TOKUYAMA

TOKUYAMA REPORT 2025

Fiscal year ended
March 31, 2025
Integrated Report

Tokuyama Value Creation Story

OUR VALUE CREATION STORY

Mission

To create a bright future in harmony with the environment, in collaboration with customers, based on chemistry

Values

Commitment to customer satisfaction as a profit source

A broader, loftier perspective

Employees who consistently surpass their predecessors

Integrity, perseverance, a playful spirit and boldness

Vision

Be a value-creative company that places first priority on R&D and marketing

Be a company that never stops challenging new domains while refining and exploiting its unique strengths

Be a company with healthy employees who have healthy families and take pride in their work at their company

Be a company that fosters bonds with people in communities and societies worldwide

FY2030 Goals

Increase the share of consolidated net sales from growth businesses to

60% or more

Overseas share of consolidated net sales

50% or more

GHG emissions (Scope 1 and 2)

30% reduction*

* Base year: FY2019

FY2050
Achieve carbon neutrality

Medium-Term Management Plan 2025

Priority issues

Transform business portfolio | Contribute to mitigating global warming | Practice socially responsible management

Goals

Net sales:	400.0 billion yen
Operating profit:	45.0 billion yen
Net sales from growth businesses	
•Percentage of consolidated net sales:	50% or more
•CAGR:	10% or more
ROE:	11% or more

The Path to Realize Our Vision

Through the steady transformation of our business portfolio, we at Tokuyama are contributing to mitigating global warming, practicing socially responsible management as stated in Medium-Term Management Plan 2025, and are making progress in realizing our Vision and toward becoming a value-creative company. We will strive for sustainable business growth by leveraging human capital and sharing our Mission and Values.

Materiality See p. 40-43 for details

- Helping to fight global warming
- Conserving the environment
- Preventing accidents and preparing for disasters
- Developing products and technologies that address social issues
- Improved chemical management and product safety
- Engaging with local communities
- Promoting CSR procurement
- Developing human resources
- Promotion of diversity and career fulfillment
- Promotion of physical/mental health

Overview of Tokuyama

We will create new value in harmony with the environment by supplying products that address social issues.

We are developing businesses based on products created through our unique technologies and efficient production system tailored to the characteristics of each of our businesses, mainly in the electronic & advanced materials that support cutting-edge semiconductor manufacturing, as well as the life sciences and the environment. We are also actively working to reduce GHG emissions from in-house power generation facilities at the Tokuyama Factory, our main production base.

Year established
1918

Employees (consolidated)
5,782 people

Net sales
343.0 billion yen

Operating profit
29.9 billion yen

Total assets
476.2 billion yen

Rating
A
* R&I Issuer Rating

Capital expenditures
24.6 billion yen

R&D expenses
16.0 billion yen

Number of production bases
In Japan 28 bases
overseas 8 bases

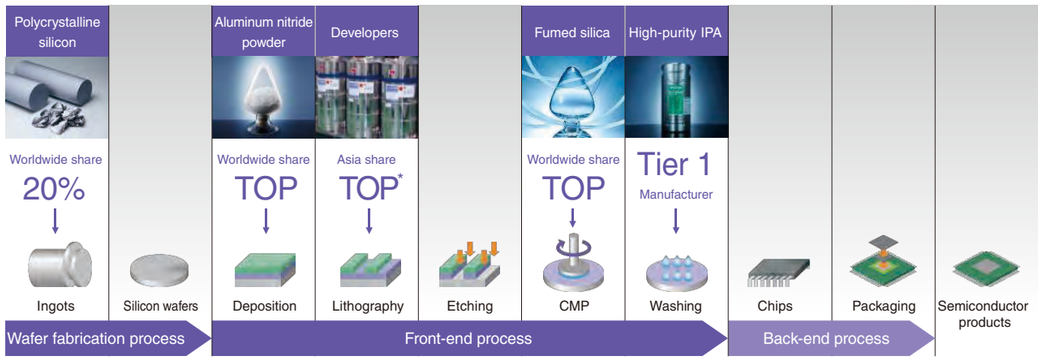
R&D bases
In Japan 3 bases
overseas 1 base

GHG emissions (Scope 1 and 2)
5,910,000 t-CO_2e

GHG emissions reduction (Scope 1 and 2)
1,350,000 t-CO_2e*
* Compared with FY2019

Electronic & Advanced Materials

Competitive products used in semiconductor manufacturing processes



* Including Hantok Chemicals Co., Ltd.

Life Science

Photochromic materials for eyeglass lenses

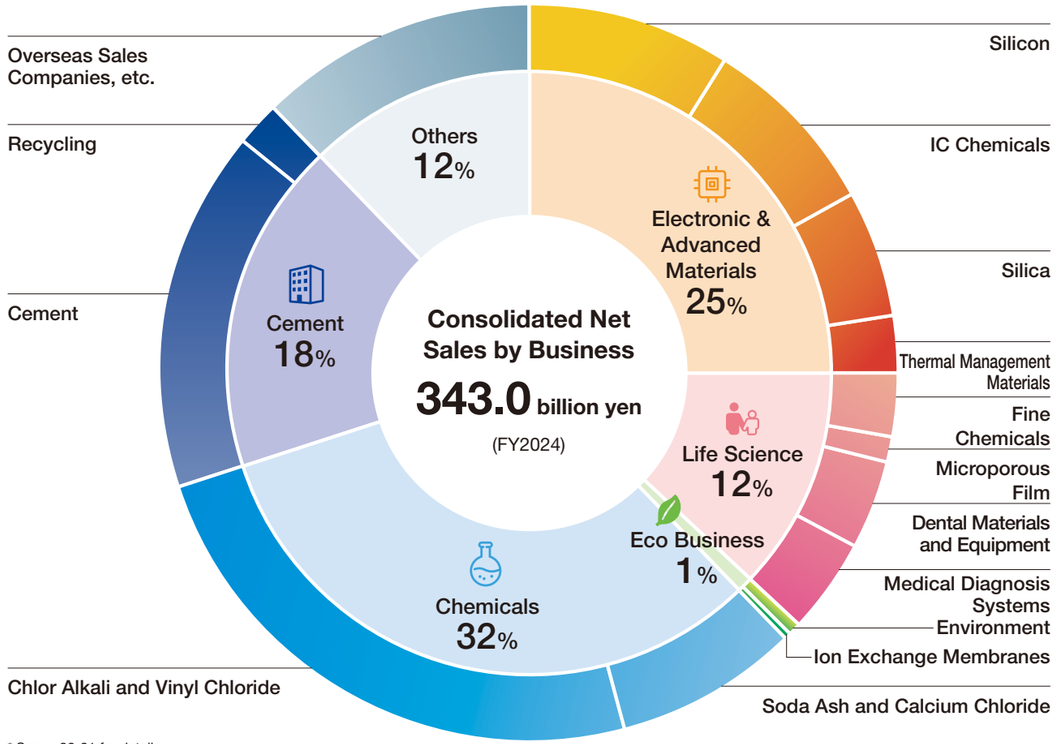
Worldwide share
No. 2 (20%)

Eco Business

The world's first waste gypsum board in a non-kiln resource recycle

100%
Fully recycled

* Shares based on our estimates



* See p. 30-31 for details

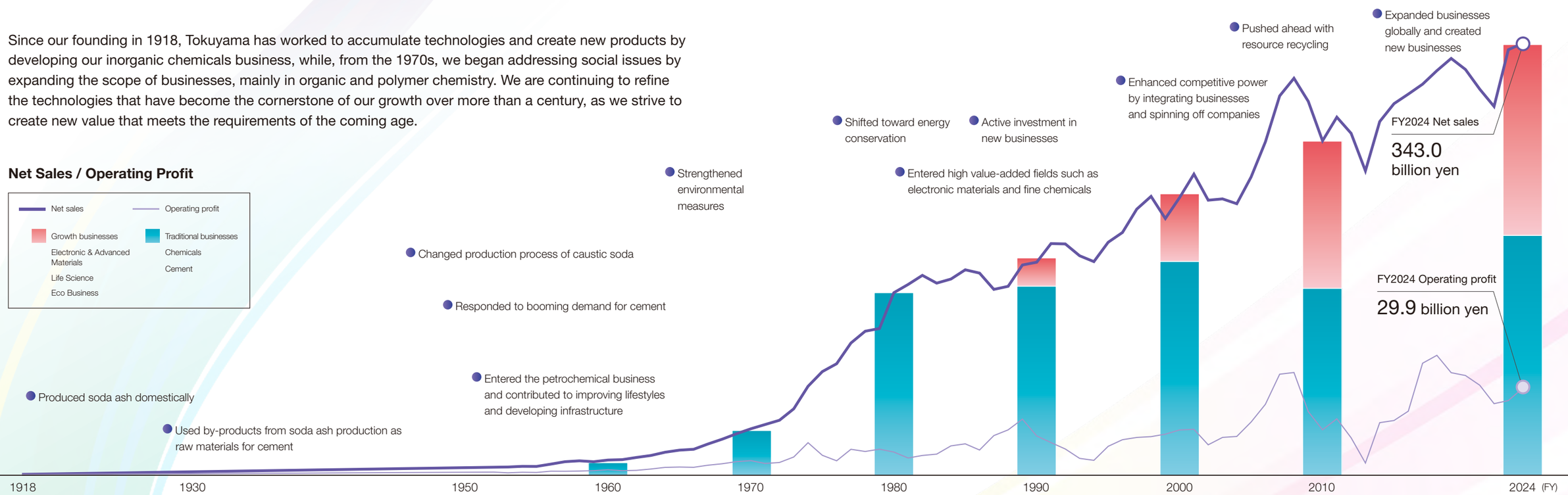
The Path to Value Creation

Historical Background and Social Issues

- The Great Depression (1929 to 1941)
- World War I (1914 to 1918)
- World War II (1939 to 1945)
- Environmental pollution problems
- Japanese economic miracle (1955 to 1973)
- Oil shocks (1973, 1979)
- Japanese asset price bubble (1986 to 1991)
- Declining birthrate and aging population in Japan
- Digital revolution (–1995)
- Kyoto Protocol (1997)
- Bankruptcy of Lehman Brothers (2008)
- COVID-19 pandemic (2020–)
- Adoption of the Sustainable Development Goals or SDGs (2015)

Since our founding in 1918, Tokuyama has worked to accumulate technologies and create new products by developing our inorganic chemicals business, while, from the 1970s, we began addressing social issues by expanding the scope of businesses, mainly in organic and polymer chemistry. We are continuing to refine the technologies that have become the cornerstone of our growth over more than a century, as we strive to create new value that meets the requirements of the coming age.

Net Sales / Operating Profit



Tokuyama Value Creation

Japanese industrial development backed by domestically produced soda ash Established the foundation for the soda business

Tokuyama's Path

1918
Nihon Soda Kogyo Co., Ltd. (currently Tokuyama Corporation) was established
Soda ash plant was constructed in Tokuyama-cho, Yamaguchi Prefecture (currently Shunan City)


Panoramic view of the Company around 1919

1924
First shipment of caustic soda (ammonia-soda process)

1927
First shipment of soda ash

1938
Central power plant completed

1938
Cement plant completed and production started


Cement Tokuyama Plant

1940
Began production of calcium chloride

Strengthened our facilities and converted our manufacturing methods in response to the needs of society Diversified businesses to evolve into a comprehensive chemical manufacturer

1952
Began production of high-quality caustic soda using an electrolytic process


Electrolyzer

1960
Nanyo Plant was constructed
Began cement production using a large kiln

1964
Entered the petrochemical business


Nanyo No. 1 Kiln (Mammoth Kiln)

1966
Entered the PVC business

1967
Entered the ion exchange membrane business, opened the East Plant to expand the petrochemical business


PVC plant

1972
Started production of isopropyl alcohol using direct hydration process

1975
Began production of caustic soda using a diaphragm process

Expansion of new businesses such as specialty and processing types, and more overseas operations underpinning our growth as a global company

1978 Entered the dental materials and equipment business

1982 Entered the fine chemicals business

1983 Entered the medical diagnostic systems business

1984 Entered the high-purity polycrystalline silicon business

1985 Entered the high-purity aluminum nitride business

1985
Opened Kashima Factory as a manufacturing base for fine chemicals


Kashima Factory

1989
Opened the Tsukuba Research Laboratory as a base for the development of specialty businesses


Tsukuba Research Laboratory

1989
Established Tokuyama America, established Tokuyama Europe

1996 Established the current Tokuyama Singapore and Taiwan Tokuyama as manufacturing and sales bases for high-purity IPA, etc.

Providing new value in the fields of electronics, healthcare, and the environment Aiming to transform into a value creation company

2001 Established Tokuyama Dental by spin-off of the dental materials and equipment business

2004 Spun off the ion exchange membrane business to integrate with ASTOM

2005
Established Tokuyama Chemicals (Zhejiang) to meet the growing global demand for fumed silica


Tokuyama Chemicals (Zhejiang)

2011
Established Tokuyama Chiyoda Gypsum (waste gypsum board recycling business)

2020
Established Formosa Tokuyama Advanced Chemicals (FTAC) to respond to needs for high-purity IPA


Formosa Tokuyama Advanced Chemicals (FTAC)

2021 Made A&T (medical diagnostic systems company) a wholly owned subsidiary, opened the Center for Commercialization of Advanced Technology in Yanai City, Yamaguchi Prefecture

2022 Established STAC (manufacturing and sales of high-purity IPA) in South Korea

2024 Opened the No. 2 Tsukuba Research Laboratory
Established TOKUYAMA VIETNAM (production and sales of high-purity polycrystalline silicon)

Contents

Editorial Policy

The *Tokuyama Report* is published to communicate the Company's management policy and medium- to long-term strategy to stakeholders in a way that is easily understood. We added new features to this report, including concrete examples of our efforts toward value creation, in response to requests from investors we interviewed and an internal survey conducted.

We hope that this report will enable better communication with our stakeholders as well as a deeper understanding of the Tokuyama Group.

This report briefly outlines information that is highly relevant to the value creation story. For more detailed IR and/or sustainability information, please visit the Company's website.

Period Covered

FY2024 (April 1, 2024 to March 31, 2025)
* The FY2025 performance forecast presented in this report is based on information as of April 28, 2025, and does not reflect the impact of the acquisition of in vitro diagnostics and in vitro diagnostic materials business.

Report Scope

Tokuyama Corporation and consolidated subsidiaries (50 companies)
* If the reported scope is different for some data in this report, the different scope will be cited.
* In principle, entities listed as Tokuyama in this report generally refer to Tokuyama Corporation and the Tokuyama Group.

