

**DAICEL**



**DAICEL REPORT  
2023**

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## Editorial Policy

The Daicel Group aspires to realize its Basic Philosophy of becoming “the company making lives better by co-creating value,” and it continues to conduct its businesses with a view to both improving social sustainability and enhancing medium- to long-term corporate value. Aimed at providing our shareholders, investors, and many other stakeholders with a better understanding of the Daicel Group and a tool for communication, this report is a concise consolidation of financial and non-financial information that is highly relevant to our medium- to long-term value creation story. In editing our reports and website, we have taken care to disclose information in ways that are easy to read, easy to understand, and forthcoming.

### ■ Disclosure Structure for Financial and Non-Financial Information

#### DAICEL REPORT 2023 (Integrated Report)



Management's approach, vision for the future, strategy and initiatives are compiled and disclosed in a consistent format. In order to provide a simple account of how we create value, we will discuss sustainability and materiality by incorporating items that are deeply connected to our Long-Term Vision and Mid-Term Management Strategy.

<https://www.daicel.com/en/sustainability/library.html>



Related Web Content

#### ■ Sustainability Website

<https://www.daicel.com/en/sustainability/>

More detailed and comprehensive information about sustainability is sorted and presented under the items of Environment (E), Society (S), and Governance (G).

#### Sustainability Report

<https://www.daicel.com/en/sustainability/library.html>

Information on “Sustainability Website” as of the end of August every year is available in PDF format in the Archives.

#### ESG Data

<https://www.daicel.com/en/sustainability/library.html>

Only the detailed data regarding our sustainability initiatives is aggregated and presented.

#### Corporate Governance Report

<https://www.daicel.com/en/sustainability/governance/>

#### ■ Investor Relations Information Website

<https://www.daicel.com/en/ir/>

Contains financial information such as Financial Results and Financial Result Presentation Materials mainly for the reference of investors, shareholders and many other stakeholders.

#### Securities Report (Japanese only)

<https://www.daicel.com/ir/annualreport.html>

#### At a glance

<https://www.daicel.com/en/ir/glance.html>

Presents the overview, history and strengths of the Daicel Group in a simple format.

#### ■ Corporate Website

<https://www.daicel.com/en/>

#### Long-Term Vision

<https://www.daicel.com/en/plan/>

#### Mid-Term Management Strategy

<https://www.daicel.com/en/plan/>

#### Businesses & Products

<https://www.daicel.com/en/business/>

### ■ Entities within the Scope of Reporting

The Daicel Group consists of Daicel Corporation and 75 Group companies. The following terminologies are used in this report.

- Daicel Group/The Group: Daicel Corporation and its subsidiaries
- Daicel/The Company: Daicel Corporation
- Group companies: Subsidiaries of Daicel Corporation

The scope of the Group companies for reporting varies depending on the content of the initiatives. Refer to the following for more details.

#### Scope of Reporting for Human Resources and Governance Data

<https://www.daicel.com/en/sustainability/other/boundary.html>

#### Scope of Data Calculation for Environmental and Occupational Safety Performance

<https://www.daicel.com/en/sustainability/other/responsible.html>

### ■ Reporting Period

FY2023/3 (April 2022 to March 2023)

\* Includes some content outside the reporting period

### ■ Guidelines Used for Reference

- IFRS, “International Integrated Reporting Framework”
- Ministry of Economy, Trade and Industry (METI), “Guidance for Integrated Corporate Disclosure and Company-Investor Dialogue for Collaborative Value Creation”
- GRI, “The GRI Sustainability Reporting Standards 2016/2018/2019/2020”

### ● Basic Philosophy

# The company making lives better by co-creating value

## Sustainable Value Together



Compression process of celluloid, Daicel's founding business



Celluloid manufacturing test equipment (press machine)

In the 1900s, Japan began producing raw materials for celluloid, which was applied to a broad range of household items that improved the quality of people's lives. However, the special procurement boom caused by World War I led to a proliferation of domestic celluloid manufacturers and intense competition, resulting in a decline in quality from the mass production of inferior products and the indiscriminate felling of camphor trees.

Eight leading manufacturers concerned about the situation sought to restructure the industry by merging to form Dainippon Celluloid Co., Ltd., the predecessor of today's Daicel Corporation. This merger made it possible to manage raw material resources, stabilize production and quality, and nurture processing companies in the downstream industry, thereby laying the foundation for a manufacturer boasting the top share of global celluloid shipments. Furthermore, research for fireproofing celluloid, which was conducted alongside the merger, laid the foundation for developing a chemical industry in Japan that generates diverse materials.

While Daicel's business and organization have significantly changed since its founding a hundred years ago, the spirit of applying the power of chemistry to improve daily life has remained unchanged.

Just as the eight celluloid manufacturers joined hands to enrich society, the Daicel Group will work with customers and partners to develop a sustainable society. Moreover, we will continue to change the future for the better through the power of chemistry by remaining true to our aspirations as a company that make lives better by co-creating value.

## ● Sustainable Management Policy

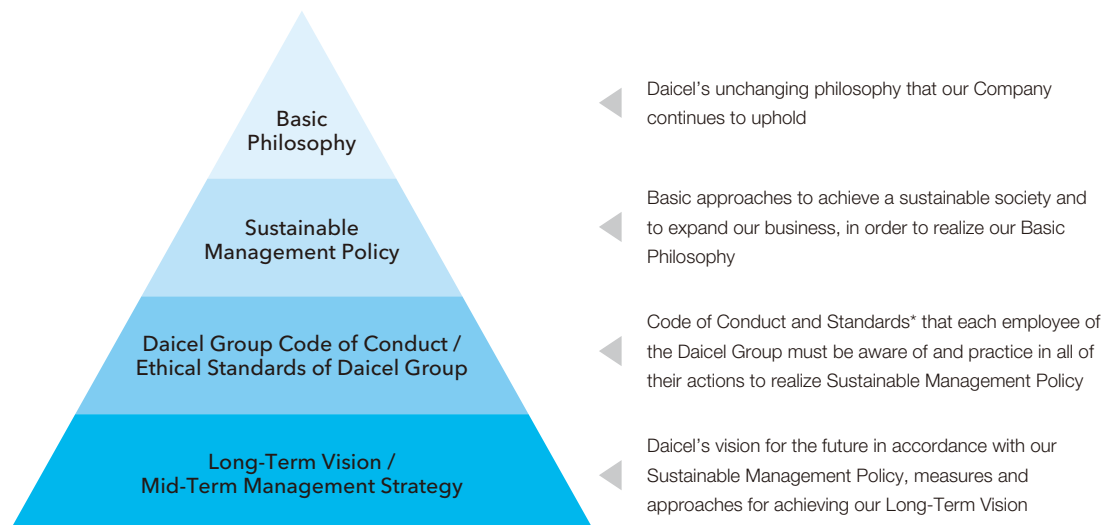
Upon a firm foundation of safety, quality and compliance, the Daicel Group will realize our Basic Philosophy by both contributing to the establishment of a sustainable society and pursuing business growth with integrity, tireless efforts and self-transformation.

**We create and provide people with new values to achieve better quality of life.**

**We construct a circular process with all our stakeholders to make harmonious coexistence with the environment.**

**We promote “people-centered management” that enables all our diverse employees to grow while establishing their own presence and achieving fulfillment.**

## ● Corporate Philosophy



\* In response to the quality misconduct observed at the third-party certification, we reaffirmed the importance of safety, quality, and compliance, and reviewed the Code of Conduct and Ethical Standards to ensure thorough implementation throughout the Group.

