's water treatment membranes	27.23 million tons/day	2.4-fold	2.9-fold

Satoshi Shimoyama

Corporate Vice President
General manager,
Water Treatment &
Environment Division



Pharmaceuticals and Medical Products Business

Basic Policy under AP-G 2025

Utilizing the outcomes/achievements during AP-G 2022 and improving the probability of success in development, boost profitability, and restore the soundness of the business within FY 2025.

Realizing a profitable and sustainable business foundation around 2030.

Business Overview and Main Initiatives of AP-G 2025

In addition to pharmaceuticals such as Dorner™ and Remitch®*, dialyzers, dialysis machines, extracorporeal circulation therapeutic columns, catheters, and contact lenses, Toray Group's pharmaceuticals and medical products business contributes to health and hygiene as well as longevity with a variety of products using advanced materials. Toray Group's technologies in fibers, membranes, and surface processing are primarily brought together in the fields of dialysis and blood purification. In addition to Japan, we possess production facilities for dialyzers and dialysis machines in China, and besides that in Japan sales bases in the United States, Europe, China, South Korea, and Singapore. The main tasks for AP-G 2025 include: improving the functions of and obtaining additional indications for existing products while developing their overseas business; the steady launch of the diagnostic business; and the provision of high-added-value services by utilizing DX/AI.

*REMITCH® is a registered trademark of Torii Pharmaceutical Co., Ltd.

Priority Measures

- Improve functions, obtain additional indications and develop overseas business of existing products
- Create maximum value utilizing exiting assets (tangible and intangible)
- Launch of the diagnostic business
- Identify growth areas, provide high-added-value services utilizing DX/AI, strengthen solution proposals and expand business and product development in the oncology field.
- Develop environmentally friendly products
- Place top priority on quality, foster competitiveness led by innovative cost reduction technology

Promoting New Product Development

Pancreatic Cancer Diagnostics Kit

Having obtained marketing approval for Toray APOA2-iTQ, an in vitro diagnostic test kit that assists in the diagnosis of pancreatic cancer, domestic sales will begin once insurance coverage becomes available. Pancreatic cancer is the leading cause of cancer death in Japan with approximately 38,000 per year (2020). An extremely serious disease without noticeable symptoms and a five-year survival rate in advanced stages III and IV of less than 10%, we believe that the social significance of new

In Vitro Diagnostics Kit developments that assist in its early detection will be extremely high.

Nucleic Acid Drug

Currently under development, a nucleic acid drug (TRK-250) that aims to inhibit the progression of lung fibrosis has completed Phase I clinical trials in the United States. Improved biostability, which had been an issue with previous nucleic acid drugs, and efficient delivery to target tissue—by being administered directly to the lungs as an inhalant—is expected of this new-concept pharmaceutical that has received orphan drug designation from the FDA in the United States. Inhaled by means of a nebulizer, there is almost no systemic exposure and the risk from potential side effects is expected to be low, so we aim to acquire a business partner and conduct the next phase of clinical trials.

Adhesion Barrier

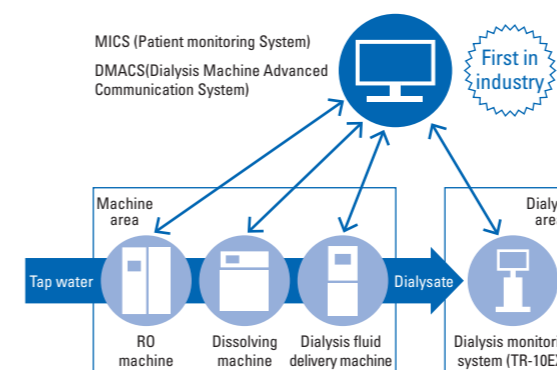
We are promoting as open innovation an adhesion barrier (TRM-270C) for use in surgical operations that combines Toray's fiber and film processing technologies with the polymer nanosheet technology of Nanotheta Co., Ltd., a start-up from Waseda University. Featuring both flexibility and good adhesion to organs—due to its laminated structure of an anti-adhesion layer made of biodegradable resin and a support layer made of water-soluble resin—we are developing this product as a medical device that provides the necessary handling in laparoscopic surgery and in robot-assisted surgery, which has been increasing in recent years. Clinical trials having commenced in the gastroenterology field in 2022, we are also organizing clinical trials in the fields of obstetrics and gynecology.