Reference Guidelines

- The Ministry of Economy, Trade and Industry, *Guidance for Integrated Corporate Disclosure and Company-Investor Dialogues for Collaborative Value Creation 2.0*
- IFRS Foundation *International Integrated Reporting Framework*

Information Disclosure Framework

	Financial	Non-Financial
Overview of Strategy	***Tokuyama Report*** **(Integrated Report)** This report includes corporate activities for a wide range of stakeholders, covering both financial and non-financial aspects of Tokuyama at present and for the future that we aim to achieve. https://www.tokuyama.co.jp/eng/ir/report/annual_rep.html	
Details and Latest Data	**Investors Website** Useful information for shareholders and investors, organized as an IR Library · Financial documents (financial summaries, financial briefing materials, etc.) · Annual securities reports (Financial Section) · Corporate governance reports Our website features a chart generator that can be used to check, compare, and analyze performance, financial, and ESG-related information. https://www.tokuyama.co.jp/eng/ir/	**Sustainability Information** Provides more detailed information on Tokuyama's sustainability activities. https://www.tokuyama.co.jp/eng/csr/ ***Tokuyama TCFD Report*** Outlines initiatives against climate change based on the IFRS's four recommendations: governance, strategy, risk management, and metrics and targets https://www.tokuyama.co.jp/eng/csr/global_warming.html#section2 ***Tokuyama Sustainability Data Book*** Mainly includes data for understanding today's Tokuyama based on the perspectives of responsible care and ESG https://www.tokuyama.co.jp/eng/csr/report/index.html

Cautionary Note on Forward-Looking Statements

This report contains forward-looking statements on the Company's plans, strategies, operating performance and other matters. These forward-looking statements are the Company's assessments based on information available at the time of this report's preparation. Statements in this report are subject to various risks and uncertainties. Tokuyama's actual activities and performance may differ significantly from these projections. The Company's actual activities and/or operating performance can differ materially from these forward-looking statements as a result of many factors, including but not limited to changes in economic conditions, the operating environment, demand trends, and exchange rates.

Disclaimer

This report is for information only and is not intended as a solicitation. The Company assumes no liability for any losses due to investment decisions made by relying on forward-looking statements, numerical targets, or other information contained here.

Message from the President

We will focus our management resources on the three growth areas of electronics, healthcare, and the environment, and build a sustainable business portfolio that captures the structural changes in industrial society

Japan's chemical industry is now facing a historic turning point. Intensifying global competition due to the rise of emerging Chinese manufacturers, the direction of US trade policy, and growing geopolitical risks in Ukraine and the Middle East. Amid an ever-uncertain business environment, Tokuyama has entered the final fiscal year of Medium-Term Management Plan 2025. Many management issues require faster responses to ensure sustainable growth in the future, these include reforming our organizational culture and transforming our business portfolio. As President and Executive Officer, Hiroshi Yokota will introduce the Tokuyama Group's current and future vision and medium- to long-term growth strategy.

Hiroshi Yokota

Representative Director, President and Executive Officer

Management Approach

Foster organizational culture change – Develop human resources with high aspirations and a sense of mission

It has been more than 10 years since I became Tokuyama's President and Executive Officer in March 2015. I have always tried to manage the Group with ambition and enthusiasm. Setting and steadily achieving lofty goals requires, above all else, a strong sense of mission and the drive to overcome diverse challenges. This applies to members of the management team and employees alike. I made reforming our organizational culture a central management theme to motivate every employee and restore the pioneering spirit Tokuyama was founded on; a spirit it gradually lost. I knew that if all employees shared Tokuyama's purpose and values and worked hard to embody them, the Company would definitely start moving forward. Though we are still working on transforming our organizational culture, we are successfully reviving the customer-focused, positive attitude that has always been a trademark of Tokuyama employees.

Let me explain why I consider restructuring our organizational culture to be one of our most important management challenges. Reforms of manufacturing companies tend to focus on developing innovative technologies and products not directly related to their core businesses, creating new businesses, and generating dramatic business growth; activities that are not directly connected to one another. Certainly, such non-connected efforts are the driving force behind remarkable corporate growth, but we must not forget that there are also hidden treasures in continuity we sometimes miss. We tend to believe that we have done all we can with our existing businesses, but there is always room to improve and become more competitive so long as we refuse to be satisfied with things as they are in pursuit of the ideal. Furthermore, since most new cutting-edge products are created by combining existing technologies, it is extremely important to have a deep knowledge of current technologies. We believe that retaining our curiosity about new technologies and trends in society, industry, and customers, and proactively building external networks and seizing opportunities will help foster reforms to our organizational culture. We must remain curious about economic, industrial, and social trends, as well as changes among client companies, and all employees must utilize their personal networks outside the Company to acquire new knowledge.

Companies seek to develop and use human resources through multi-layered education and training systems and rational HR systems, but workplace atmosphere and culture, and the presence of superiors and senior colleagues who serve as role models, are what keep employees curious and motivated. From research and development to marketing, though job duties and responsibilities may differ, the only way companies can create innovation is to gain new insights from daily work and encounters with people, nurture those insights, and then apply them to their work. I believe that efforts to create such an environment are what constitute a change in organizational culture.

Tokuyama Group's Human Capital Management

Overcome a declining population with diverse individuality and original ideas

Tokuyama Group's ability to continue growing sustainably in the future depends entirely on our human resources. How can we recruit, develop, and utilize talented people with high aspirations and a positive attitude? This is an extremely important factor that will determine whether we rise or fall. The number of births in Japan in 2024 is expected to be approximately 680,000. The number of births during the baby boomer generation, which supported Japan's high economic growth, was approximately 2.09 million per year, meaning the birth rate has fallen by about two thirds. Meanwhile, the manufacturing sector (secondary industry) employs approximately 25% of the total workforce in Japan, of which the chemical industry accounts for only 10%. With so many socially alluring employment options available, at such places as trading companies and banks, the only way to get talented young people to choose Tokuyama within the chemical industry is for us to completely reform our organizational culture so that we become a more attractive place to work.

Japan's chemical industry is facing fierce global competition. Technological capabilities are improving rapidly, especially in China and Taiwan, where many

researchers are hard at work every day developing new technologies and products. Laboratories in these regions routinely operate day and night. Japanese chemical companies that promote work style reforms can only compete on equal terms with emerging Asian manufacturers with their quantitative advantages in labor availability and time, by developing, and making valuable assets of, developers and engineers who have an unwavering passion for their work. These workers must also be able to do high-level work with high intensity and speed. To create new solutions that will support Tokuyama in the future, we will nurture the diverse individuality and original ideas of the researchers we will rely on to create these solutions. Tokuyama's enduring theme is to be a corporate group that puts people at the center of everything, and this is my greatest mission as its president.

Progress Status of Medium-Term Management Plan

Medium-Term Management Plan 2025: a mix of results and challenges – Steady progress in changing executive and general manager mindsets

We are implementing the final stage of Tokuyama Group Medium-Term Management Plan 2025. Though it will be difficult to achieve the targets forecast for the fiscal year ending March 2026 as our assumptions have changed significantly since we formulated Medium-Term Management Plan 2025, we anticipate record-high net sales and operating profit. One thing I want to highlight in particular that has resulted from our efforts so far is the significant change in the attitude of senior executive class employees, such as directors and department heads, toward management and the business. Tokuyama is an historic company founded in 1918, and so has a deeply conservative, precedent-based mindset that has led it to run its business by letting things take their natural course. We formulated a medium-term management plan early on, but it was obvious that our executives and managers lacked the strong will to achieve the goals it laid out. We cannot achieve our medium- to long-term goals by simply adding up the figures submitted by the manufacturing and sales departments and calculating sales and profits. The true purpose of a medium-term management plan is to set qualitative and quantitative targets to aim for and then consider what needs to be done to achieve them. Since I became president, I have asked the Group's management to be thoroughly committed to figures, and to devise, and steadily implement, effective strategies for achieving targets. I believe that this will transform Tokuyama. These efforts have created a culture among senior executive class employees that encourages independent thinking about management and business, fostering a more positive attitude toward work, which I believe is a major achievement over the past few years.

Meanwhile, though steady progress has been made on transforming our business portfolio, which is the most important theme of our medium-term management plan, our work is not finished. The percentage of consolidated net sales from growth businesses in FY2024 is expected to be approximately 43% (Others Segment excluded), so management needs to try harder if we are to achieve our 50% target. We are slightly behind in our efforts to transform our business portfolio because we have not made as much progress in developing new technologies and products in the growth areas of electronics, healthcare, and the environment as we planned. There is a lack of energy for commercializing and monetizing businesses by learning what solutions customers really want and then providing those solutions when customers want them. To achieve this, persons in charge of development or marketing must demonstrate strong leadership, clearly define winning strategies, and respond in a timely manner. To that end, we established a structure from FY2025 that enables the Corporate Planning Division to coordinate more readily with the New Business Division, and put a system in place that allows new teams to vigorously advance development for commercialization. We will use these efforts to maximize customer satisfaction and further increase our presence in growth areas.

Basic Policies for FY2025 and Direction for the Next Medium-Term Management Plan

The keys to beating competition from emerging companies are overwhelming specifications and cost competitiveness

In FY2025, the final fiscal year of the current Medium-Term Management Plan 2025, we intend to devote all our efforts to achieving our targets. Most people would consider the goals themselves to be challenging; 400 billion yen in sales, operating profit of 45 billion yen, a sales growth rate (CAGR) for growth businesses of 10% or more, and an ROE of 11% are not figures that can be easily achieved. However, setting high goals and working toward them with the collective strength of the Group will provide employees with invaluable experience, which will surely become a valuable asset for Tokuyama. In FY2025, we will continue using the three driving forces of electronics, healthcare, and the environment to accelerate business portfolio transformation and ensure a firmer growth trajectory for the Group by quickly commercializing new technologies and products. Considering the trade policies of the United States and the rise of Chinese manufacturers, Tokuyama can only achieve sustainable growth by acquiring overwhelming advantages over our competitors for the next five years. In FY2025, we will complete Medium-Term Management Plan 2025 and establish a foundation for gaining a strong lead in the market. In April 2025, we decided to acquire JSR Inc.'s in vitro diagnostic pharmaceuticals and in vitro diagnostic pharmaceutical materials businesses. We believe that this business will play an important role in transforming our business portfolio and will also generate significant synergies with our existing businesses. We will pursue business development with a sense of urgency while striving for mutual harmony.

Becoming more cost competitive will also be an important management issue for our next medium-term management plan. Building overwhelming quality capabilities and cost competitiveness is essential to competing with Chinese manufacturers. In the past, Japanese manufacturers were able to offer a wide range of materials and products in the Chinese market. However, local manufacturers have grown rapidly and become stronger with support from the Chinese government. As I mentioned earlier, they are focusing on research and development, and are now able to produce products that are comparable to those made in Japan. To compete with Chinese companies in the global market, Japanese companies must create technologies and products that provide added value that only they can offer, and sell them at competitive prices. We must achieve complex and advanced manufacturing to produce specifications, quality control, and manufacturing processes that emerging manufacturers cannot match. The next medium-term management plan will be a crucial test of Tokuyama's true worth.

There is no doubt that the outstanding research and development capabilities and steady marketing power we have cultivated over many years are the driving forces behind successfully completing Medium-Term Management Plan 2025 and continuing to lead the industry in the next stage. In recent years, the term "work-life balance" has become widely touted in Japanese corporate society, but I believe there is nothing wrong with choosing to make a certain period in your life one in which you dedicate your energies to the work in front of you, be it research and development or marketing. Of course, this does not mean forcing employees to work excessively. I encourage our people to engage in the wonderful work of R&D and marketing responsibly with an equivalent sense of mission, passion, and spirit.

We will devote all our energy to creating new technologies and products that meet the potential needs of our customers, and then quickly commercialize and monetize them. We will invest profits gained from this in the next development stage, thereby boosting all of our growth businesses. Establishing this cycle will ensure that Tokuyama will continue to grow into the future as a corporate group with research and development at its core.

Tokuyama DX and Global Expansion

Aiming to become a global company with an overseas net sales ratio of at least 50%

Along with transforming our organizational culture and strengthening research and development, two management issues we have focused on during Medium-Term Management Plan 2025 are promoting digital transformation (DX) and accelerating global expansion.

With regard to DX, we are using digital technology to streamline operations and free up human resources, while also making full use of AI to speed up development, achieve the ultimate in stable production, ensure proper maintenance, and streamline the supply chain. DX is more than simply going paperless or promoting digital tools. The original purpose of DX is to have all employees share and utilize the digital data accumulated within the Group to transform management and business. In that sense, promoting DX forms the core of our medium-term management plan and embodies our management strategy. We will continue to promote digital transformation efforts in a wide range of fields, with a focus on production technology, and strive to further enhance our business promotion system.

Regarding our international expansion, we have expanded internationally and now have manufacturing and sales bases, and conduct business, in 10 countries and regions around the world, mainly in Asia. We have been working to deepen and explore global markets and establish overseas bases, with the goal of increasing the overseas share of consolidated net sales to 50% by FY2030. The overseas share of consolidated net sales was 27% in FY2024, up 1% over the previous fiscal year. The main markets for the electronics, healthcare and environment businesses, which our Group regards as growth areas, are in overseas countries and regions such as Asia, Europe, and the United States, and thus we have entered an era where we cannot establish businesses by focusing on domestic markets alone. Tokuyama also offers several unique and competitive global products, including high-purity aluminum nitride (AlN) powder, for which we hold the world's top market share, and our activities with respect to those products are attracting a great deal of attention from investors and industry participants around the world. We will continue to strengthen our customer and sales bases through flexible marketing activities tailored to the market characteristics of each country and region. We also plan to expand our global business promotion structure further by recruiting local management staff familiar with local market trends and business practices and promoting them to executive positions, and by nurturing young Japanese staff who can play an active role on the world stage.

Contribute to Mitigating Global Warming, Practice Socially Responsible Management

Linking 10 material issues with KPIs to contribute to environmental and social sustainability

The essence of CSR (Corporate Social Responsibility) and ESG (Environment, Society, and Governance) is to provide our company's unique value to various stakeholders including our customers, and in that sense, it is no exaggeration to say that they, themselves, are our core business. For example, reducing GHG emissions through fuel conversion and process improvements, developing and rolling out new products that contribute to energy conservation at client companies by using unique technologies such as electrolysis, and promoting decarbonization efforts through regional collaboration that we have established ahead of the rest of Japan are all efforts that provide new value to industrial society and at the same time are inherent business activities of private companies that lead to customer satisfaction. It is also essential for companies to respect human rights through their business activities and to increase the potential of the human resources that support them in order to survive. If a company only pursues sales and profits while ignoring harmony with the environment and social benefits, it will not be able to gain the understanding of its stakeholders, and will not co-exist with society.

Tokuyama identified 10 material issues in 2021 and has been working on them as a group, linking them to its Key Performance Indicators (KPIs). Contributing to the sustainability of the industrial society in which the Tokuyama Group operates and the natural environment in which it resides will make Tokuyama itself more sustainable. Additionally, actively inviting external directors to serve on the Board of Directors will make governance more effective and transparent, which is the most effective way to convey to shareholders, investors, and other stakeholders that the Group is being run in a sound and fair manner.

Tokuyama also contributes to the local community of Shunan City, Yamaguchi Prefecture, where the Company was founded, and is promoting the Shunan Carbon Neutral Industrial Complex Initiative in collaboration with Shunan City, the Society of Chemical Engineers, Japan, and industrial complex companies in order to disseminate new ideas for the chemical industry to society at large. This initiative, in which local companies and the local community work together to advance decarbonization efforts, resonates with Tokuyama's management philosophy and its sentiment toward Shunan City. Going forward, the Group will continue to undertake a variety of initiatives at its domestic and overseas production and sales bases, including employment, contributions to local economies, support for cultural activities, and preservation of the local environment, in order to remain a corporate group that lives in harmony with the environment and moves hand in hand with local communities.