## Message from the President and CEO



*Y. Ogawa*

Yoshimi Ogawa  
President and CEO, Daicel Corporation

# Accelerate Technological Innovations and Create a Bright Future Together With Diverse Partners

**We will accelerate value co-creation through the supply chain,  
aiming to build a circular society and achieve sustainable growth of the Daicel Group.**

## ■ Introduction

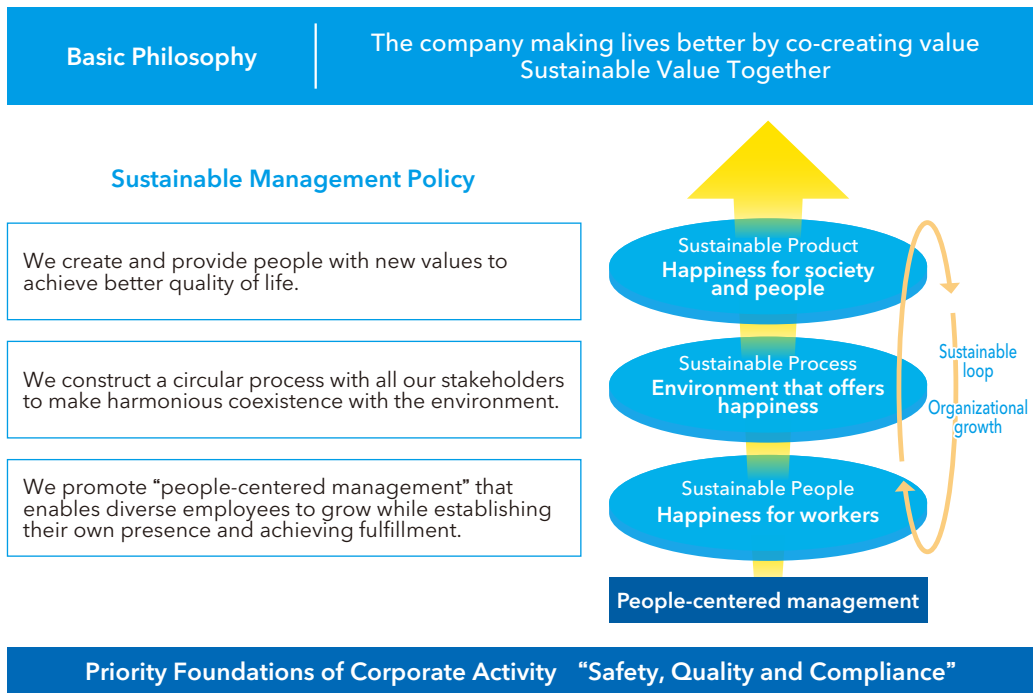
Last year, inappropriate conduct regarding third-party certification was revealed with respect to certain products of our group company, causing great inconvenience and concern to our customers and other concerned parties. I would like to extend our sincerest apologies on behalf of the entire Daicel Group. We take seriously the thorough investigation conducted by outside experts and the recommendations suggested by them to prevent recurrence. We have implemented various measures, including organizational reforms, to prevent recurrence. We have renewed our Code of Conduct and Ethical Standards, with every employee reaffirming the sense of “Being a good member of society before being a business person.” Additionally, in order to ensure that the importance of safety, quality and compliance is the priority foundations of the group is permeated through each corner of the organization, we have compiled the past incidents of accidents and quality issues and these are carried by all the employees along with the new Code of Conduct and Ethical Standards. I believe it is of utmost importance that we reflect on this and other events found this time and do not let the lessons learned from them fade away. We look forward to your continued guidance and support.

## ■ Daicel’s Management Philosophy

In 1919, eight celluloid companies came together to form the Dainippon Celluloid Co., Ltd., the predecessor of our company. During World War I, the number of celluloid manufacturers increased due to a special procurement boom. This led to excessive felling of camphor trees in Taiwan, which was a major producer of camphor—a raw

material used in plasticizers—and excessive competition further led to mass production of inferior products. Concerned by the situation, our first president, Mokichi Morita, preached resource conservation through planned felling of trees and improved international competitiveness through quality stability, leading to a merger that transcended conglomerates. As a materials manufacturer, we also focused on nurturing processing companies who are our users and on industrial development through co-existence and co-prosperity along the entire supply chain through the stable supply of products. The subsequent development of flame-resistant celluloid and the mass production of domestic photographic film was the creation of a value chain through functionalization and downstream production of products. Based on the idea that a company exists to contribute to society, Daicel has maintained its “desire to enrich people’s lives” and “spirit of co-existence and co-prosperity with other companies,” which is reflected in the current management philosophy, and a source of pride for the company.

Here, the scope of co-existence and co-prosperity is not limited to the company, but includes co-existence with the global environment and nature, as stated in the philosophy of our first president. This is one of our major characteristics. Looking at the percentage of our chemical raw materials purchased, 20% are of crude oil origin, but the most common is methanol, which is a non-petroleum raw material in C1 Chemistry. The next largest volume is of wood-derived pulp, which is the raw material for cellulose acetate. We are thus closest to being a company which uses biomass as raw material. With these roots, we believe it is only natural for us to aim to build a circular society by realizing the “Biomass Value Chain Concept” and carbon neutrality (negativity) set forth in our Long-Term Vision and by aligning ecology and economy through the power of chemistry.



## Aligning Ecology and Economy

Ecology essentially means the study of life and habits of animals and plants. Being in harmony with nature begins with eliminating waste. While there are certainly many technical challenges involved in building a circular society and achieving carbon negativity, ecology and economy are inherently compatible. The reason why it is difficult to achieve a circular society is because ecology has an impossible number of processes. If we move from the current mass-production and mass-consumption society to one that produces and consumes only the amount that is truly necessary, ecology and economy will be compatible in the final goal, even if they conflict somewhat in the process. Otherwise, it won't be possible to make truly sustainable products. Even if it is not easy, we should see “opportunity for corporate growth” in solving problems in ecology to strike a balance between ecology and economy. Japanese companies have gained strength in the past by turning pollution and environmental problems into opportunities for improvement and innovation. To achieve a sustainable society, including carbon neutrality and resource circulation, it is necessary to change industrial structures and the way we use energy. We believe that our company's mission is to promote technological innovation to accelerate this movement.

## Growth Opportunities for Technological Innovation

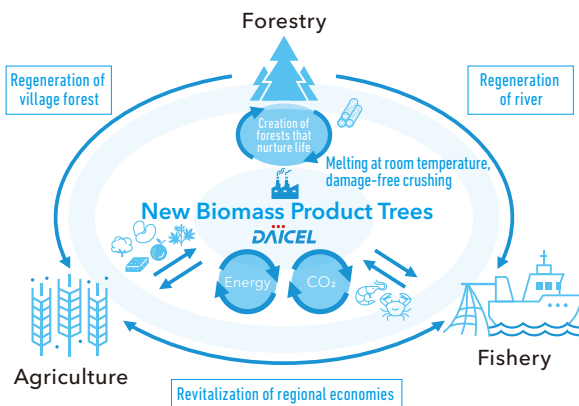
As an example of technological innovation to achieve both ecology and economy, Daicel has started to realize the “Biomass Value Chain (hereinafter referred to as “BVC”) Concept” and “Microfluidic Devices” using its own strengths.