Strengthening the Dialysis Business

In our core dialysis business, we are focusing on developing a new system that will contribute to improved patient satisfaction, ease the burden on healthcare providers, and reduce costs (time). The AI-based analysis system utilizes big data to select, depending on the patient's condition, the appropriate dialysis membrane, adjust the amount of fluid removed and blood flow in real time, and even to predict falls in blood pressure during treatment. We are also demonstrating our strengths as the only manufacturer in Japan that covers the full range of dialysis-related needs, from reverse osmosis (RO) tap water treatment equipment to dialysis machines. In addition to evolving an artificial dialysis management system that links a series of devices with electronic medical records, we have developed a

Personal Health Record (PHR) system to collect information on patients' daily lifestyles, further strengthening our total dialysis solution.

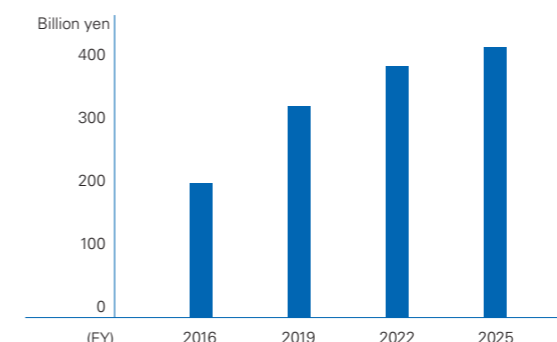
Artificial dialysis management system



Enhancement of HotBalloo™

As Japan moves toward a super-aging society, the number of patients with atrial fibrillation, a type of arrhythmia, is increasing. Since this condition can cause cerebral infarction, heart failure, and dementia, there is a growing need for a curative ablation treatment. Toray launched the world's first hot balloon ablation catheter (HotBalloo™) for the treatment of atrial fibrillation. Using cauterization through thermal conduction, HotBalloo™ has been praised for its potential in reducing the risk of recurrence due to uneven cauterization. Having obtained insurance coverage not only for paroxysmal atrial fibrillation but also for persistent atrial fibrillation, physician-led clinical research is being commenced. Also developing a better operable second-generation product that will maintain the same level of safety and effectiveness, we are planning for its market launch in FY 2023.

Global ablation market (Estimate by Toray)



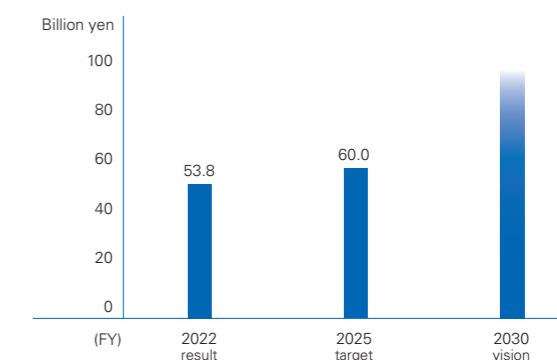
Aiming for Revenue of ¥100 billion or More around 2030

Amid the effects of soaring and persistently high raw material and fuel prices, and the NHI drug revision and reimbursement prices revision, under AP-G 2022, we secured earnings by promoting high-added-value sales, expanding indications and areas, and appropriately responding to medical facilities and government stockpiling projects during COVID-19. However, core operating income was sluggish. To escape from this situation, in AP-G 2025, we aim to achieve revenue of ¥60 billion

and core operating income of ¥2 billion by accelerating the overseas expansion and getting additional indications for existing products, strengthening the dialysis business, and sales of diagnostics.

As our long-term vision around 2030, we will pursue business expansion by means of global launch and sales expansion in the diagnostics business, accelerated overseas expansion and through getting additional indications for existing products, and the development of environmentally-friendly products. In addition, we pursue business expansion through new product launches and solution services. We aim to achieve revenue of ¥100 billion and will work to transform our business into a highly profitable one. Specifically, we will pursue synergistic effect among pharmaceuticals, diagnostics, and medical devices with nucleic acid science at the core. In the blood purification field, we will increase our competitiveness through high functionality, minimization, and recycling design, and accelerate the expansion of the dialysis business through the use of DX/AI.

Revenue Plan of the Life Science Segment



Hirofumi Kobayashi
Senior Vice President
General Manager,
Pharmaceuticals and Medical
Products Division