A Message for Our Stakeholders

Bringing together the collective strengths of Group employees to create Tokuyama's future

We believe that the source of Tokuyama's competitiveness is our technological development capabilities. We are a materials manufacturer, so most people may not be aware that many of the products our Group develops and provides include chemicals, cement, electronics, life sciences, and environment-related products that drive industrial development and fundamentally support people's lives. Tokuyama's growth strategy involves leveraging the technological development capabilities we have cultivated over our long 100+ year history to focus our development resources in the growth areas of electronics, healthcare, and the environment, and establish a next-generation business portfolio that will enable us to quickly respond to environmental changes. This basic policy will remain unchanged in the next medium-term management plan, which begins in FY2026. Going forward, the Group will continue to leverage its unique technology and diverse human capital as sources of competitive advantage to meet the challenges of resolving various social issues, pursuing sustainable long-term growth, and maximizing corporate value. At the same time, as a global value-creating company, we will help achieve an economically sustainable society.

Finally, let me share my thoughts on engaging with stakeholders. Since our founding in 1918, the Tokuyama Group has grown steadily thanks to the support of our shareholders, investors, customers, business partners, employees, and local communities, and we have applied the insights gained from dialogue with these stakeholders to our management and business operations. My responsibility as the person in charge of the Tokuyama Group is to provide our stakeholders with value only Tokuyama can provide, and to practice sound and fair management that meets their expectations. The business environment surrounding the Group remains uncertain, but we are determined to merge the collective strengths of all Group employees to create Tokuyama's future. We sincerely hope that all our stakeholders will continue to give us their understanding and support.

Value Creation Process

The Tokuyama Group is contributing to resolving social issues through business operations and to creating a sustainable future, in line with our Mission. These steps are highlighted in the Value Creation Process.

Mission

To create a bright future in harmony with the environment, in collaboration with customers, based on chemistry

Vision

- Be a value-creative company that places first priority on R&D and marketing
- Be a company that never stops challenging new domains while refining and exploiting its unique strengths
- Be a company with healthy employees who have healthy families and take pride in their work at their company
- Be a company that fosters bonds with people in communities and societies worldwide

Values

- Commitment to customer satisfaction as a profit source
- A broader, loftier perspective
- Employees who consistently surpass their predecessors
- Integrity, perseverance, a playful spirit and boldness

Toward Tokuyama's Sustainable Growth

Inputs

Financial Capital

Stable financial base
- Total assets: **¥476.2 billion**
- Net assets: **¥273.8 billion**
- Interest-bearing debt: **¥110.6 billion**
- Equity ratio: **54.9%**
- Rating: **A** * R&I Issuer Rating

Manufactured Capital

Regionally oriented manufacturing base
- A base that can respond quickly to the needs of the semiconductor market
- Number of production plants: **28 in Japan, 8 overseas**
- Capital expenditures: **¥24.6 billion**
- DX investment: **¥4.2 billion** (FY2021 to FY2024)

Intellectual Capital

Technologies and manufacturing processes developed over more than a century
A system that links marketing with R&D
- R&D expenses: **¥16.0 billion**
- Number of patents held: **3,080**
- Number of R&D bases: **3** bases in Japan, **1** base overseas
- Tokuyama Challenge Activities*: **232** activities, **2,300** participants

* An initiative in which employees independently and voluntarily take on the challenge of creating value beyond the boundaries of their jobs and organizations, cumulative total from FY2015 to FY2024

Human Capital

Human resources with a common sense of values
- Consolidated employees: **5,782**
- Training expenses (total amount): **¥0.22 billion**
- Next Business Leader (NBL) training system

Social Capital

A network of customers and business partners that we have cultivated
- Number of countries and regions with sales*: **45 countries**
- Many collaborative research achievements
- Cooperation with government and in the Shunan Industrial Complex

* Non-consolidated data

Natural Capital

Harmony with the Environment
- Environmental investment: **¥28.9 billion** (planned for the three years from FY2025)
- Energy input: **51,700 TJ**
- Water resources input*: **42,100,000 m³**
- Recycled waste: **340,000 tonnes**

* Excluding seawater used for cooling

Business Model

Tokuyama's Strengths

- Unique technology/ manufacturing processes
- Manufacturing bases for more efficient production
- Thorough waste recycling

Steps toward achieving our Vision

- Restructure the organizational culture
- Strengthen R&D
- Promote DX
- Accelerate global expansion

Research and development capabilities
Marketing strengths

Advance unique technologies, explore new technologies, improve productivity, and expand overseas

Transform business portfolio

DX
Utilization of human capital

Outputs

Growth businesses

- Electronic & Advanced Materials
- Life Science
- Eco Business

Traditional businesses

- Chemicals
- Cement

Outcomes

Customers

Supply products and services required throughout society
- Maintain performance of advanced electronic equipment and energy savings
- Improve quality of life with better health and preventive care
- Net sales: **¥343.0 billion**
- Operating profit: **¥29.9 billion**

Business Partners

Create new value through collaboration
- Revision of basic procurement policy and sustainable procurement guidelines
- Supplier evaluation* (targeting suppliers with transaction amounts over ¥100 million, confirmed that all responding suppliers are low risk): **Response rate: 95.6%**

* Non-consolidated data

Employees

Provide a fulfilling, friendly working environment
- Transition to "Pay for job" system[1]
- Promoting business efficiency through DX activities
- Selected as a KENKO Investment for Health: **Selected for the third year in a row**
- Rate of male employees taking childcare leave[2]: **57.3%**

1. Non-consolidated data
2. Data for domestic Group companies

Shareholders and Investors

Increase corporate value through growth and dividends
- Profit attributable to owners of parent: **¥23.3 billion**
- Total Shareholder Return (TSR): **152.0%**
- Engagements with institutional investors: **245**
- ROIC: **6.2%**

Communities and Society

Contributions to corporate citizenship activities
- Amount subsidized by Tokuyama Science Foundation*: **¥1.35 billion**
- Corporate citizen activity expenses: **¥0.13 billion**

* Cumulative amount for the period from FY1988 to FY2024

Environment

Reduction of environmental impact
- GHG emissions (Scope 1 and 2) reduction rate (compared with FY2019): **18.7%**
- GHG emissions (Scope 3) reduction rate (compared with FY2022): **6.2%**
- Water usage reduction rate* (compared with FY2019): **12.2%**
- Effective waste utilization rate: **89.4%**

* Excluding seawater used for cooling

Materiality

Governance

Respond to various expectations, requests and demands from stakeholders, and constantly strive to improve

Management challenges

Society	Japan	Planet Earth
Accelerated change in industrial structure, rapid digital revolution	Domestic demand shrinkage, growing health consciousness	Growing environmental consciousness, environmental regulatory tightening

Tokuyama's Strengths Supporting Value Creation

Since the Company was founded in 1918 with the purpose of the domestic production of soda ash, it has grown as a comprehensive chemical manufacturer through the in-house development of a variety of technologies. Today, we are leveraging our unique technologies to develop a wide range of products in order to transform our business portfolio to growth business such as Electronic & Advanced Materials, Life Science, and Eco Business. We are working to build an efficient production system at our Kashima Factory, and have introduced automated equipment there that makes full use of digital technology. We are also committed to thoroughly reusing by-products and waste materials through the use of a cement facility at our Tokuyama Factory.

Contributing to the future vision of growing businesses through technological capabilities by utilizing and developing unique technologies

In addition to our original business of inorganic chemistry, we have developed unique technologies in analytical chemistry and organic chemistry, and we possess many unique technologies that support our competitive advantage.

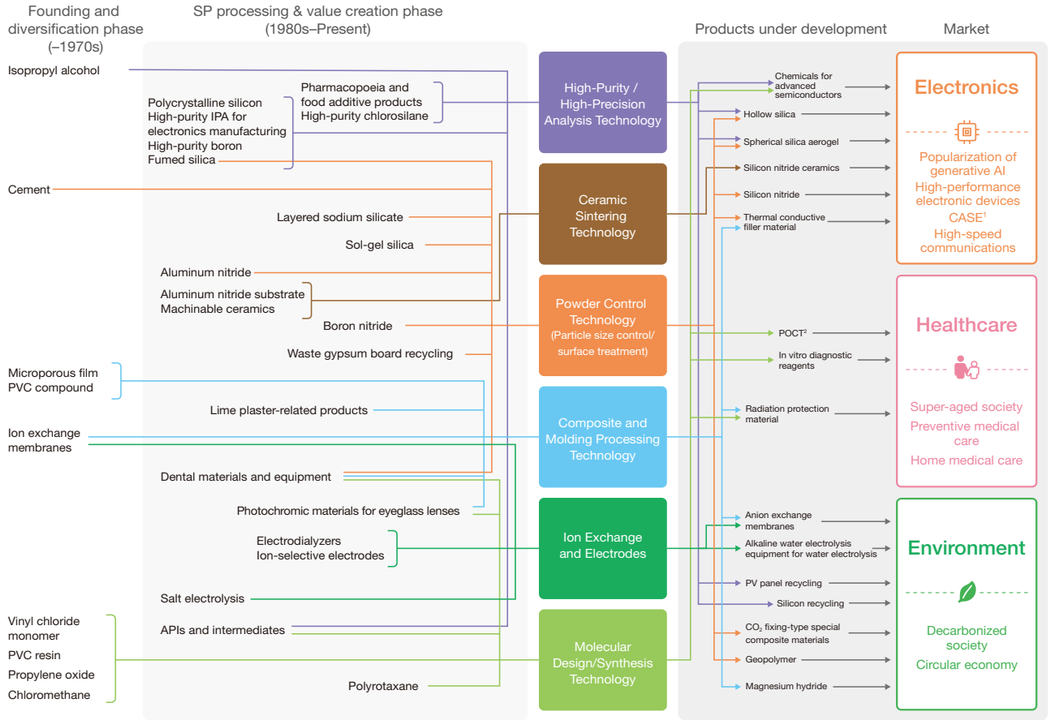
For example, we have strengths in control technologies such as particle size control and surface treatment for powder products, such as silica and aluminum nitride. We aim to launch a wide range of new products by precisely responding to new needs in the electronics field, such as high filling density in heat dissipating resins and high-performance composite materials. In addition, we have established expertise in sintering our internally produced aluminum nitride powder into ceramic substrates, and this sintering technology is now well developed. Building on this, we are advancing the development of silicon nitride ceramics.

Regarding semiconductor-related products such as polycrystalline silicon and high-purity IPA for the electronics industry, we utilize high-purity technologies such as distillation processes and high-precision analytical technologies at the ppt (parts per trillion) level to ensure the reliability of our products.

Furthermore, ion exchange membrane and electrode technologies used in salt production, food refining, and valuable resource recovery enable the separation of substances through functions such as selective permeability, and are utilized in a variety of fields. Currently, these are being applied in an expansive manner to the development of hydrogen production equipment and anion exchange membranes, which are expected to be next-generation energy sources in the environmental field.

In order to transform our business portfolio, we will continue to evolve the unique technologies we have cultivated over the years and create new value that meets our customers' needs.

"Evolution" and "Creation" of Tokuyama's Unique Technologies



1. CASE: A concept representing technological innovation in the automotive industry. Connected (IoT-enabled vehicles), Autonomous (self-driving), Shared & Services (shared use), Electric (electrification)
2. POCT: Point of Care Testing conducted at clinical sites for immediate diagnostic results

The Kashima Factory; realizing smart factories

At the Kashima Factory, the core factory of the Life Science Business Division, we are introducing digital technology in the construction of a new facility where Tokuyama Dental products are manufactured to promote automation and efficient production (i.e., the transition to smart factories).

In July 2024, we launched operations at a new facility dedicated to the kneading, filling, and packaging processes for composite resin used in dental fillings. As part of our smart factory initiative, we have introduced a kneading-assist robot, an automatic packaging machine, and an automated warehouse. The robot enables partial automation of the kneading process, allowing a single operator to run two mixers simultaneously. The packaging machine has a processing capacity of 50 units per minute, and with the planned addition of auxiliary equipment, we expect to address labor shortages and improve productivity. To support shipments to over 80 countries and regions, we have to manage more than 2,000 types of packaging materials. Our automated warehouse uses barcode-based inventory control to reduce human errors and lower management costs for those materials.

To meet strong product demand, we are implementing this initiative in parallel with regular production activities, with the aim of completing the transformation into a smart factory in FY2026. As a production base that will drive growth in the healthcare field, the Kashima Factory will improve productivity and contribute to the transformation of our business portfolio.


New building


Automatic packing machine

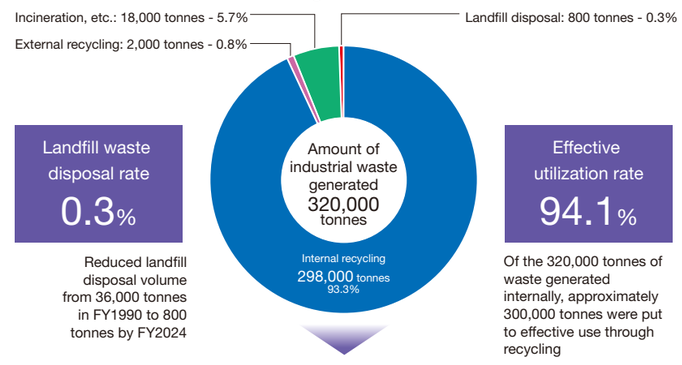
Temperature-controlled automated warehouse

Utilizing the cement facility and making full use of waste materials

At the Tokuyama Factory, which is our main production base, we are promoting the effective use and recycling of waste and by-products generated within the Company in the cement manufacturing process. Tokuyama Corporation's effective waste utilization rate has reached 94.1%, maintaining a high level. Since starting up our cement business in 1938, we have been a pioneer in the industry in recycling, using waste mud from our own soda ash plant and coal ash from our own power generation facilities as raw materials.

Currently, we accept a wide variety of waste from outside the Company, reusing combustible components such as waste plastic as an alternative source of thermal energy, and non-combustible components such as incineration ash from municipal waste as a raw material for cement. As wastes are treated at very high temperatures of 1,000°C to 1,800°C in cement kilns, combustible components are completely burned and reused as a heat source. It is notable that residual ash is used as a raw material of cement so that no external waste is generated from this process. This initiative contributes to profits as the Recycling Business and plays an important role in the waste management and recycling industry toward the realization of a recycling-oriented society.

FY2024 Industrial Waste Processing Breakdown



Landfill waste disposal rate 0.3%

Reduced landfill disposal volume from 36,000 tonnes in FY1990 to 800 tonnes by FY2024

Effective utilization rate 94.1%

Of the 320,000 tonnes of waste generated internally, approximately 300,000 tonnes were put to effective use through recycling

Contributing to a recycling-oriented society through the use of cement kilns

* All figures refer to Tokuyama on a non-consolidated basis.
* Due to rounding, the total may not add up to exactly 100%.