The BVC concept aims to establish a technology to systematically utilize forests, which cover approximately 70% of Japan's land area, as a renewable biomass resource under moderate conditions and to create a sustainable, circular industrial structure. Of course, we do not believe that cellulose acetate alone, which is made from wood, can replace petroleum-based plastics. It is essential to have an open attitude to widely share the technology and data on the use of biomass materials, not just wood, with our partners. If spread widely, this technology will also contribute to regional development. Companies establish innovative technologies and use that know-how to utilize locally-produced biomass as a resource. This will encourage individuals to experience the joy of manufacturing at an individual, household and community level, which will bring out a rapid change in their lifestyles. The BVC concept will be pursued on two fronts—one is establishing innovative technology and generating profits through added value and the other is spreading know-how on a not-for-profit





## Biomass Value Chain



basis.

“Microfluidic Device” technology has the potential to bring about significant changes in the manufacturing processes of the chemical industry. Since manufacturing processes of chemical plants generate impurities other than the target substances, a lot of energy is consumed in the refining processes required for purification. If only the target substance can be produced under ideal reaction conditions, it will eliminate the need for refining processes, which consume 80% of the energy. The microfluidic device developed by our company in collaboration with the National Tsing Hua University of Taiwan is an ultra-compact chemical plant, in which several chemical operations

are allowed to be performed on ultra-fine channels on glass substrates to achieve ideal reactions. In FY2025/3, we plan to use this technology to manufacture polymers for photoresists used in semiconductor circuits. To start with, we will implement this method in the manufacturing of high-mix low-volume products and then expand the scope to mass-production. [P.31 Sustainable Process](#)

## ■ DX and an Open Mind — Foundation for Co-Creation with Other Companies

It is difficult for one single company to establish a harmonious balance between ecology and economy. For example, even within the same plant, if the supply chain from pre-processing to post-processing is not well-connected, the material balance collapses and mutual processes become irrelevant. On the other hand, if the processes are run in another company but the supply chain is well-connected, optimal operations of the entire supply chain can be achieved and large-scale wastage and loss can be averted, striking a harmonious balance between ecology and economy. DX and an open mind are the key to achieving optimal operations of the entire supply chain, which goes beyond the optimal operations of a single company.

DX helps us visualize the amount of energy required in real time and, is therefore, indispensable for eliminating energy loss and achieving carbon neutrality while manufacturing what is needed. As a means to achieve this, Daicel established the “DAICEL Production

Innovation” in 2000, and then the Autonomous Production System, which is an evolved version of DAICEL Production Innovation using AI. One of the reasons why corporate alliances have not been successful in Japan in the past is because of the lack of unified data resources and data architecture. DAICEL Production Innovation makes it possible to unify the information from all the companies connected in the supply chain and visualize the data with aligned resources. With the concept of “Virtual Company,” the entire supply chain is viewed as one company, which has functions and facilities such as procurement, production and sales. We intend to optimally manage and administer these functions and facilities and optimize the entire supply chain, which will help in striking a harmonious balance between ecology and economy.

Even in the field of research and development, working with an open mind allows us to understand each other’s true needs and the technologies required to meet them, which significantly reduces the time required for development. In that case, I think there is a way of thinking that patents should be used for a minimum amount of royalties at first, and then distributed accordingly once its benefits are established.

Co-creation can be in many forms such as forming business alliances or mergers; however, having a loose governance system may also serve the purpose. I believe now is the time to freely discuss about how to work that out. Keeping an open mind is the first step to achieving open innovation.



## ■ Mid-Term Management Strategy Review

FY2023/3 saw a delay in the recovery of automobile production due to insufficiency of semiconductor supply as well as a decline in the demand for electronic devices. However, although these conditions were unfavorable, there was a tailwind in foreign exchange, and we were able to achieve the sales targets set under the Mid-Term Management Strategy. We will investigate and find out if our achievements were a result of actual ability or a tailwind, and plan our next actions accordingly.

Under our current strategy, we have divided our operations into three categories to fully utilize the assets and achieve maximum efficiency in resource recovery. In the first category of operations, we restructured our existing businesses and changed our organizational structure to have a more market-oriented approach, that is, meet the needs of our customers. We also withdrew operations, closed down sites and sold off businesses at a rapid rate in line with our portfolio management. Under category two, we drastically examined our relationships with our long-standing, joint-venture partners, and made Polyplastics Co., Ltd. our wholly owned subsidiary in 2020. We have almost completed our plans for the first half of the Mid-Term Management Strategy and will focus on forming a virtual company, which is our operation category three, in FY2024/3.

## ■ Thoughts on Mid-Term Management Strategy Update and Issues to Be Tackled in the Second Half

Various social condition have caused sudden changes in the business environment. We believe it is important to constantly update our strategy according to the changes in the business environment. With that in mind, we reviewed our actions and progress and updated our Mid-Term Management Strategy in May 2023. We have been accelerating our operations to keep up with the speed of the world and hence, this review gave each one of us in the Group an opportunity to pause and reflect.

One of the challenges to be tackled in the latter half of the Mid-Term Management Strategy is to ensure reliable operation of the raw material (carbon monoxide) plant for acetic acid, which is a large-scale investment. Due to Russia’s invasion of Ukraine, we were unable to procure coal for the plant from the initially-planned location and had to revise our operations plan. With this review, we sought to not only adapt our operations to different types of coal but also increase the number of available types of coal, and increase the

stability in raw material procurement and production. We thus intend to convert this crisis into an opportunity by making our operations more flexible.


Another challenge is to identify opportunities for new businesses and M&As. Although we need to work on increasing the endurance of new businesses, the overall response feels positive. We have also identified the potential of metal adsorption technology to recover rare metals and other metals using fine cellulose. Nanodiamond is also a material that can be chemically modified to impart organic and inorganic properties. Using our detonation technology, we are conducting joint research to develop a method for synthesizing nanodiamonds on a large scale, and also working on developing technologies to use nanodiamonds as a catalyst for CO<sub>2</sub> reduction. In addition, we are looking to expand our businesses in the field of life sciences. Through the development of new technologies and exploring new combinations of materials, we are paving our way to achieve carbon neutrality and even carbon negativity by 2050.

 P.28 Sustainable Process

## ■ Human Resources Are the Most Important Management Resource

I believe the second half of our Mid-Term Management Strategy is when the Group's capabilities will be truly tested. Human resources are our most important resource, which are indispensable in realizing a sustainable society and supporting the growth of the company through various measures. We promote "people-centered management" that enables diverse employees to grow while establishing their own presence and achieving fulfillment. One of the ways we do this is through "delegation of authority" and "personnel selection." During the development of our Autonomous Production System, we asked a young employee in the 30s to think of a production system that looked 10 years into the future. He took on the responsibility and worked in collaboration with the University of Tokyo. I said "I leave it to you" and he proceeded with the project proactively, reporting to me regularly, and achieving excellent results. This is when I newly realized the importance of delegating responsibility and praising the results.

When I was a student, I cycled across the U.S. to test myself. I met a lot of different people, some of whom thought I was a hero for taking up such a challenge. But when I saw local people volunteering at the church on weekends, I realized that it is such people who fulfill their duties in their daily, honest lives who are truly the great ones. The same is true for companies, and it is of utmost importance that the

employees who fulfill their obligations honestly also get to exercise their rights. In FY2023/3, we reformed our personnel system by collaborating with the Workers' Union. We introduced a compensation system that encourages employees to take on challenges and evaluates the process and results of their work, along with a multiple-track job grade system. Employees also have rights and duties, and if company life accounts for one-third of an employee's life, it would be more fulfilling to have multiple options for work and career, and to have options for choosing how you want to live and work. With a strong desire to fulfill this, we reviewed our entire human resource system, including the multiple-track job grade system. With regard to the compensation system, we introduced the Restricted Stock Compensation System for managers to allow each employee to gain a manager's perspective and work with eyes on the mid-term and long-term results. This means increased compensation as well as funds for a second life. We believe that people-centered management not only entails protection of jobs, but also entails having a capacity to give employees more options.  P.34 Sustainable People

## ■ Improvement of Profitability and Growth

We need to improve our management indicators to accelerate growth and increase our corporate value. The ROIC, in particular, is still low. Although we have stepped up our capital expenditure and our invested capital is increasing, we are determined to recover the investments and obtain profits. With that in mind, we shall maintain the sales and profit growth by promoting the sales and improving the profitability and growth of our main businesses, while also aiming to increase the EBITDA and achieving the target of 10% ROIC by FY2027/3. We also plan to further improve shareholder returns based on a total return ratio of 40% or more.

Although chemical plants are still heavy and bulky, the implementation of microfluidic devices in the future will shorten the payback period of investment. Once this is realized, materials industries such as ours will be able to shorten their payback period in the same way as the assembly industry. This will also help in striking a balance between the ecology and economy. We hope to show that being environment-friendly also increases the efficiency of economic capital.

Although we have set a target of 1 trillion yen in sales for FY2031/3, we are aiming for a multi-trillion-yen joint venture. We will promote coexistence and co-prosperity in the supply chain as we increase Daicel's corporate value, make lives better through value co-creation, and create a bright future.

## At a Glance

We support the worldwide monozukuri manufacturing through the power of chemistry. (As of March 31, 2023)



### Medical / Healthcare

▶ P.38

We provide safe, high-quality healthcare materials and solutions for pharmaceutical development to a society that values quality of life.

### Smart

▶ P.40

We provide new solutions to the electronic materials market that makes life more enjoyable and fosters technical innovation.

### Safety

▶ P.42

We provide safety and security to a wide range of industries with One Time Energy® technology developed through our airbag inflator business, which boasts a high global market share.

### Materials

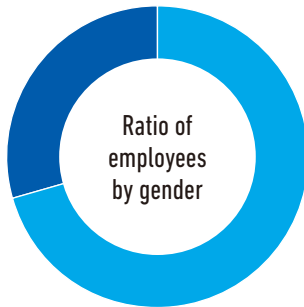
▶ P.44

We provide value to a wide range of industries on the strength of our diverse product lineup centered on the acetyl chain and unique manufacturing methods.

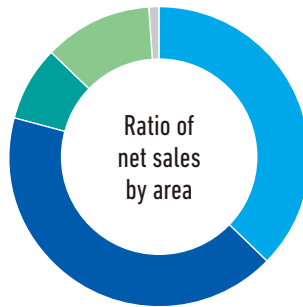
### Engineering Plastics

▶ P.46

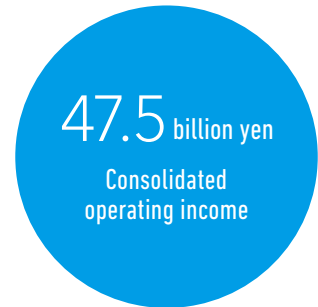
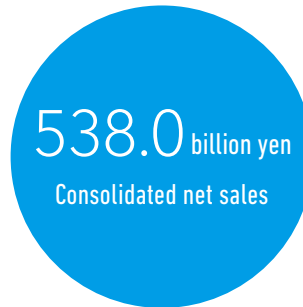
We provide high-function, high-value-added solutions to a wide range of industries with our technological capabilities cultivated over the years as a pioneer in engineering plastics.



Male: 7,909 (70.6%)  
Female: 3,298 (29.4%)



Japan: 37.3%  
Asia: 41.9%  
North America and Latin America: 8.2%  
Europe: 11.6%  
Others: 1.0%



FY2023/3 results\*

World market leader

**Chiral columns**

Chromatographic columns for separation of optical isomers. Contributing to the provision of safe medicine by separating active pharmaceutical components

**BELLOCEA®**  
(spherical cellulose acetate for cosmetics)

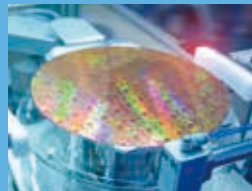
Its marine biodegradability is expected to contribute to solving the marine plastic waste problem in the cosmetics industry

Net sales  
**16.6 billion yen**  
Composition ratio  
**3.1%**

World market leader

**Cellulose acetate for LCD optical films (TAC)**

Utilizing its superior optical characteristics, transparency, and smoothness, it is used as a protection film for LCDs

**Solvent for electronic materials**

High purity, low metal solvent production and quality control system with a proven track record in semiconductor process applications

Net sales  
**29.6 billion yen**  
Composition ratio  
**5.5%**

Japanese market leader

**Automobile airbag inflators**

Supplying the key component for automobile airbag systems that protect passengers in the event of a collision

**Pyro-Fuse**

Supporting safe daily living by expanding One Time Energy® technology (developed in the course of producing inflators) to industrial applications other than automobiles

Net sales  
**84.0 billion yen**  
Composition ratio  
**15.6%**

Japanese market leader

**Acetic acid**

The only manufacturer of acetic acid in Japan. Acetic acid is an environment-friendly ingredient for plastic products, providing solutions as an environment-friendly material

World market leader

**Alicyclic epoxy**

The world's only manufacturing process that contains no impurities and no chlorine, so it is widely used in electrical materials applications where reliability and durability are required. It is also attracting a great deal of attention for EV applications

Net sales  
**160.8 billion yen**  
Composition ratio  
**29.9%**

World market leader

**Polyacetal (POM)**

Used in a wide range of applications such as automobiles, electronics and electrics, and industrial equipment, contributing to the development of the major industries of each era

World market leader

**Liquid crystal polymer (LCP)**

Used in many ultra-compact precision connectors for the latest IT devices, such as tablets and smartphones, which are becoming smaller and smaller, and support public infrastructure