Research and Development Strategy

Aiming to transform business portfolio through early monetization of new technologies and products

Fumiaki Iwasaki

Representative Director, Senior Managing Executive Officer, General Manager, Research & Development Division and Life Science Business Division

Promoting commercialization through “One Tokuyama” from basic research to mass production

When I became head of the Research & Development Division in 2017, I came up with “One Tokuyama” as a slogan that succinctly outlines the direction of Tokuyama’s research and development activities. From basic research to mass production, we will transcend organizational boundaries and work to solve a wide range of technical issues, with an eye toward commercialization. The slogan reflects our strong determination to further advance our research and development system.

Our Group is currently in the final fiscal year of Medium-Term Management Plan 2025. In order to get closer to becoming “a value-creative company that places first priority on R&D and marketing,” as stated in our Vision, we are basing our technology strategy on development targeting market needs. In this uncertain era of rapid change in the global economy and society, we are working Company-wide on R&D that emphasizes collaboration with customers. Having outstanding research and development capabilities that enable us to commercialize new technologies at a speed that exceeds the pace of our customers and the evolution of the market is essential to creating new solutions that will transform industrial society, and we believe that strengthening our research and development capabilities is a critical proposition that will determine the future of Tokuyama.

As a value-creating company, focus our resources on three growth fields

In January 2025, our R&D base in Tokuyama Taiwan Corporation, relocated and expanded with the aim of accelerating research and development in the electronics field. At the Tsukuba Research Laboratory, where No. 2 Laboratory began full-scale operations in January 2024, we are making progress in the development of lead-free transparent radiation protection materials in the healthcare field, with the prospect of launching them on the market as radiation protection glasses. Anion exchange membranes (AEM), an environmental technology being developed at the Tsukuba Research Laboratory, are also receiving positive evaluation from customers for their applications in water electrolysis. We are engaging in these research activities through proactive collaborative research with external research institutes, universities, and companies, so they can be seen as the result of innovation that utilizes external knowledge and our own unique technologies.

In this way, Tokuyama’s research and development activities have progressed steadily over the four years of Medium-Term Management Plan 2025. But results have been limited, and it is also true that we have yet to produce significant new technologies and products that will support medium- to long-term growth.

The Tokuyama Group is a unique company that offers technologies in the fields of both inorganic and organic chemistry. Over the course of a century, we have developed groundbreaking new technologies and contributed to the development of industry in Japan and around the world. Our strengths lie in our determination not to rest on our laurels with existing technology, but to adapt it to meet customer demands, and in our inquisitive spirit that drives us to reach higher and dig deeper.

Meanwhile, we also face challenges because we lack experience in starting new businesses, so we established the New Business Division to overcome the so-called “valley of death.” Furthermore, intellectual property strategies will become even more critical for our efforts to expand business overseas. To commercialize and monetize technologies we develop, we will enhance the support systems that run parallel to development, hire enthusiastic R&D personnel, and develop technology and people together so our people can experience the thrill of seeing the technologies they create commercialized.

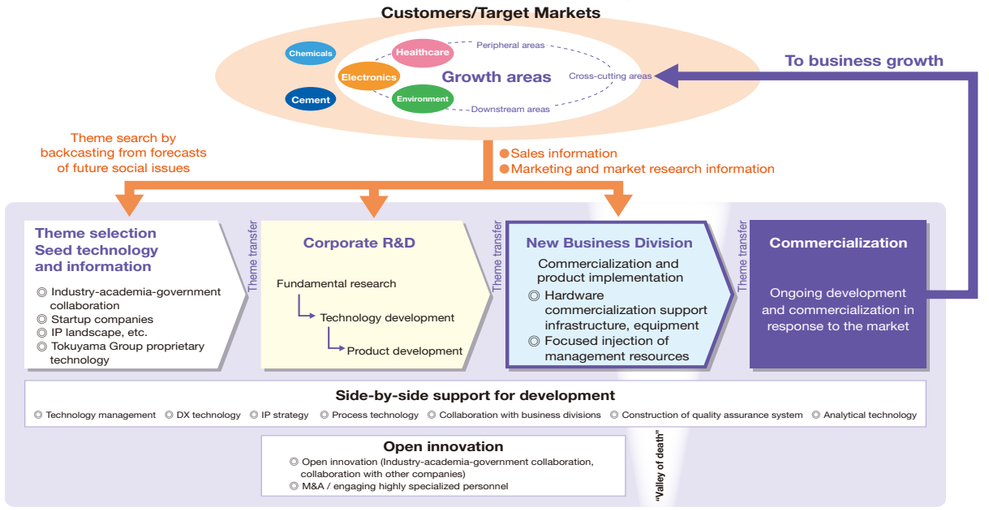
As we work to transform our business portfolio, research and development will be an important management theme and play a core role in our management strategy. We will continue to focus our management resources on growth areas with the goal of becoming a value-creating company that contributes to a sustainable society with our unique technologies.

About the New Business Division

The Tokuyama Group’s research and development structure is centered around corporate R&D, which is responsible for basic research and technological development based on medium- to long-term themes, and business development, which is responsible for improving and developing existing products to meet market needs, and then commercializing them. This allows us to improve the efficiency of research and development and respond quickly to market needs. Meanwhile, we established the New Business Division in April 2023 to act as a bridge between corporate R&D and business development in order to accelerate the launch of new businesses. The division is working on commercializing electrolysis equipment, heat dissipation applications for electronic materials, silicon nitride, and other products at its Center for Commercialization of Advanced Technology in Yanai City, Yamaguchi Prefecture.

The research themes of porous silica, which is expected to be used in the electronics field, and lead-free transparent radiation protection materials for the healthcare field were transferred from Corporate Research to the division in April 2025. These themes have been highly praised by customers as they are each based on technologies unique to Tokuyama, and we plan to continue with further technological development and to improve our supply system. As the core of new value creation for the Tokuyama Group, the New Business Division will drive the shift in the Tokuyama Group’s business portfolio to focus on growth businesses.

Research and Development Structure for Commercializing New Technologies



Initiatives for Realizing Our Vision

Development of anion exchange membranes (AEM)

The anion exchange membranes (AEM) that Tokuyama is developing are materials for water electrolysis devices that produce hydrogen. Compared with other types that have already been put into practical use, these materials do not require highly concentrated alkaline aqueous solutions and do not use precious metals as catalysts, making them a next-generation technology that is expected to be safer and more cost effective. We are developing these materials based on the hydrocarbon ion exchange membrane technology we have cultivated over many years, and in FY2024 we began supplying samples to equipment manufacturers in Japan and overseas. In anticipation of future increases in demand, we are currently establishing a mass production process at our No. 2 Tsukuba Research Laboratory and will strengthen our supply system for paid samples. We are currently installing equipment that will enable us to accommodate market demand for shipping the materials in rolls, and will pursue further product development with a view to commercialization.

Anion exchange membranes and solutions

Tokuyama Taiwan Corporation relocation and expansion

Tokuyama Taiwan Corporation (TTW) relocated and expanded to the Science Park in Zhubei, Taiwan in January 2025, with the aim of strengthening its research and development structure in the electronics field. TTW was established as Tokuyama Taiwan Laboratory, the Tokuyama Group’s first overseas research and development base, and has since promoted joint development with Taiwan’s Industrial Technology Research Institute (ITRI, Hsinchu City) at its facilities within the institute. Taiwan is home to a cutting-edge semiconductor industry, and as cutting-edge technological development advances, we will have to respond to technical issues better and develop faster. With this expansion, we will introduce some of the same equipment we use at our research and development bases in Japan, with the aim of improving our responses to customers in the electronics field and developing new products faster.

TTW Head Office (after relocation)

Human Capital Strategy

To enhance human capital, which is the key to the Tokuyama Group's sustainable growth, we will steadily implement specific measures to resolve issues based on our basic concept and enhance corporate value

Takashi Sato

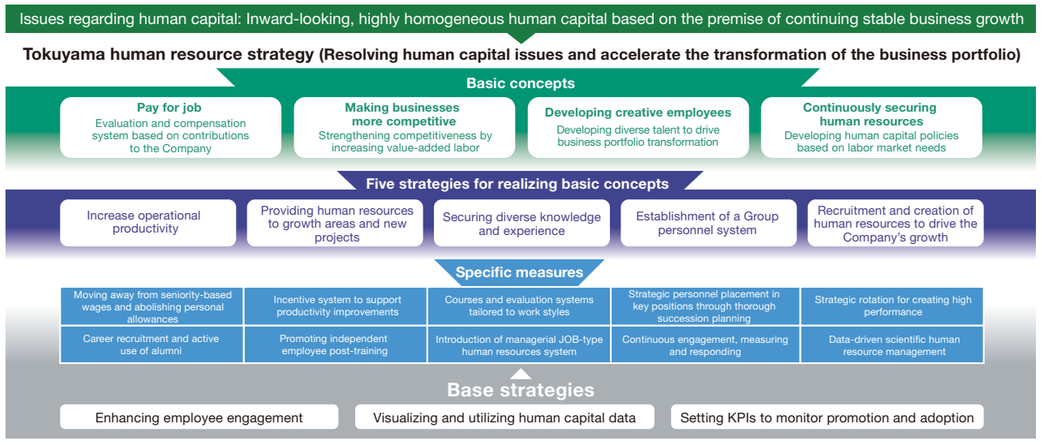
Managing Executive Officer,
General Manager, General Affairs & Human Resources Division

The Tokuyama Group regards human resources as its most important management capital essential for sustainable growth. From that perspective, in 2019 we specifically defined universal expectations for the kind of employees who will help realize our Vision, as well as the direction of their growth, in our Human Resources Policy. Even in an ever-changing business environment, we remain firmly grounded in these policies, and through resolutions and oversight at the Executive Committee and the Board of Directors, we have established a human resources strategy that is linked to our business strategy, and are working to implement various measures to ensure Tokuyama grows sustainably going forward.

Thanks to your support and cooperation, our Group has secured stable business earnings for many years through our traditional businesses, chemicals and cement. However, to respond to various environmental changes going forward, we will have to transform our business portfolio, which is a major challenge for Tokuyama. To achieve this, we need to grow our business by transforming our human capital mindset, which assumes the stable business growth we enjoyed in the past will continue, by developing human resources capable of taking on more creative challenges, and by securing people with diverse knowledge and experience from the labor market. And above all, we recognize that creating a working environment and corporate culture in which our employees can feel motivated, enthusiastic, and contribute autonomously to our efforts is the key to ensuring future growth of Tokuyama.

We will steadily implement our human resources strategy, increase our corporate value, and realize human capital management that all our stakeholders can appreciate.

Tokuyama Group HR Strategy and Positioning



System for Implementing Measures

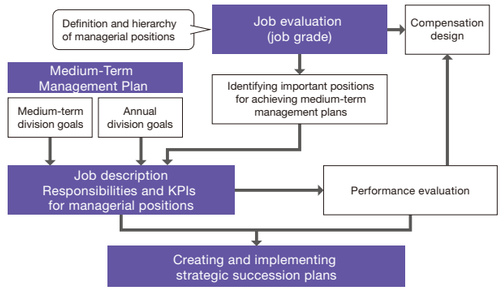
The measures set out in the human resources strategy lay out the basic concepts required of our human capital to realize our management strategy. Based on the spirit of "Pay for job," which bases compensation on how much employees contribute to the Company, the measures aim to develop and secure creative, highly productive human resources who can contribute autonomously to corporate efforts. We categorize our strategies into five strategies that are directly linked to the realization of the basic concept, and base strategies that support human capital management itself, and are developing the content of specific measures designed to ensure that these two categories of strategies function well. These specific measures focus on enabling employees to work fairly and enthusiastically by shifting from a traditional wage system based on employee cost of living, to an evaluation and wage system that places a stronger emphasis on how employees' work contributes to the Company. We also aim to secure and develop creative people who will contribute to new business growth for transforming our portfolio, and to strengthen strategic personnel placement plans and multifaceted recruitment activities to address an increasingly fluid labor market.

Initiatives for Realizing Our Vision

Introduction of a JOB-type personnel system for managers and strategic succession planning

Starting in FY2024, we have introduced a JOB-type personnel system for managerial positions. We clarified the important role managers play in management planning such as business portfolio transformation, and created hierarchical job grades to realize compensation levels according to job responsibilities so that the contributions employees make to achieving company plans are more appropriately reflected in their compensation. In addition, we also use the results of 360-degree evaluations and employee engagement as reference data when assigning managers, and we operate in a two-way manner that incorporates the opinions of non-managerial employees. In addition, clarifying the importance of management positions enabled us to implement sustainable and appropriate personnel placement plans by defining strategic positions that are key to our business strategy, creating succession plans for the next two generations each fiscal year, and discussing these plans with top management and the heads of business divisions.

Flow That Constitutes a Managerial JOB-Type Human Resource System

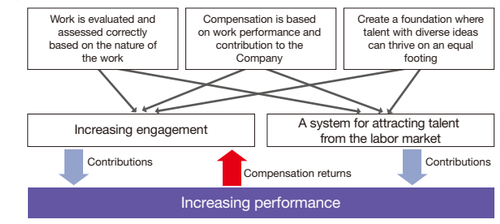


Revising the employee personnel system to improve job satisfaction

We repeatedly discussed revising our employee personnel system with the labor union and employees throughout FY2024, and have decided to transition to a new personnel system beginning May 2025. This new personnel system abolishes employee wage disparities that resulted from the age-based pay and personal allowances of our previous wage system, and creates a system where only work results lead to wage increases. We also abolished allowances such as family allowances, which were paid mostly to male employees, which we believe will alleviate gender-based wage discrimination and encourage women to play more active roles in the Company. We also established a new dual-track course system that allows employees to work according to the nature of their jobs, by providing incentives to employees who take part in projects that are important to our business plans. Furthermore, to enable quicker promotion of talented young employees, we have shortened, to the degree possible, how long employees must be employed before they qualify for promotion to managerial positions. This also makes it possible for employees to make up for career delays due to maternity or childcare leave. By properly evaluating and rewarding performance in this way, we hope to better motivate employees, especially those who drive business growth. Combined with the aforementioned wage system, we hope this encourages highly engaged employees to work productively and contribute to improving the corporate value of our Group.

Aims of the New Personnel System

- Drive thorough productivity enhancement
- Develop diverse creators who can take on new challenges



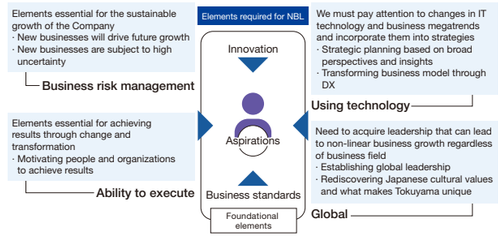
Management-level human resource development for future business portfolio transformation

We will develop human resources by actively investing in human capital. For example, to develop future management candidates, we provide Next Business Leader (NBL) training to carefully selected personnel from each division. The program began in FY2018, and by FY2024, approximately 70 diverse employees, including mid-career hires and women, will have completed this training in support of our efforts to promote diversity. The training is designed to use external resources in a practical and proactive manner, and to achieve an outward-looking business portfolio transformation. Some of these employees will be intentionally rotated in order to become management-level employees under the new personnel system we will implement beginning in FY2025. Some young employees who took the training have already won early promotions to managerial positions, and we expect them to continue to excel in the future.