Net sales  
**238.1 billion yen**  
Composition ratio  
**44.2%**

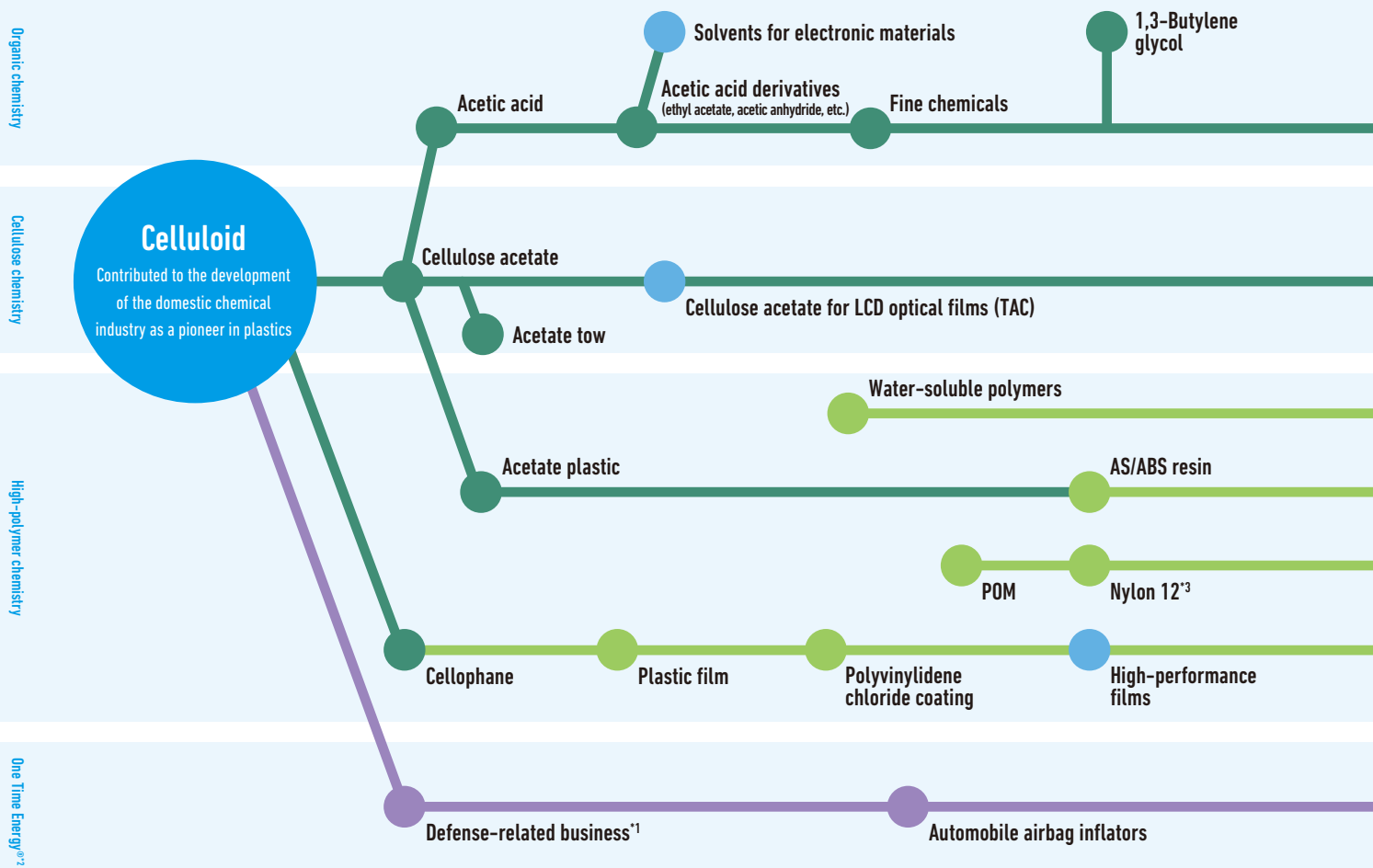
\* Figures for other segments are not included in net sales and composition ratio. FY2023/3 sales reflect the change in segmentation of cosmetic ingredients 1, 3-BG (Medical/Healthcare to Materials).

# Value Creation, Past and Present

## Strengths of the Daicel Group in terms of product and technology lineage

Since its foundation, Daicel has developed a wide range of products and technologies based on four technological fields: “cellulose chemistry” as its starting point, “organic chemistry” that established the acetyl chain, “high-polymer chemistry” cultivated through the development of various resins, and “pyrotechnics technology” that evolved into One Time Energy®. Based on these core technologies, the Group has developed its current business areas and is moving forward to contribute to the creation of a circular society. On this page, we will introduce the connections from the early days of the Company to the development of our current products and technologies, as well as the strengths of our Group that we have developed over the years.

### Core areas



### Strength 1 Pioneer in Biomass Chemistry

Since our founding in 1919, we have always been involved in biomass chemistry, the production of chemicals from plant-derived raw materials. The Company's celluloid business, our founding business, is based on cotton and wood pulp, and camphor from camphor trees is used as a plasticizer. Cellulose acetate, for which flammability has been overcome, is still one of our main products. After the oil shock of the 1970s, we were among the first to switch to raw materials that do not rely on petroleum in a national project called C1 Chemistry, which aimed to eliminate the dependence on petroleum. Today, plant-derived chemistry is attracting renewed attention in order to ensure the sustainability of society, including the global environment. Daicel creates products based on renewable resources that contribute to the enrichment of people's lives and the earth. P.26

### Strength 2 Unique Technology Cultivated Since the Company's Founding

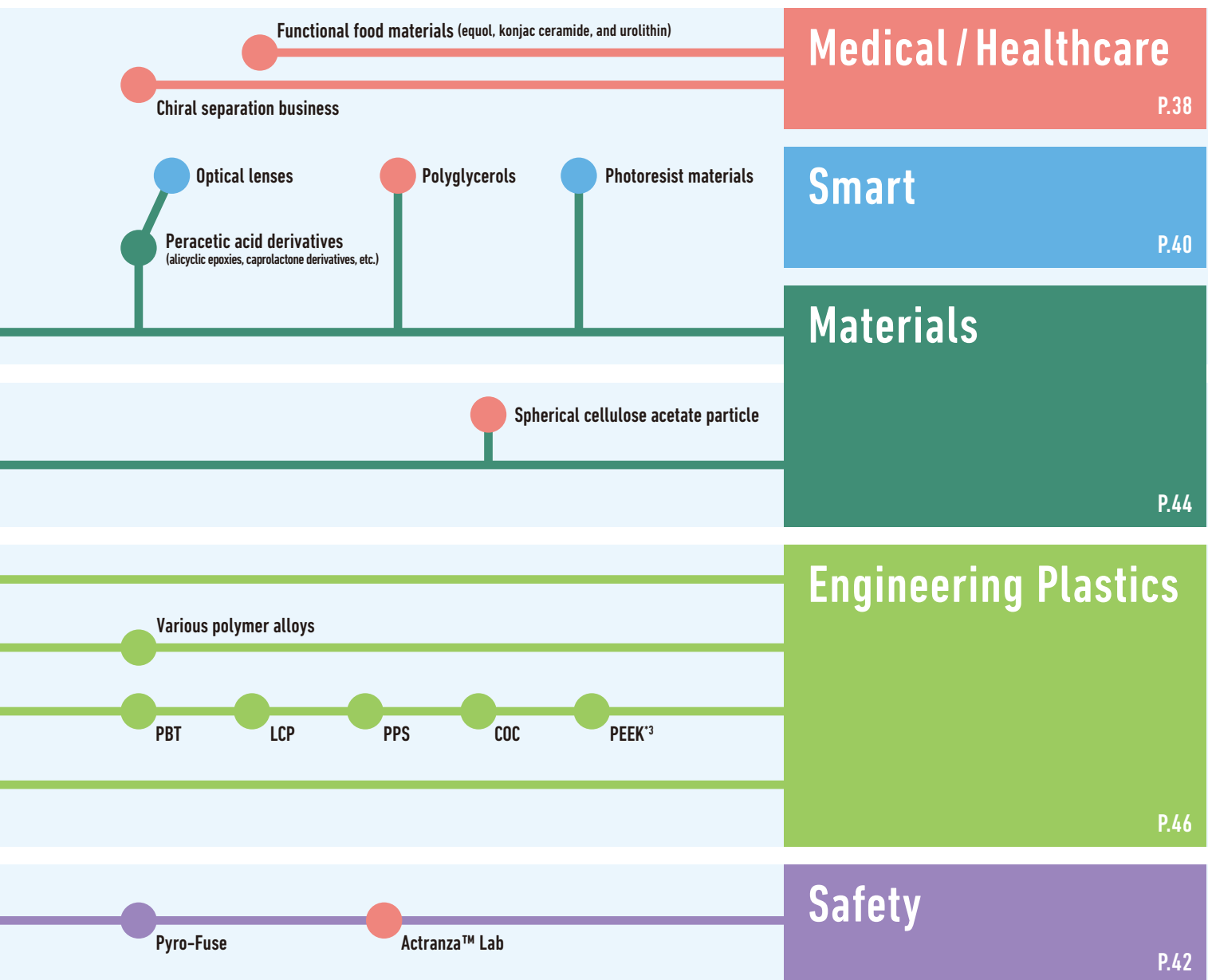
#### 1. Acetyl Chain

We are the only acetic acid manufacturer in Japan and have built a series of distinctive acetyl chains that produce acetyl chemicals, cellulose acetate, and other acetic acid derivatives, giving our business a strong global position.

#### 2. Cellulose Acetate

Utilizing the knowledge of handling natural materials and property control technology that we have accumulated over many years, we are developing highly functional products in a wide range of fields, centered on cellulose acetate, such as acetate fiber, filter materials, liquid crystal panel film materials, and cosmetic materials.

<sup>1</sup> Withdrawn from the business <sup>2</sup> The pyrotechnic technology developed in the course of producing inflators is defined as One Time Energy®, which produces optimal energy safely, reliably, instantaneously, and only once.



### 3. Engineering Plastics

As a specialized manufacturer of engineering plastics, we maintain a broad product lineup centered on Polyplastics Co., Ltd., and have gained a large global market share by providing solutions to our customers, drawing out the best features of these products.

#### 4. One Time Energy®

The pyrotechnics business developed because cellulose nitrate, the raw material for celluloid, can be used as an explosives raw materials. We have expanded this technology, which began in the defense-related business, to civilian products and are currently contributing to the safety of people's lives by applying it to a wide range of fields, including automobile airbag inflators, pyro-fuse, and drug delivery devices.

### Strength 3 DAICEL Production Innovation

DAICEL Production Innovation supports the manufacturing foundation we have as a chemical manufacturer. By visualizing the approximately 8.4 million pieces of plant operation know-how possessed by skilled operators and incorporating them into the operation support system, production efficiency has been improved by a factor of three.<sup>\*4</sup> Furthermore, in 2020, we developed the Autonomous Production System, an evolution of this system using AI. In addition to safety and quality, the system contributes to the reduction of CO<sub>2</sub> emissions by optimizing energy use, and prevents problems by predicting equipment irregularities in advance in pursuit of the ultimate in production efficiency. 📖 P.36

<sup>\*3</sup> Products of Polyplastics-Evonik Corporation <sup>\*4</sup> Results at Daicel's Aboshi Plant

# Value Creation Process

Under its Basic Philosophy and priority foundations of corporate activity (safety, quality, and compliance), the Daicel Group will continue to contribute to the happiness of people and society by expanding the scope of value co-creation based on its Sustainable Management Policy.

## Trends in Social Change

- Global population growth and ongoing aging of society
- Pursuit of safety and security
- Depletion of resources and effective use of resources
- Uncertain world situation
- Evolution of digital technologies (IoT, AI)
- Response to climate change, prevention of environmental pollution
- Global social change, diverse values

Addressing social issues, and providing people with new values to achieve better quality of life

## INPUT

(Invested capital for FY2023/3)

### Human capital

Number of employees	11,207
Number of R&D Personnel	1,228
Ratio of overseas employees	52.5%
Ratio of female employees	29.4%

### Intellectual property

R&D expenses	21.9 billion yen
Number of patents owned*	Approx. 5,100
Number of trademarks owned	Approx. 1,900

### Financial assets

Total assets	765.6 billion yen
Equity Ratio	38.6%

### Manufacturing capital

Capital expenditures	56.3 billion yen
Optimal plant operation with DAICEL Production Innovation, and the Autonomous Production System	

### Social capital

Number of group companies	76 companies
● Trust with customers and business partners cultivated over many years	
● Cooperative links with partners in industry, government, and academia	

### Natural capital

Energy consumption (in crude oil equivalent)	753 thousand kL
Water intake	101 million tonnes

Pioneer in Biomass Chemistry

Unique technology cultivated since the company's founding

Pursuit of production efficiency through DAICEL Production Innovation

Our strengths P.14-

Forming a New Business Group to expand the scope of value co-creation

Mid-Term Management Strategy

Accelerate 2025 P.22

Contributing to happiness of people and society  
Sustainable Product

Achieving goals with environmentally and people friendly methods  
Sustainable Process

Giving employees a sense of fulfillment  
Sustainable People

Sustainable Management Policy  
People-centered management

Businesses P.38-

Medical/Healthcare

Smart

Safety

Materials

Engineering Plastics

Other

OP-I

A company that creates businesses that address social needs

OP-II

A group that can co-create with other companies

Priority Foundations of Corporate Activity

\* Figures for FY2022/3 are for Daicel on a non-consolidated basis, but for FY2023/3 the boundary has been expanded to include the number of patents and trademarks owned by the Daicel Group.



## Basic Philosophy

The company making lives better  
by co-creating value

P.04

## Goals

Daicel will contribute to building a circular society and achieve both a sustainable society and the growth of our Group

## Long-Term Vision

DAICEL VISION  
4.0

Contribute to building a  
circular society

P.18

## OP-III

Establishment of a  
co-creation scheme  
with partners

Safety, Quality, and Compliance

## OUTPUT/OUTCOME

(FY2023/3 results)

## Financial Outcome in Value Creation

Net sales	538.0 billion yen
Operating income	47.5 billion yen
EBITDA	79.1 billion yen
ROIC	5.3%
Total return ratio	51.7%

## Sustainable Product

- Providing happiness through our business and products
 

● Medical/Healthcare	P.38
● Smart	P.40
● Safety	P.42
● Materials	P.44
● Engineering Plastics	P.46
- Exploring Possibilities with Technology for Melting Wood P.26

## Sustainable Process

- Daicel Group's Challenge to Achieve Carbon Neutral P.28

## Sustainable People

- Implementation of "People-Centered Management" P.34

# Long-Term Vision “DAICEL VISION 4.0”

## Realizing a Sustainable Society While Achieving Sustainable Business Expansion

The Daicel Group has formulated its Long-Term Vision “DAICEL VISION 4.0” and its Mid-Term Management Strategy “Accelerate 2025” based on this vision, and is taking steps toward its realization.

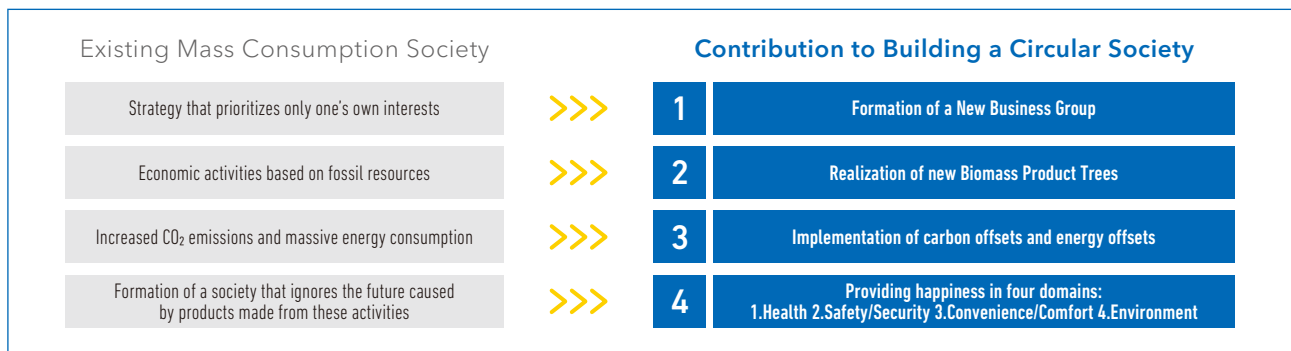
On this page, we will introduce the four structural transformations that the Group hopes to achieve in order to “contribute to building a circular society,” as stated in our Long-Term Vision.