Image of NBL Human Resources

Becoming a value-creative company that places first priority on R&D and marketing

People who understand the Company and business structure in detail, have high aspirations and deep insight, have the courage and charisma to envision the future of the Company and business, can create business models, and make and execute decisions



Strengthening recruitment activities

In an ever-fluid labor market, competition to secure talented people has intensified in recent years, and to secure them, we are strengthening our recruitment system, both for new graduates and mid-career hires. Beginning in FY2025, we will form a dedicated recruitment team to promote aggressive recruitment activities that take the diversity of the workers at our bases in Japan and overseas into consideration, and we will clarify and recruit the type of people we need to achieve our management plan, thereby securing personnel that match our strategy, culture, and direction.

Digital Transformation Strategy

Advancing Company-wide DX to become a sustainable, growth-oriented next-generation chemical company

Kenji Saka

Executive Officer,
General Manager, Digital Administration &
Planning Division and DX Promotion Department

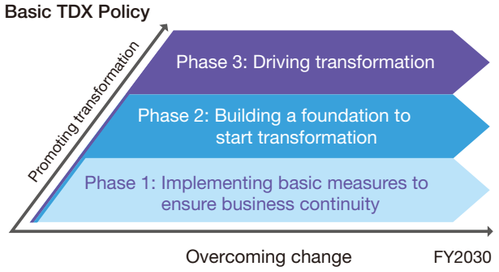
Basic TDX Policy

When we began our Company-wide digital transformation efforts, we first established a basic policy. While transformation is typically the goal of DX, initial discussions with many employees led us to firmly believe that, since we had been slow to adopt digitalization, we should not simply target transformation straight away, but should also strengthen more fundamental areas at the same time, so we decided that the basic policy for Tokuyama DX (TDX) would be based on the concept of simultaneously advancing three stages; implementing basic measures, building a foundation, and driving transformation.

We established a system for Company-wide projects based on this basic policy, and began specific TDX activities in April 2022. TDX has defined 25 themes and measures to promote transformation ranging from basic measures such as promoting paperless operations to more sophisticated ones such as utilizing AI, and has been implementing them in parallel, starting with those that are currently practical. As our activities have progressed, they have become more advanced.

The Digital Governance Code formulated by the Ministry of Economy, Trade and Industry not only calls for companies to engage in DX, but also for companies to actively disseminate information about it. In addition to our traditional communications, we compiled a DX report in December 2024, and released it in a wide-ranging and comprehensive manner to outline our Group's initiatives. We will continue to work to ensure that our stakeholders are fully informed of our activities.

Basic TDX Policy

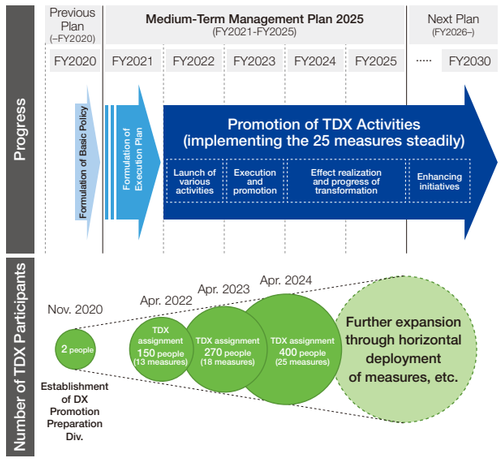


Deploying TDX Activities Company-wide

Given the constraints on human resources, one of the most difficult aspects was creating a system for deploying TDX activities Company-wide. In addition to establishing a promotion system headed by the President, we designed and implemented a system for assigning key DX personnel to each department, designing an organizational structure for DX and IT, creating a meeting body, and establishing a cross-functional PMO, which made it possible to run Company-wide projects with effective governance. With growing awareness of the urgent need to promote DX as we faced major challenges such as a declining working population, TDX gradually took hold with support from top management, and by FY2024 the total number of people assigned to TDX activities exceeded 400, and thus they had developed into activities involving all employees, both directly and indirectly.

We are also further strengthening bottom-up initiatives, such as launching productivity improvement activities (STEP-UP activities) using digital tools in FY2024. The goal is to make daily work as efficient as possible by providing an environment for all employees to use generative AI, promoting citizen development using low-code tools, and utilizing RPA. We encourage employees to take DX activities personally by sharing case studies through our in-house email newsletter, as well as through contests and certification systems, and to use these activities to reform our corporate culture.

As a result of various initiatives, in FY2024, we will exceed the 3.0 line in the DX promotion index defined by the Information-technology Promotion Agency (IPA) for the first time, and will thus be positioned as a DX-leading company.

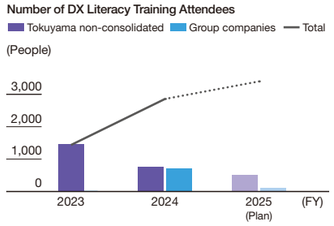


Initiatives for Realizing Our Vision

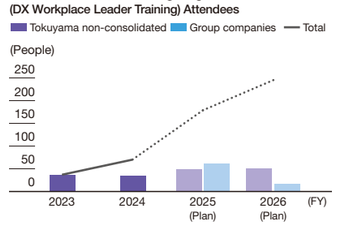
DX training attendance results

DX literacy training and select personnel training for Tokuyama Corporation began in FY2023, and for Group companies literacy training began in FY2024 and select personnel training will begin in FY2025. The expansion of the number of training attendees in each program is progressing smoothly as planned, and by FY2024 we completed roughly 80% and 30% of the planned literacy training and select personnel training respectively. Although it has only been two years since DX training began, the initial goal of expanding the base through DX literacy training and revitalizing initiatives at each workplace through DX training for select personnel is beginning to take shape, and though the exact scale and effects differ from case to case, actual concrete effects are now beginning to be felt. We are also seeing one success story connect to the next, and we expect to see this pattern spread further.

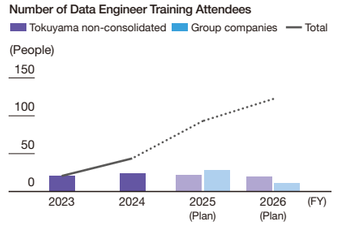
Number of DX Literacy Training Attendees



Number of DX Leader Training Program (DX Workplace Leader Training) Attendees



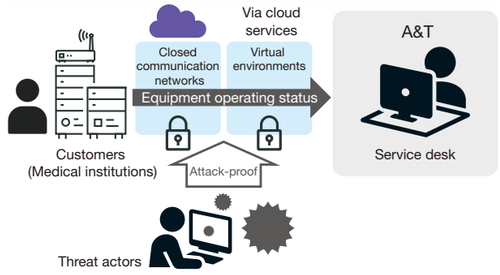
Number of Data Engineer Training Attendees



A&T builds a remote maintenance structure

A&T Corporation (A&T), a wholly owned subsidiary of Tokuyama, is developing products related to clinical testing, and supports a wide range of medical facilities, including hospitals and testing centers. The company is characterized by its consistent product development, sales and support, and has also emphasized providing remote maintenance. However, in recent years, the aging of equipment and systems, the streamlining of increasingly complex operational management, and the need to meet security requirements have become urgent issues, so we built a new remote maintenance infrastructure that fully employs cloud services. This new infrastructure has significantly improved security and is already producing tangible results, including increased customer satisfaction and sales. We will continue to expand our features and services to help our customers solve their problems.

Creating secure environments with low security risks



▶ Resolving existing issues with aging equipment and systems, streamlining complex operation management, and new security requirements

Progress with major KPIs

TDX has established KPIs to regularly monitor the progress and effectiveness of the 25 measures. Of these, the important items related to achieving Medium-Term Management Plan 2025 are designated as "15 main quantitative targets," and we are working to achieve them. To build a foundation, we utilized digital twin models constructed at each plant to create the "Tokuyama Factory Optimizer with Rapid Calculation of Economic efficiency (T-FORCE)." Using T-FORCE enabled us to devise business strategies that took environmental changes into consideration and dynamically revise operational policies, and we expect that it will serve as the foundation for our transformation.

While Company-wide, cross-sectional measures are under way to improve productivity, enhance functionality, and increase speed, our future challenge will be to expand bottom-up activities initiated by workplaces. Through digital tool-driven STEP-UP activities and inter-organizational exchanges, we will also work to raise the level of autonomous activities at the workplace level, and we will work together as a company to achieve our goals for FY2025.

Category	15 main quantitative targets	Progress (0 1 2 3 4 5 6)
Building a foundation	1. Complete installation of SCM system in the Kashima Factory	Apr. 2022
	2. Complete construction of a digital twin model for the entire Tokuyama Factory	Apr. 2023
	3. Complete DX literacy training for all employees	
	4. Complete building a foundation for the utilization of human resources information	
Productivity increase	5. Generate over 300,000 hours for the entire Group	
	6. Realize a plant with double productivity (Dental)	
	7. Reduce paper documents by 50% and streamline operations	
Functionality enhancement	8. Train more than 100 DX workplace leaders	Apr. 2024
	9. Share information on 100 DX initiatives within the Group	
	10. Expand MI material development by more than 10 times	
	11. Register 20,000 new members through new marketing	
Speed-up	12. Reduce budgeting time in Tokuyama Factory by 80%	Apr. 2025
	13. Reduce time required for production planning by 50%	
	14. Reduce ESG data aggregation time by 90%	
Total	15. Increase in DX promotion index to 3.5 points (initially 0.8)	FY2025-end target

* Evaluation criteria of 5 levels are set for each project and confirmed and assessed by the supervising PMO

Value Creation Initiatives

Since the start of Medium-Term Management Plan 2025, our Group has focused on marketing and research and development to create new value from a customer-oriented perspective. In the growing business fields of electronics, healthcare and the environment, we are creating new technologies based on unique technologies, and these technologies are transitioning to the customer evaluation and business model structuring stage as developed products expected to grow in the future. Additionally, at manufacturing sites, we are making steady improvements each day to strengthen cost competitiveness, which is contributing to a stronger profit base. Here we would like to go over some examples of value creation within our Group alongside messages from key individuals advancing the plan.

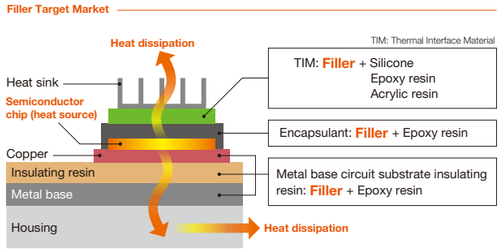
Electronic & Advanced Materials

Advanced materials with high thermal conductivity that support the evolution of semiconductors

Tokuyama's aluminum nitride (AlN) and boron nitride (BN) fillers are attracting attention as next-generation heat dissipation materials for electronic devices. As electronic devices become smaller and more densely packed, the burden on devices that control power consumption is increasing. Increased heat generation not only impairs the performance of these devices themselves, but also electronic devices they are subsequently installed in, threatening to shorten device lifespans, thereby making heat dissipation measures an urgent issue. Our AlN filler has excellent fluidity in resins, which makes it possible to add more AlN filler to resins, resulting in thermal conductivity approximately nine times higher than that of conventional heat-dissipating fillers. In addition, our BN filler has high thermal conductivity, electrical insulation, water resistance, and a low dielectric constant, making it ideal for heat dissipation substrate applications. We offer multiple BN filler products through particle designs tailored to applications, and will continue to expand our lineup of high heat dissipation fillers to meet customer needs and contribute to the development of the semiconductor and information communications industries.

Yukihiro Kanechika
General Manager,
New Business Division,
Heat Dissipation
Applications Department

We continue to advance technological innovation based on the nitride synthesis and sintering technologies we specialize in, and are developing a unique, first-of-its-kind high heat dissipation material. Our goal is to provide our customers with high-added-value heat dissipation materials that help improve the reliability and performance of cutting-edge electronic devices, and contribute to the expansion of our heat dissipation materials business.



Life Science

Bismuth enables a new era of radiation protection

Tokuyama has developed a new polymer material that contains a high concentration of bismuth (Bi) and is moving forward with its full-scale deployment in the field of radiation protection. This material maintains the same radiation protection performance as conventional products without the use of environmentally harmful lead, and combines transparency, anti-fogging properties, and processability. It was first tested during decommissioning work at the Fukushima Daiichi Nuclear Power Plant, and applications are now being expanded to the medical field. Through an industry-academia collaboration between Showa Opt. Co., Ltd. and the Tohoku University School of Medicine, lead-free radiation protection glasses "for® X-GUARD BieW" have been developed, and are scheduled to be sold by Showa Optical in July 2025. The product also complies with new regulations to protect the eye lenses of those who do work involving radiation, and has been praised for meeting needs in the medical field.

In the future, we aim to develop and expand our markets both domestically and overseas, with a view to expanding into the aviation and space fields as well as overseas markets. Tokuyama will leverage its strengths in handling everything from material development to product design and processing to create a new standard in radiation protection.

Takayoshi Kawasaki
Manager, Tsukuba
Research Laboratory and
New Business Division

This has been, at least technically, like constantly walking a tight rope, but we are finally seeing the light at the end of the tunnel. Through the combined efforts of our team, related organizations, and partner companies, we will further commercialize this bismuth material so that it can become a leading example of business portfolio transformation, both as a material, as a field, and as a business model. And while opened markets will remain at our core, we will not be overly fixated on them, but will continue to take on new challenges, catching up with the technologies and needs we come across in the process to achieve greater breadth and depth.

Radiation protection glasses (prototype)
* Provided by Showa Optical

Eco Business

Commercializing technology for recycling used PV panels

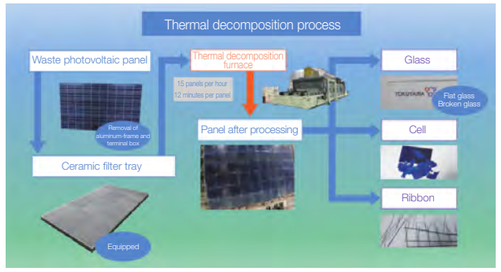
In 2019, Tokuyama began jointly developing technology for recycling used photovoltaic (PV) panels with the New Energy and Industrial Technology Development Organization (NEDO), a national research and development agency, and built a demonstration test facility in the town of Nanporo in the Sorachi District, Hokkaido. Our strength lies in technologies for the high-quality recovery of valuable resources, such as the plate glass that accounts for 60% of the weight of PV panels, and we have established a low-temperature thermal decomposition that can automatically process up to approximately 100,000 PV panels per year. As for PV panel silicon cells, which are considered difficult PV panel components to recycle horizontally*, we are utilizing our knowledge as a polycrystalline silicon manufacturer to explore ways to use them as raw materials for semiconductor-grade polycrystalline silicon.

In 2024, AGC Inc. successfully conducted the first demonstration experiment in Japan using Tokuyama's recycled plate glass as a raw material for float glass. Currently, in preparation for an era of mass waste disposal that is expected to reach 400,000 to 500,000 tonnes per year by the late 2030s, we are accelerating our commercialization efforts, including talks for establishing a Hokkaido-based collaborative scheme with Suzuki Corporation, a recycling company in Hokkaido. In FY2025, we plan to apply for an industrial waste disposal business license in Hokkaido, with the aim of establishing a new business model that will realize a circular economy that reduces environmental impacts.