## Goals of the Long-Term Vision

We believe that in order to achieve both a sustainable society and the growth of the Daicel Group in line with the Sustainable Management Policy, it is necessary to change the social structure that has taken mass production and mass consumption for granted.

Therefore, our Long-Term Vision is to contribute to the creation of a circular society through these challenges, while leveraging the strengths of our Group and working with partners that share our aspirations.

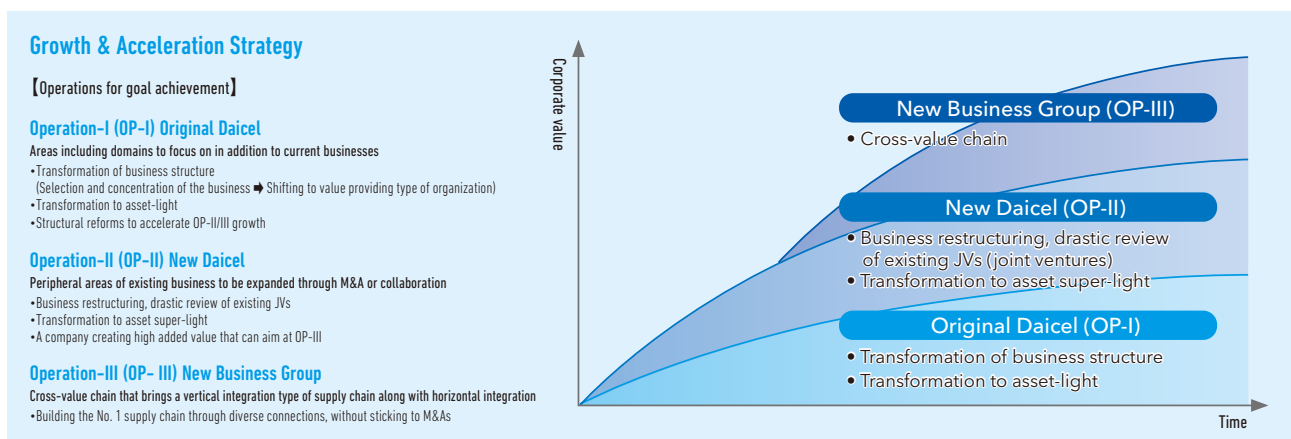
### Social shift to realize a circular society as stated in our Long-Term Vision and Mid-Term Management Strategy



## 1 Formation of a New Business Group

In order to change the social structure, it is essential to form a group (New Business Group) that can co-create new value for society and the environment. From a manufacturing perspective, we are just one of the processes that lead to our customers' end products. The supply chain is made up of a number of interconnected processes. By combining the strengths of the various companies, it is possible to create more efficient manufacturing than a single company could do by trial and error, and to create better products and more environment-friendly manufacturing methods. Our goal is for the supply chain to evolve into a unified value chain with the strength of co-creation to provide greater value to society. In addition to vertical partnerships connected by supply chains, diverse connections through horizontal business partnerships such as those among companies in the same industry are called cross-value chains, and the path to forming such a New Business Group is divided into three operations (OP below) that expand the scope of co-creation from Daicel alone to the Daicel Group to partners.

P.22 Mid-Term Management Strategy



## 2 Realization of New Biomass Product Trees

Cellulose acetate, which has been our forte, is an environment-friendly biomass material, but its production process requires a large amount of energy. To address this issue, we have created a technique to extract cellulose from wood under environment-friendly conditions by utilizing “technology for melting wood” and to produce cellulose acetate from cellulose that does not react easily, using less energy, through joint research with universities. In addition to cellulose, it is now possible to extract reactive substances such as hemicellulose and lignin contained in wood, which have not been utilized in the past. We are taking on the challenge of creating a new product tree that is environment-friendly in both products and manufacturing processes, leveraging the Group’s existing businesses and insights from throughout the years.

We are working on real world implementation of this technology as one means of changing from a society that massively consumes finite fossil fuels to one that recycles the forests that cover approximately 70% of Japan’s land as renewable resources.

📖 P.26 Sustainable Product

## 3 Implementation of Carbon Offsets and Energy Offsets

The chemical industry, which operates heavy and bulky plants, is generally considered an “energy-intensive industry.” The Daicel Group believes that in addition to creating products that benefit people and society, the manufacturing process must also be friendly to people and the earth. We are working to achieve carbon and energy offsetting through energy conservation based on DAICEL Production Innovation, as well as through innovations in manufacturing processes and new technologies that enable the reuse and effective utilization of carbon emissions.

📖 P.28 Sustainable Process

## 4 Providing Happiness in Four Domains

The Daicel Group has defined four focus areas that it offers from the angle of leveraging the Group’s strengths to help solve social issues. In the course of implementing our Mid-Term Management Strategy, we are moving beyond the framework of our existing SBUs<sup>1</sup> to identify specific new commercial products and markets that we will develop within our four focus areas.

📖 P.38 Strategy by Business Segment

### Health

#### Medical supplies

- DDS<sup>2</sup>/Medical device (Actranza)
- Medical devices/packaging materials (engineering plastics)

#### Vital sensor

- Nanodiamonds

#### Functional food materials based on intestinal metabolites

- Equol ● Urolithin

### Environment

#### Environmentally conscious solution business

#### Green chemicals

- Review of existing in-house chemical chains
- Spherical cellulose acetate particles BELLOCEA®
- Fine cellulose
- New cellulose derivatives

### Safety/Security

#### Support for EV vehicles

- Mass production of Pyro-Fuse
- Sales expansion of inflators and Pyro-Fuse to China, Europe and the U.S.

#### Integration with sensing technology through business-to-business collaboration

- Participate into safety equipment in everyday life
- Equipment to prevent injury by detecting a fall

### Convenience/Comfort

#### Development and deployment of new functions through improved processing technology

- Film technology ● Coating technology

#### Inorganic/organic composite electronic materials

#### Materials for electronic devices

- Organic semiconductors, silver nano ink
- Optical lens, etc.

<sup>1</sup>SBU: Strategic business unit <sup>2</sup>DDS: Drug delivery system

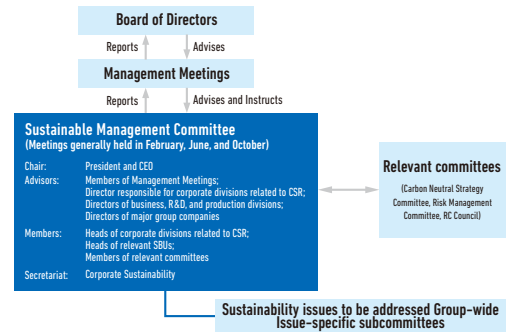
# Sustainable Management and Materiality

Based on our “Sustainable Management Policy,” we will focus on “safety, quality, and compliance” as the most important foundations of our business. Through integrity, tireless efforts, and self-transformation, we will achieve both the realization of a sustainable society and the expansion of the Group’s business. 📖 P.05 Sustainable Management Policy

## Sustainable Management System

The Group has established a Sustainable Management Committee (usually convened three times a year), which is chaired by the President and CEO, and comprising the heads of CSR-related divisions as committee members, and all senior managing executive officers, directors of business, R&D, and production divisions, and officers of major Group companies as advisors. Based on materiality, the committee discusses issues such as contribution to the development of a circular society, response to climate change, and respect for human rights at the management level. In addition, issue-specific subcommittees are working to strengthen initiatives and further enhance information disclosure for each theme related to sustainability, such as LCA, supply chain, and CSR.