* Horizontal recycling: A recycling method that reuses materials for the same purpose

Zenichiro Shimomura
Manager, Eco Business
Division, Eco Business
Planning Department

We are attempting to achieve 100% recycling of PV panels using advanced recycling technology based on low-temperature thermal decomposition, something that was previously considered impossible. To develop this unique technology into a business, we are currently working to create a business scheme in cooperation with other companies to build a resource circulation network that covers everything from the collection and transportation of used panels to recycling.



Process flow of low-temperature thermal decomposition

TOPICS "Plant Operation of the Year" award recognizing value created at manufacturing sites

Our Group has 28 production bases in Japan and eight overseas, and plant operators at each facility support stable production activities on a daily basis. In FY2017, we established the "Plant Operation of the Year" award to recognize outstanding achievements at our domestic and overseas manufacturing sites. The goal of this award is to boost manufacturing site morale and encourage Company-wide sharing and implementation of excellent initiatives.

At a FY2024 Company-wide conference, operators from seven workplaces who had passed the representative selection process in each block participated, presenting improvement activities in their own workplaces and competing with each other in terms of originality and results. A variety of improvements were reported from the unique perspectives of operators directly involved in manufacturing, including reductions in manufacturing costs through the automation of operational control and reviews of manufacturing flows, achievements in reducing the use of utilities such as water and electricity, and optimization of operating equipment to reduce CO_2 emissions. The winning workplace reduced manufacturing costs by several tens of millions of yen per year, which is improving Group profitability. Going forward, we will continue to promote improvement activities at our manufacturing sites by turning value created there into a strength for our Group, and maintaining efficient production activities.

FY2024 Plant Operation of the Year All-Company Conference Awards Ceremony

Message from the CFO

We will propel business portfolio transformation through strategic cash allocation

Tomohiro Inoue
Director,
Managing Executive Officer,
General Manager, Corporate Planning Division

What is the key to fulfilling CFO responsibilities?

I joined Tokuyama as a researcher in 1989, and had the opportunity to work in the United States while seconded to a Group company involved in the gas sensor business. Following my return to Tokuyama in 2012, and after serving as General Manager of the Business Promotion Project Department, General Manager of the Cement Manufacturing Department, and General Manager of the Eco Business Division, I took up my current position in April of 2024. I currently oversee efforts in a wide range of fields, such as business planning including accounting and finance, sustainability, carbon neutrality strategies, and new business.

In fulfilling my responsibilities as Chief Financial Officer (CFO), it is important to listen sincerely to the opinions of the many people involved in Tokuyama's business, and appropriately allocate assets to various areas, including R&D for the development of new business, in order to financially support the Group's sustainable growth. As financial indicators, we emphasize return on invested capital (ROIC) and weighted average cost of capital (WACC). We operate our business at the trust of our shareholders, so our fundamental responsibility is to ensure that ROIC exceeds WACC or, in other words, to generate profits that exceed the expectations of our investors.

Going forward, I would like to enhance Tokuyama Group corporate value by leveraging the experience and knowledge we have cultivated in a wide array of fields, including research and development, the environment, cement, and corporate planning.

Status of progress on Medium-Term Management Plan 2025 and management taking the cost of capital and the stock price into account

In April of 2024, Tokuyama announced our approach on how to realize management that is conscious of the cost of capital and the stock price. In Medium-Term Management Plan 2025, we set ROE as a management indicator and are working to improve the efficiency of shareholder capital. We will further accelerate this effort and quickly achieve a management structure that will enable us to exceed a PBR of 1. We have established four specific initiatives for achieving our goals: (1) Enhancing shareholder returns, (2) Making priority investments in growth businesses that actively utilize returns on invested capital (ROIC) and revisions to existing businesses, (3) Reducing cross-shareholdings, and (4) Shareholder dialogue.

In April of 2025, we published an update to the status of our response efforts, but in looking back at our efforts over the past year or so, we can see that although our business performance was solid, our PBR remains at the same level as before, around 0.8. This indicates that the market has yet to recognize the Tokuyama Group's efforts, especially our medium- and long-term growth strategies and our progress on them. We will need to take this reality seriously, and continue to optimize our capital policy.

Meanwhile, Medium-Term Management Plan 2025, which began in FY2021, has entered its final stage. Although our current performance forecast for FY2025 does not reach our planned targets for the final fiscal year due to changes in the external environment since the plan was first formulated, such as rising raw material and fuel prices and a sluggish semiconductor market, we do expect sales and operating profit to reach record highs.

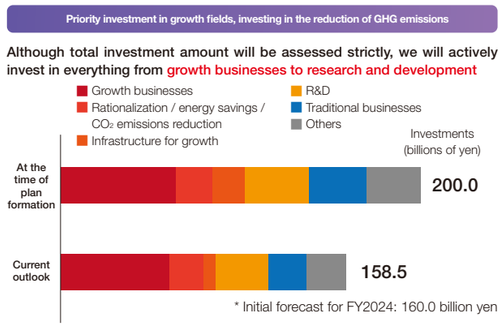
We recognize that we are still only partway through the three key issues identified in our current medium-term management plan: Transform the business portfolio, Helping to fight global warming, and Practice socially responsible management. In particular, with respect to the transformation of our business portfolio, our most important management imperative, our traditional businesses of chemical products and cement continued to perform well, so the proportion of consolidated sales from growth business for FY2024 is expected to remain at approximately 43% (excluding Others Segment). To reach our target of 50%, we need to focus all our efforts on further expanding the foundations of our growth businesses and creating new technologies and businesses through cutting-edge R&D.

Medium- and long-term management and financial strategies, and the mission of the CFO

As for medium- and long-term financial strategies, which include the next medium-term management plan, we understand that a critical issue, as with the previous plans, is to optimize fund procurement and cash allocation while maintaining sound financial discipline. Tokuyama is by no means a huge corporate group, and we cannot limitlessly expand the use of our funds. Our policy is to remain financially sound and safe as we prioritize allocation of funds to areas that are directly linked to increasing Tokuyama's corporate value, such as the three growth businesses of electronics, healthcare, and the environment, as well as efforts to address digital transformation and GHG emissions reduction. With respect to growth businesses in particular, we will increase our presence in the market by focusing investments on segments in which the Group has strengths, such as in vitro diagnostic reagents in the healthcare field and semiconductor-related materials in the electronics field.

There is no such thing as an "optimal solution" in business planning or financial strategy. The determination of whether today's management decisions were correct will be left to the market's evaluation 20 to 30 years from now. Given this, what management needs to do right now is choose the path that is most appropriate in an ever-changing business environment and with limited management resources; in other words, we need to maintain a broad perspective and continue making good decisions. I believe that the role of the CFO is to make the decisions they deem best at any given moment while identifying risks and managing them appropriately.

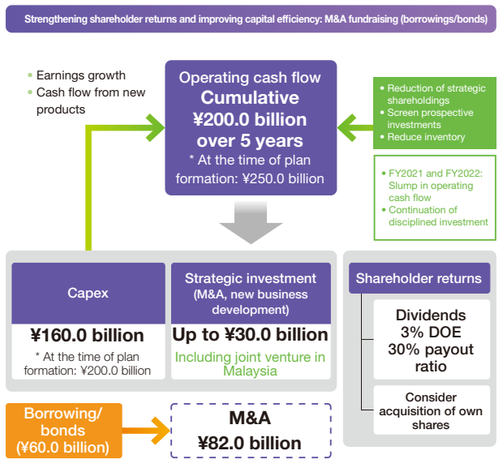
Capex Plan Breakdown (FY2021–FY2025)



Major Capex Results

- Construction of the factory of joint venture company in Taiwan for high-purity IPA (FTAC)
- Construction of the factory of joint venture company in Korea for high-purity IPA (STAC)
- Production capacity expansion of dental materials
- Construction of a new plant in Muroran City, Hokkaido in the waste gypsum board recycling business
- Establishment of the Center for Commercialization of Advanced Technology
- Investment related to biomass co-fired generation in power plants

Cash Flow Generation and Allocation



A message for our stakeholders

We will further deepen our dialogue with all of our stakeholders, including our customers, shareholders, investors, and members of local communities. We will promptly and accurately communicate Tokuyama's Vision and strategies, as well as the progress of various measures, through various media, and will incorporate feedback from stakeholders into our management and business operations.

We will also assertively work toward improving the return of profits to our shareholders. Starting in FY2024, we implemented the dividend on equity (DOE) approach to shareholder returns, and set targets of at least a 3% DOE and 30% payout ratio. We will gain higher market and social valuation by helping our shareholders, investors, and other stakeholders understand our growth and equity stories.

The business environment surrounding our Group has become more uncertain in recent years, due to factors such as rising raw material and supply prices and unclear US trade policies. While future market trends are unpredictable, we will leverage our outstanding technological development capabilities, customer service capabilities, and earnest corporate culture to further accelerate our efforts to increase corporate value and open up new possibilities for the chemical industry. The new medium-term management plan, set to start in April of 2026, will further accelerate our business portfolio transformation and enable us to reap the results of the current medium-term management plan. As CFO, I will support the Group's continued development into the future, sustainable expansion, and making us a superior company that enjoys community trust.

Progress of Medium-Term Management Plan 2025

Initiatives for addressing priority issues

Transform Business Portfolio

Increase growth businesses' share of consolidated net sales to over 50%

FY2021-25 Plans

- Redefine/reorganize growth businesses around the three themes of electronics, healthcare, and the environment, and proceed to move ahead with expanding them; progressing and growing with strength
- Chemicals and cement businesses to promote increased efficiency while generating sustainable cash flows

Priorities and Initiatives

Technology	Pursue added value and promote technological differentiation by collaborating more with external partners
Efficiency Gains	Pursue Company-wide operational efficiency, mainly through DX
Global Expansion	Expand operations in growing overseas markets

Progress in FY2024

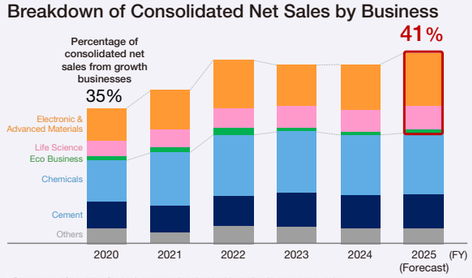
Although the semiconductor market has been sluggish since FY2022, it is showing signs of recovery centered around cutting-edge fields, driven by demand for generative AI. Thanks to these factors, we managed to increase sales and profits in FY2024 in Electronics & Advanced Materials. As for the Life Science segment, we completed a new production facility amid growing demand for dental filling composite resin produced by Tokuyama Dental Corporation, particularly in Europe and the United States. By implementing robots and automated systems, we will work to expand supply while keeping personnel increases to a minimum. As described above, this year has been marked by steady progress toward transforming our business portfolio.

Global Expansion

To strengthen the supply system for semiconductor-related products, we established a subsidiary that will manufacture and sell semiconductor-grade polycrystalline silicon in Vietnam in August of 2024, and are working to establish a company in Malaysia that will jointly produce semiconductor-grade polycrystalline silicon with the South Korean OCI Group.

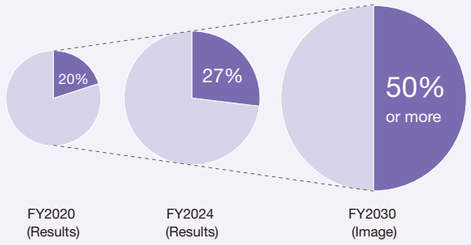
We also decided to establish a subsidiary to sell Group products in the growing market of India. By establishing this company, we will further enhance local marketing for growth businesses in the areas of electronics, healthcare, and the environment, work to foster growth in the Indian economy, and accelerate our international expansion.

Breakdown of Consolidated Net Sales by Business



* Percentage of net sales for each segment is calculated including inter-segment sales
* FY2020 was created using reference values that include the financial impact of the current Accounting Standard for Revenue Recognition, etc.

Overseas Share of Consolidated Net Sales



	Efforts in FY2024	Details
Technology	• Relocating and expanding Tokuyama Taiwan to strengthen cooperation with external parties in Electronic and Advanced Materials	p. 19
	• Launching radiation protection materials using bismuth (for medical goggles) • Accelerated efforts to realize business that utilizes low-temperature thermal decomposition recycling technology for PV panels	p. 24-25
Efficiency Gains	• Advanced automation at the new building of the Tokuyama Dental Kashima Factory • Built a remote maintenance infrastructure that utilizes A&T's cloud environment • Developed the "Tokuyama AutoML" data analysis tool that contributes to expanding the use of AI	p. 17, p. 23
Global Expansion	• Established TOKUYAMA VIETNAM CO., LTD., a Vietnamese subsidiary that manufactures and sells semiconductor-grade polycrystalline silicon • Decided to establish a subsidiary to sell Group products in India	p. 28

Helping to Fight Global Warming

Expedite the development/commercialization of next-generation energy technologies
Reduce greenhouse gas (GHG) emissions in FY2030 (Scope 1 and 2) by 30%*

* Base year: FY2019 GHG emissions of approximately 7.26 million tonnes CO_2e

p. 38-39 Message from the Executive Officer in Charge of Sustainability | p. 44-46 Action on Climate Change

In FY2024, we conducted a study on the commercial viability of constructing a pilot plant for semi-carbonized black pellets made from biomass and modifying facilities for biomass co-firing, starting to consider fuel conversion in cullet production, developing a low-carbon process for soda ash production, developing an environmentally friendly sidewalk paving material called "biochar interlocking blocks" (in collaboration with Fujita Corporation) that produces virtually zero GHG emissions from materials such as cement, and co-firing ammonia as fuel.

GHG emissions (Scope 1 and 2) were reduced by 19% compared with FY2019 levels through biomass co-fire generation and aggressive energy conservation activities. We also achieved 6% reductions in Categories 1, 3 and 4 of Scope 3 in comparison with FY2022.

Main Reduction Targets	Initiative Policy	Efforts in FY2024
In-house power generation facilities	Reduce GHG emissions from in-house power generation by 50% in FY2030*	Biomass co-firing Construction of a black pellet pilot plant Studying the feasibility of an ammonia co-firing business
Cement and chemicals, etc.	Reduce limestone use and coal use and improve processes	Using waste and by-products Starting to consider fuel conversion in cullet production Developing low-carbon processes for soda ash production
Carbon offsets	Consider implementing CCS technology and offsets	Development of carbon negative concrete Development of biochar interlocking blocks

* Base year: FY2019

Practice Socially Responsible Management

To realize our Vision, we are strengthening initiatives addressing material issues that form the foundation for sustainable growth.

p. 8-13 Message from the President | p. 40-43 Tokuyama's Materiality | p. 58-59 Risk Management

Our Group is implementing a variety of sustainability measures, including materialities, to promote CSR management. In FY2024, we made changes to our meeting bodies to strengthen sustainability governance and proactively disclosed initiatives focused on materialities. These efforts gained recognition, and our Group has been selected for the first time as a constituent stock of the ESG investment index "FTSE Blossom Japan Index" and has also been selected yet again as a constituent stock of the "FTSE Blossom Japan Sector Relative Index." Furthermore, we have been selected for the first time as a Supplier Engagement Leader, the highest rating in the 2024 Engagement Rating conducted by the CDP.

Progress toward achieving targets

Due to significant changes in assumptions such as raw material and fuel prices from when we first formulated the plan, not to mention the impact of the sluggish semiconductor market beginning in the second half of FY2022, we have made only lackluster progress on each indicator since FY2022.

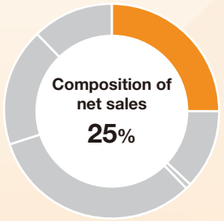
Our business outlook for FY2025 has us achieving record high net sales and operating profit, despite falling short of our targets for the final fiscal year, because the semiconductor market is showing signs of recovery, particularly in cutting-edge fields, and our Life Science Business is growing, driven by factors such as increased production capacity for dental materials and equipment.

KPI	FY2021 results	FY2022 results	FY2023 results	FY2024 results	FY2025 forecast	FY2025 targets[1, 2]
Net sales (billions of yen)	293.8	351.7	341.9	343.0	364.5	**400.0**
Operating profit (billions of yen)	24.5	14.3	25.6	29.9	41.5	**45.0**
Growth business net sales compound annual growth rate (CAGR) (%)	19.9	20.1	10.5[3]	9.6[3]	10.0[3]	**10.0 or higher**
ROE (%)	13.2	4.1	7.4	9.2	10.9	**11.0 or higher**

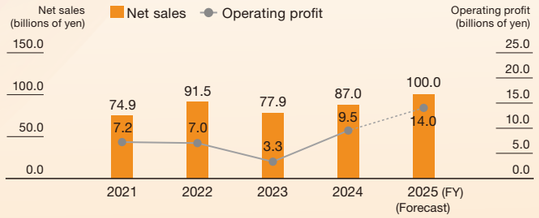
1. Due a change in the depreciation method, targets for FY2025 were updated for operating profit, from ¥40.0 billion to ¥45.0 billion, and for ROE, from 10% to 11% (announced April 28, 2023).
2. In consideration of business performance trends and the business environment, we have changed our net sales target for FY2025 from ¥320.0 billion to ¥400.0 billion (announced on April 26, 2024).
3. In consideration of business restructuring in Medium-Term Management Plan 2025, the results for FY2023 and FY2024, as well as the forecast for FY2025, have been revised from the previously announced figures.

Progress of Medium-Term Management Plan 2025 by Business Segment

Electronic & Advanced Materials



Performance Trend



Progress of Strategy by Product Area

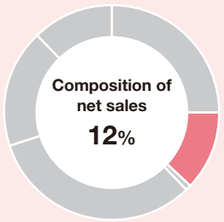
Product Area	FY2024 Results	Future Plans and Investments
Silicon	• Established a subsidiary in Vietnam for the semiconductor-grade polycrystalline silicon business • Developed a system for supply of high-purity chlorosilane in China	• Establishment of second location for semiconductor-grade polycrystalline silicon • Global expansion of high-purity chlorosilane at two locations in Japan and China
IC chemicals	• Developed a stable system for supply in global bases	• Start of supply of high-purity IPA for the electronics industry by the South Korea JV • Expansion of global bases • Accelerate efforts to realize recycling IPA
Silica	• Developed a system for supply of hydrophobic silica	• Expansion of CASE* and personal care applications • Expansion of sales of hydrophobic silica • Entry into the field of organic silicone
Thermal management materials	• Expanded lineup of aluminum nitride/boron nitride fillers	• Launch of silicon nitride • Application development and expansion into downstream fields • Consideration of capacity expansion to meet growing demand

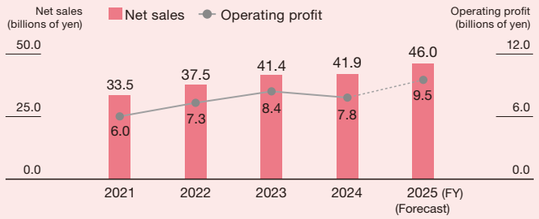
* Coating, adhesive, sealant, elastomer


High-purity polycrystalline silicon

High-purity IPA

Life Science



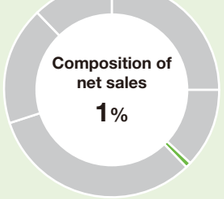


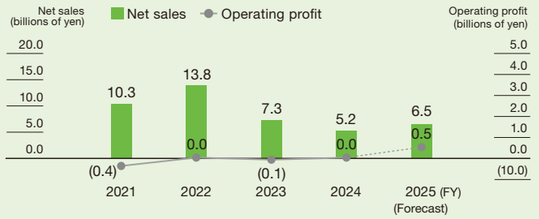
Product Area	FY2024 Results	Future Plans and Investments
Fine chemicals	• Sales performed well due to recognition of the quality of generic APIs • Continued to expand global market share due to high photochromic materials performance for eyeglass lenses	• Developed rare APIs and strengthened competitiveness • Improved added value and obtained overseas market share through the introduction of next-generation photochromic materials
Dental materials and equipment	• Tokuyama Dental completed construction of a new production facility • Global deployment of composite resins, and increased sales for Europe, the United States, and emerging markets • Expand the domestic market by strengthening sales of resin blocks for dental crowns	• Strengthen sales structure and accelerate supply systems to further increase market share • Accelerate material development to expand the digital dental field
Medical diagnosis systems	• Consider M&A to strengthen the in vitro diagnostics business and accelerate business portfolio transformation • Start construction of a production building to meet increased demand in the electrolyte business	• Accelerate development and maximize synergies through M&As in the in vitro diagnostic pharmaceuticals and materials businesses • Expanded production capacity to increase sales of medical diagnostic systems in Japan and expand electrolyte business


Photochromic materials for eyeglass lenses

Dental materials and equipment

Eco Business



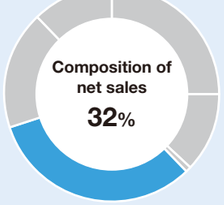


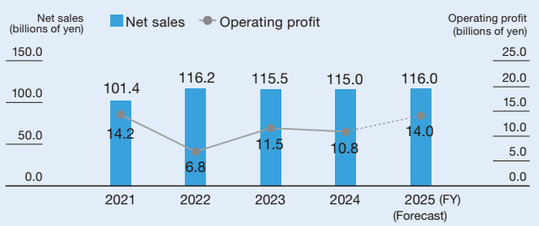
Product Area	FY2024 Results	Future Plans and Investments
Environment	• Waste gypsum board recycling: Start full-scale operations at the third domestic site in Muroran City, Hokkaido • PV panel recycling: Complete joint research with NEDO; start preparations to apply for an industrial waste treatment license	• Waste gypsum board recycling: Secure stable operations and revenue at three domestic plants • PV panel recycling: Further improve recycling quality and build a business model, and apply for an industrial waste disposal business license
Ion exchange membranes	• Respond to replacement demand from existing customers, improve productivity, and promote new membrane development	• Cultivate environmental-related demand such as for organics recovery and decarbonization • Strengthen the promotion of new membrane development


Waste gypsum board recycling


PV panel recycling

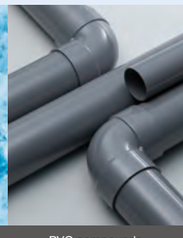
Chemicals



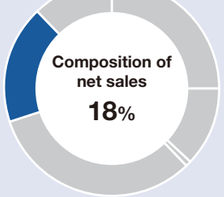


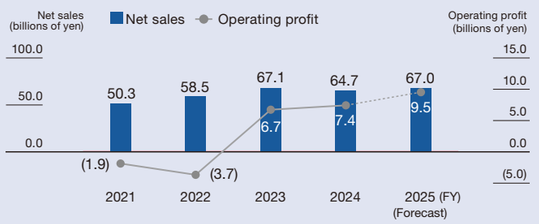
Product Area	FY2024 Results	Future Plans and Investments
Soda ash and calcium chloride	• Demonstrate soda ash process model for reducing CO_2 emissions • Decide on investment in cullet fuel conversion	• Maintenance and renewal of equipment necessary for stable business continuity • Energy saving and rationalization in response to environmental issues
Chlor alkali and vinyl chloride	• Transfer of sale of chloro-alkali products to Tokuyama Soda Trading • Developed manufacturing technology package for paste PVC resin	


Sodium hydroxide (image)


PVC compounds

Cement





Product Area	FY2024 Results	Future Plans and Investments
Cement	• Maintained appropriate sales prices • Reduced electricity consumption rate by introducing advanced automatic control of finishing mills • Suspended one kiln line	• Maintained appropriate sales prices • Established optimal production system using two kiln lines • Maintenance and renewal of the equipment required for stable business continuity • R&D and introduction of technology aimed at environmental issues and carbon neutrality • Expansion of waste treatment that contributes to a closed-loop society
Recycling	• Enhanced collection of waste plastic • Utilized liquid fuel from waste and by-products	

Cement


Recycling

Progress of Strategy by Business Segment

Electronic & Advanced Materials

Growth businesses

Business Goal

Push forward with globalization, and capture the top market share in the high-purity and thermal management materials fields supporting the miniaturization and stacking of semiconductors

Risks and Opportunities

Risks

- Entry of overseas suppliers
- Impacts on the supply chain caused by geopolitical risks

Opportunities

- Increased demand related to cutting-edge IT infrastructure driven by generative AI and big data
- Growth in semiconductors due to increased functionality of electronic devices, larger memory capacity, and electrification of vehicles
- Increased level of quality requirements from users associated with advancements in miniaturization and stacking

Strengths

- Superior quality in semiconductor-related products
- Differentiation through such proprietary technologies as reductive nitridation method (thermal management materials) and direct hydration (IPA)
- Capture high market share in aluminum nitride powder in thermal management materials

Priority Measures

- Aggressive expansion into overseas markets
- Expansion of new applications and product lineup
- Pursuing high-grade product production and analysis technologies

Message from the Executive Officer in Charge

Accelerating global expansion and expanding the product lineup to improve market presence

Katsumi Nagase
Managing Executive Officer, General Manager, Electronic & Advanced Materials Business Headquarter and Advanced Materials Business Division

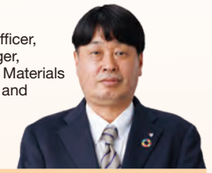
Although market sentiment differs significantly between advanced and general-purpose semiconductors in FY2024, for silica, shipment volume for CMP (semiconductor-grade polishing slurry) has begun to increase after bottoming out in FY2023. Volumes for silicone and other materials recovered somewhat compared with FY2023, but only slightly due to the impact of the stagnant Chinese economy. To expand applications, which has been identified as a priority measure in Medium-Term Management Plan 2025, Tokuyama Chemicals (Zhejiang) Co., Ltd. is building a system to increase production of hydrophobic surface-treated silica to meet market needs for adhesives for wind turbine blades and paint inks, both of which are areas that are expected to see continued growth, and is working to grow sales, including the expansion of sales to new customers. To expand sales areas, we are working to expand sales of spherical silica for cosmetics through exhibitions in each region, and have begun sales in South America following Europe and North America. In terms of heat management materials, demand for aluminum nitride powder for semiconductor manufacturing equipment components has been showing signs of recovery, and demand for power semiconductor substrates and LEDs is also increasing, leading to increased sales volumes domestically and overseas as well.

Going forward, cutting-edge semiconductors for the manufacture of high performance computing (HPC) devices and high bandwidth memory (HBM), which support the expansion of AI data centers and other cutting-edge IT infrastructure, will continue to become more miniaturized and multi-layered, so the quality requirements for the semiconductor materials used will also become increasingly higher. In addition, although demand for power semiconductors for automotive applications is experiencing a temporary stagnation, growth is expected in the future. Demand is also expected to increase steadily in areas such as high-voltage machinery, green energy such as solar and wind power generation, power transmission, and electric railways. Although we expect FY2025 to be a turbulent year globally, we intend to seize on growth and change in these markets as opportunities to expand our business. With respect to silica, we expect sales for CMP and other applications to increase, and we will also begin sales for use as an insulation material in EV battery modules as part of our efforts to expand applications. In terms of heat management materials, we intend to further expand sales of aluminum nitride powder for semiconductor manufacturing equipment, and aluminum nitride bare substrate for power semiconductors manufactured and sold by TD Power Materials Co., Ltd. Furthermore, by aligning our strengths in powder control technology (particle control and surface treatment) and ceramic sintering technology with customer needs in cutting-edge fields, we will further refine our aluminum nitride powder quality to levels that no other company can match. We will also accelerate development of mass production technologies for aluminum nitride and boron nitride fillers, as well as silicon nitride, while also improving our supply system, and expanding our heat management materials business to meet diversifying heat management needs.

Message from the Executive Officer in Charge

Consistently maintained efforts to improve quality while contributing to the expansion of the semiconductor business. Making Tokuyama the customer's first choice

Seiji Teranishi
Managing Executive Officer, Deputy General Manager, Electronic & Advanced Materials Business Headquarter and General Manager, Electronic Materials Business Division



In FY2024, the Electronic Materials Division recorded an increase in revenues and profits over FY2023. Regarding the silicon business, as the inventory adjustment phase continued from the second half of FY2022, silicon wafers shipments also showed negative growth of -2.7% year-on-year. However, shipments of polycrystalline silicon for semiconductors increased significantly by approximately 20% compared with FY2023, driving performance of the Electronic Materials Division forward. Meanwhile, in the IC chemicals business, Formosa Tokuyama Advanced Chemicals Co., Ltd. (FTAC), a new production and sales base for high-purity IPA in Taiwan, achieved a full-year profit, contributing to improved earnings. Additionally, STAC in South Korea has already shipped samples for customer qualification to a major customer and is proceeding with plans to begin mass production and sales in FY2025. Summarizing the results for FY2024, our business plan appears to be progressing smoothly. However, the semiconductor market is facing an unprecedented number of uncertainties, including end customers postponing investments due to the sluggish market, supply chain disruptions triggered by the state of US-China relations, US tariff issues, as well as the rise of Chinese manufacturers, creating a very challenging and competitive environment for the final fiscal year of Medium-Term Management Plan 2025.

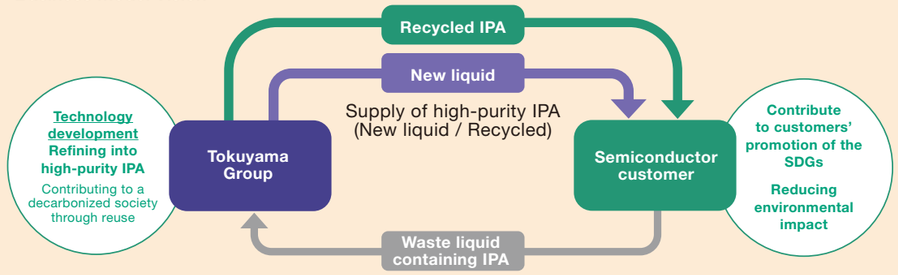
For the Electronic Materials Division to become a driving force behind Tokuyama's performance, we must not only steadily meet customer demands, but also thoroughly coordinate with customers, especially on cutting-edge products, to solve problems together and improve quality at both companies, thereby becoming the first-choice manufacturer of our customers. With respect to the silicon business, as the quality requirements for polycrystalline silicon have become increasingly higher in recent years, we are working with our customers to improve quality. In addition to further improving semiconductor-grade polycrystalline silicon, we are also working to enhance the analytical capabilities required to ensure this quality, thus contributing to improved quality for the silicon wafers produced by our customers. In the IC chemicals business, the world's most advanced 2 nm factory has already begun operating in Taiwan, the region with the greatest demand for high-purity IPA, where FTAC's products are being used. However, there is now a need to establish a system for quality control and stable supply in anticipation of next-generation 1.4 nm technology. Furthermore, since cutting-edge products use large quantities of high-purity IPA, there is also a growing demand for recycling in order to maintain sustainability. By reliably responding to these demands, we intend to keep up with our customers' growth strategies and further expand our IC chemicals business.

TOPICS High-purity IPA environmental initiatives

In the IC chemicals business, we have established our own unique recycling technology and are working to achieve process return by re-purifying IPA-containing waste liquid discharged from our customers' semiconductor factories into high-purity IPA.

We are building a recycling plant at FTAC (Taiwan) that is scheduled to begin full-scale supply in FY2027 after it undergoes quality evaluations and is certified. We will help reduce our customers' environmental impact by proposing optimal business models for each market.

Business Model Vision



Progress of Strategy by Business Segment

Life Science Growth businesses

Business Goal

Use unique technology to capture top niche market share in areas where differentiation is possible: vision, dental, and diagnostics

Risks and Opportunities

Risks

- Rise of emerging manufacturers mainly in Asia
- Destabilization of supply chain including raw material procurement, overseas outsourcing of production, and product exporting due to geopolitical risks

Opportunities

- Growth of healthcare due to advent of super aging society and increasing need for preventative care
- Expansion of emerging markets in the Middle East, Asia, and South America
- Developments in the digital dentistry field
- Promotion of DX in the medical field in line with work style reforms at healthcare facilities

Strengths

- Highly unique product and technology development capabilities based on chemical technology
- Close collaboration between sales, manufacturing and development to enable a rapid and detailed response to user requests

Priority Measures

- Conducting M&As and accelerating the transformation of the business portfolio to expand in vitro diagnostic pharmaceuticals and materials businesses
- Strengthen sales structure and accelerate production capacity to further increase share of the overseas dental materials and equipment market
- Strengthen new product development and increase added value to further expand the photochromic market overseas
- Develop rare pharmaceutical ingredients and business for non-pharmaceutical applications based on organic synthesis technology

Message from the Executive Officer in Charge

Strongly promoting business portfolio transformation through expansion of existing businesses and acquisition of in vitro diagnostics business

Fumiaki Iwasaki
Representative Director, Senior Managing Executive Officer, General Manager, Research & Development Division and Life Science Business Division

This is the final fiscal year of Medium-Term Management Plan 2025. Although there is variation in performance between products, the Life Science Business Division as a whole is progressing largely according to plan.

However, as a division responsible for the healthcare business, which is expected to be a growth sector, we need to rapidly transform our structure in order to achieve further growth. First, to expand our diagnostic business, we acquired the in vitro diagnostic pharmaceuticals business and the in vitro diagnostic pharmaceutical materials business of JSR Corporation, and defined the in vitro diagnostic reagents business as the core of growth businesses in the healthcare sector in our next medium-term management plan. Tokuyama has traditionally focused on active pharmaceutical ingredients and intermediates in the healthcare sector, but due to the slowdown in growth of the low-molecular-weight generic drug market, we have set our sights on diagnostic reagents as a new business area and have begun developing new diagnostic reagents. By inviting the target businesses into our Group so that they may complement our ability to commercialize immune reagents using particles and antibodies, we expect to significantly shorten development times and achieve synergies with our core technologies. Additionally, the Company will collaborate with Tokuyama Dental Corporation to develop diagnostic reagents for dental care and introduce new products into A&T Corporation's distribution channels. We believe that this will allow our Group to quickly build a highly profitable diagnostic reagent business.

At the same time, we will not neglect our API and intermediate businesses, and will seek new sources of revenue by expanding into highly potent APIs, while also developing our intermediate business for non-pharmaceutical applications based on the organic synthesis technology we have cultivated thus far.

In the plastic lens-related materials business, we will maintain high profit margins by developing products on schedule and in line with the technical roadmap and by providing high-end products to each user. In the microporous film business, in FY2024 we decided to discontinue Shanghai Tokuyama Plastics Co., Ltd., which had been a pending issue. From FY2025, we will focus on the domestic business and aim to improve the profit margins of each product by implementing cost reductions.

In A&T's diagnostics business, we will work to increase the profitability and productivity of our clinical laboratory information system and specimen testing automation system businesses, while also building a foothold for overseas expansion by ensuring the successful expansion of our electrolyte business into China.

As for the dental materials and equipment market, we will solidify our business foundation in Europe by acquiring European Medical Device Regulation (MDR) certification in FY2025, and by expanding and improving our product lineup, we will enhance our marketing and sales capabilities in overseas markets to further expand our business.

Progress of Strategy by Business Segment

Eco Business Growth businesses

Business Goal

Serve as a new business pillar for the future

Risks and Opportunities

Risks

- Rise of emerging manufacturers centered in Asia, against the backdrop of environmental regulations
- Rampant competition as end-of-life PV panels become a social issue

Opportunities

- Increased wastewater treatment demand due to tougher environmental regulations in China and emerging countries
- Growing global environmental consciousness
- Global awareness for creating a recycling-oriented society

Strengths

- Continuous large crystallization technology for gypsum (for 100% recycling of waste gypsum boards)
- Ion exchange membrane water treatment
- Unique technologies, such as PV panel recycling using low-temperature thermal decomposition treatment

Priority Measures

- Respond to expanded demand for water treatment membranes due to strengthened environmental regulations
- Expansion of recycling business for waste gypsum boards and PV panels, etc.
- Commercialization of next-generation energy technologies that have been developed

Message from the Executive Officer in Charge

Promoted commercialization by leveraging unique technology; enhancing profitability and realizing a sustainable society

Naoki Tamura
Executive Officer, General Manager, Eco Business Division

In FY2024, the Eco Business Division showed a certain degree of progress in technological development toward commercialization, and we are seeing the establishment of a system that will lead to future sales and revenue. Going forward, in addition to PV panel recycling technology, we will continue to develop, and work to commercialize, superior waste processing technology.

As for PV panel recycling, we have completed joint research with the New Energy and Industrial Technology Development Organization (NEDO) at a recycling commercialization experimental facility in Nanporo Town, Hokkaido. In the future, we will begin full-scale operations in this area after applying for an industrial waste disposal license. At this facility, recycled glass plates can be reused as high-quality plate glass material, and other components can be processed and extracted at high quality levels, realizing a recycling system which prevents anything from becoming waste. We will also continue to develop technology to improve equipment and reduce costs, and expand our business with an eye toward overseas expansion.

Tokuyama Chiyoda Gypsum Co., Ltd., which operates a waste gypsum board recycling business, has maintained stable operations at its Yokkaichi and Kanto plants. Current challenges for the Muroran Plant, which began operating in FY2023, are increasing collection volumes and improving profits. We will work to secure stable operations and profits at the three plants by, among other efforts, optimizing treatment processes, and adjusting prices. It is becoming increasingly difficult to secure gypsum, which is produced as a by-product of domestic metal refining and coal-fired power generation, and as such we expect that our recycling technology will become increasingly necessary. The Company's large crystallization technology enables us to produce recycled gypsum of the same quality as regular raw gypsum, which means that it can be effectively used as raw material not just for gypsum boards, but also in all industries that require gypsum, including cement.

ASTOM Corporation achieved major improvements in both revenue and profit with continued demand from the use of specialized membranes with distinctive characteristics to recover lithium (Li) as a valuable resource. There was also firm demand for ion exchange membranes used in the production of salt, foods, and potable water. In addition to extremely strong demand from both Japan and overseas, demand for technological improvements is likely to continue to remain strong. We will further promote development, and will establish and strengthen our supply system in order to respond to robust demand as much as possible.

The semiconductor industry generates a large amount of waste that is difficult to treat. Further, the use of biomass fuel in coal-fired power plants is being promoted as a measure to combat global warming. However, this fuel conversion then changes the properties of the incineration ash produced, making it difficult to apply to the recycling systems currently in use, particularly in the cement industry. We are working to develop treatment technologies for this difficult-to-treat waste, and are aiming to establish new and unique recycling technologies.

Progress of Strategy by Business Segment

Chemicals Traditional businesses

Business Goal: Ensure stable earnings in the existing business

Risks and Opportunities

Risks
- Decreasing domestic demand due to macroeconomic changes
- Excessive supply due to expansion of caustic soda and PVC facilities, particularly in Asia
- Impacts on the supply chain caused by geopolitical risks

Opportunities
- Promotion of a hydrogen society
- Increased demand for caustic soda due to increased demand for lithium-ion batteries and aluminum

Strengths
- Only domestic manufacturer of soda ash
- Electrolyzer, electrolysis and manufacturing technology with extensive operating record

Priority Measures
- Strengthen business and increase efficiency to maximize revenue
- Reduce CO_2 emissions and waste by improving manufacturing processes
- Improve the supply chain through the promotion of DX

Message from the Executive Officer in Charge

Fulfilling supply responsibilities and strengthening profitability by responding to changes in the business environment

Hirotaka Nishihara
Managing Executive Officer,
General Manager, Chemicals
Business Division

In FY2024, both sales and operating profit fell significantly short of planned values. This was caused by a continued slump in the overseas PVC market and sluggish domestic sales volumes for mainstay products such as soda ash, caustic soda, and PVC resin. Although the surge in raw material and fuel prices since FY2021 has subsided, the real estate slump in China continues, and the global supply and demand balance has been significantly disrupted in the PVC market in particular, thanks to oversupply, resulting in an extremely challenging business environment.

It was under these conditions that our Group absorbed Shin Dai-Ichi Vinyl Corporation via merger, newly established the Chemical Sales Control Division and the PVC Sales Department, and transferred the sale of chloro-alkali products such as caustic soda to Tokuyama Soda Trading Co., Ltd., thereby establishing a sales system that cut across the entire Group and strengthened our sales capabilities. We are grateful to everyone involved for their efforts that made this transition possible, and we intend to take even greater action in this now more compact organization.

Furthermore, with respect to carbon neutrality, the GX League will be fully operational in FY2026. Tokuyama as a whole will implement measures including fuel conversion for our in-house power generation facilities, and, in our Chemicals Business Division, we will accelerate efforts to reduce GHG emissions, by, for example, introducing a new process for soda ash that uses CO_2 as a raw material and converting fuel for cullet, the raw material for water glass.

As we enter the final fiscal year of Medium-Term Management Plan 2025, we view this as an important turning point for the Chemicals Business Division in building the foundation for passing the baton to the next generation of our fellow employees as we head into the next 100 years. Like in FY2024, the outlook for the future remains uncertain, thanks to ongoing world events such as the circumstances in Ukraine and Israel, the real estate slump in China, and the issue of US tariffs. However, not only do we intend to achieve our performance forecasts for the final fiscal year of Medium-Term Management Plan 2025, everyone at the Chemicals Business Division is committed to further improving our profits. Just as we have before, we will continue to act with the customer's perspective foremost in mind, advance DX utilization proactively in the production departments to allow all our departments to better address the needs of users in both Japan and overseas, maintain safe and stable operations, and ensure a stable supply of products to customers. Sales departments will utilize informational tools to further accelerate information gathering so that we may facilitate even faster decision-making. In keeping with one of our core values of "integrity, perseverance, a playful spirit and boldness," in addition to maintaining a proper defensive posture, we will also remain front-facing and bold in our actions as we work to acquire new users and develop new applications.

Progress of Strategy by Business Segment

Cement Traditional businesses

Business Goal: Become the domestic industry leader in energy efficiency

Risks and Opportunities

Risks
- Decreased demand in cement due to effects of increased construction costs, work style reforms, and other changes
- Increased costs stemming from realizing carbon neutrality

Opportunities
- Domestic demand due to national resilience measures (disaster prevention and mitigation), responses to aging social infrastructure, and urban redevelopment
- Demand for building infrastructure associated with economic development in emerging countries

Strengths
- Contribute to environmental preservation by accepting waste from inside and outside the Company for cement feedstock and as a thermal energy alternative
- Enabling technological development from a chemical standpoint based on chemical manufacturing

Priority Measures
- Introduction of energy-saving facilities to reduce CO_2 emissions
- Reduction of coal consumption by increasing the acceptance of alternative heat energy sources such as waste plastic

Message from the Executive Officer in Charge

By accelerating increased energy efficiency and utilizing two-kiln cement production systems, realize a stable line of production

Takahide Taniguchi
Director, Managing
Executive Officer,
General Manager,
Cement Business Division

In FY2024, domestic demand for cement continued to decrease, resulting in decreased sales volumes for cement, solidification agents, and ready-mix concrete. For cement and solidification agents, we prioritized a sales policy that was commensurate with profitability, and we continued to make price adjustments to ready-mix concrete, but this was not enough to compensate for the decline in sales volume, resulting in a decrease in revenue. On the other hand, coal prices were on a downward trend, and as a result of our continued self-help efforts, such as increasing our use of alternative energy products and reducing costs, we were able to realize an increase in profits.

As domestic demand for cement falls due to factors such as longer construction periods and labor shortages, material prices and logistics costs are rising further. In addition, there is a growing need to address environmental issues and work toward becoming carbon neutral. It is in this environment that in FY2024 we continuously made investments to update aging manufacturing equipment and repair and strengthen infrastructure facilities in order to realize a more stable supply. In addition, we began accepting liquid fuels derived from waste and by-products, and increased our waste plastic transportation capacity. Further, as part of our carbon neutrality response, we also started participating in a consortium using the Green Innovation Fund to develop a special CO_2 fixing additive for use in carbon negative concrete. In FY2024, we constructed an experimental building with a small kiln for research and development, and also conducted manufacturing tests of special cement admixtures using an actual kiln.

The gradual decline in domestic demand for cement continued in FY2024, falling to 32.6 million tonnes, or around 40% of peak levels. To address these structural changes to the cement business, we took steps to reduce production capacity by shutting down one of our three cement kilns, curbed fixed costs, and advanced the construction of a more efficient production system. To remain competitive in this challenging environment, we prioritized improving efficiency and productivity, and in FY2024, we installed an automatic control system in one of our cement grinding finishing mills, just as we did with our cement kilns. Having confirmed that use of this automatic control system improved efficiency, we will install this system at all of our finishing mills in FY2025 and all of our raw material mills in FY2026, thereby reducing electricity consumption and establishing a more efficient production system.

We will continue to focus on increasing our use of alternative energy products in order to achieve our business goal of top-class energy efficiency. Furthermore, to realize stable production using two cement kiln lines, we will need to continue making large investments to renew and modify our manufacturing facilities, and in FY2025 we will solidify our revision of cement sales prices and strengthen our system for stable intake of waste and stable supply of cement.