### Sustainable Management System



The Board of Directors also oversees the status of the Group’s sustainability promotion by receiving regular reports from the Sustainable Management Committee, including the progress of KPIs (Key Performance Indicators) related to materiality.

In FY2023/3, the Sustainable Management Committee convened three times, primarily to discuss the selection of materiality and its KPIs, as well as measures to address climate change and human rights issues, and reported its findings to the Board of Directors.

## Background and Approach to Materiality Identification

In FY2021/3, the Daicel Group has identified materiality as a key issue for achieving its Long-Term Vision and Mid-Term Management Strategy. Based on the three perspectives of products, manufacturing processes, and people in the Sustainable Management Policy, we identified how the Daicel Group can contribute to solving social issues represented by the SDGs by leveraging its strengths, while also addressing the most important foundations of safety, quality, and compliance, which are the prerequisites for such solutions. Daicel will contribute to the realization of a sustainable society in its own way by implementing the CAPD cycle\* in line with materiality.

## Materiality Identification Process

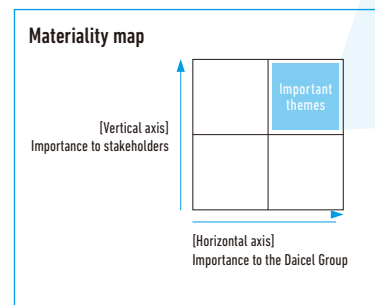
**Step 1** Extract social issues

We referenced international guidelines, SDGs, the principles of the United Nations Global Compact and guidelines published by industry organizations to extract social issues that the Daicel Group should address.

**Step 2** Prioritize

We assessed items extracted in Step 1 by giving consideration to the following aspects to identify key themes with high priority by plotting them on the materiality map according to “Importance to stakeholders” and “Importance to the Daicel Group.” We then sorted them into the two categories of “Growth of the Daicel Group and value co-creation” and “Foundation for the Daicel Group’s continuity and governance.”

- Consistency with the Long-Term Vision and Mid-Term Management Strategy
- Consistency with related policies such as the Sustainable Management Policy, the Daicel Group Code of Conduct, Ethical Standards of Daicel Group
- Consolidation of opinions from relevant departments



**Step 3** Confirm validity

The Corporate Sustainability and other relevant divisions discussed the validity of important themes identified through Steps 1 and 2. The results were reported and approved at the Management Meetings and subsequently endorsed by the Board of Directors.

**Step 4** Formulate materiality and KPIs

By going through Steps 1 to 3, we identified 15 material issues. We designate a KPI for each, and also periodically evaluate progress to maintain a CAPD cycle. We will review our materiality in response to future changes in society and our business.

\* Instead of a Plan, Do, Check, and Act (PDCA) cycle, the most widely known approach to continuous improvement, the Daicel Group has adopted a CAPD improvement cycle to avoid the risk of overlooking crucial facts and realities that often lie hidden in the initial planning stage.

## Materiality List

### 1. Materiality aimed at achieving growth of the Daicel Group and value co-creation

In terms of products, manufacturing processes, and people under the Sustainable Management Policy, we have clearly identified areas where we will leverage our strengths to proactively create value in solving social issues represented by the SDGs.

	Classification	Materiality	Relevant SDGs	
Materiality aimed at achieving growth of the Daicel Group and value co-creation	Sustainable Product	Contribute to beauty and health P.38	<ul style="list-style-type: none"> <li>Providing solutions for the pharmaceutical and medical markets</li> <li>Providing sustainable cosmetic raw materials and health food</li> </ul>	
		Contribute to the smart society P.40	<ul style="list-style-type: none"> <li>Providing solvents for semiconductor processing and polymers for resists</li> <li>Providing functional films that contribute to higher functionality of displays</li> </ul>	
		Provide safety and security for society P.42	<ul style="list-style-type: none"> <li>Providing products that ensure safety and security of mobility</li> </ul>	
		Provide environment-friendly materials and technology P.26	<ul style="list-style-type: none"> <li>Providing materials and technology that reduce environmental impact such as environment-friendly plastics</li> </ul>	
Sustainable Process	Contribute to the development of a circular society P.26, 28	<ul style="list-style-type: none"> <li>Building Biomass Value Chain</li> <li>Reuse of waste and CO<sub>2</sub></li> </ul>		
	Respond to climate change P.28	<ul style="list-style-type: none"> <li>Reduction of GHG emissions through production innovation, energy innovation, and process innovation</li> </ul>		
Sustainable People	Promote diversity and inclusion P.34	<ul style="list-style-type: none"> <li>Work environment where everyone can work with vigor regardless of gender, age, nationality or disability</li> </ul>		
	Support personal growth P.34	<ul style="list-style-type: none"> <li>Personnel development for honing expertise</li> <li>Framework to support employees who take on challenges</li> <li>Building highly fair evaluation system</li> </ul>		

### 2. Materiality related to the foundation for the Daicel Group's continuity and governance

We established respective considerations of prime importance for value creation, including safety, quality, and compliance, for E (environment), S (society), and G (governance).

	Classification	Materiality	Relevant SDGs	
Materiality related to the foundation for the Daicel Group's continuity and governance	Environment	Reduce environmental impact	<ul style="list-style-type: none"> <li>Promotion of waste reduction and recycling</li> </ul>	
	Social	Ensure process safety and disaster prevention, occupational health and safety	<ul style="list-style-type: none"> <li>Elimination of process incidents</li> <li>Minimization of damages based on crisis assessments</li> </ul>	
		Ensure chemical safety and enhance product quality	<ul style="list-style-type: none"> <li>Reinforced quality management to prevent recurrence of quality defects</li> <li>Centralized management and sharing of chemical substance information</li> </ul>	
		Respect human rights	<ul style="list-style-type: none"> <li>Establishment and implementation of human rights due diligence</li> <li>Development of a framework for corrective and remedial action against human rights abuses, and employee education</li> </ul>	
		Foster a corporate culture that meets employee needs	<ul style="list-style-type: none"> <li>Shorter working hours and improvement in the annual paid leave acquisition ratio</li> <li>Employee health promotion</li> <li>Support for flexible work styles</li> </ul>	
	Promote sustainable procurement	<ul style="list-style-type: none"> <li>Improved level of CSR across the supply chain</li> </ul>		
Governance	Strengthen foundation for Group governance and compliance P.56, 63	<ul style="list-style-type: none"> <li>Reinforce corporate governance</li> <li>Enforce thorough compliance</li> <li>Strengthen risk management</li> </ul>		

## Materiality Monitoring

Along with established KPIs and targets, the progress of the identified materiality items is monitored through periodic evaluations by the Sustainable Management Committee and supervision by the Board of Directors. P.48 for a list of KPIs and results.

Our sustainability website provides comprehensive disclosure of our sustainability efforts, including detailed information on materiality. <https://www.daicel.com/en/sustainability/>

Site Map \* items in blue frame are also summarized in this report. The ★ mark indicates the materiality of our group.

#### Sustainability Management Materiality Responsible Care Activities Policy List



#### Environmental Report

- Environmental Management
- ★ Respond to Climate Change
- ★ Reduction and Recycling of Industrial Waste
- Emission Management of Chemical Substances
- Water Resource Preservation
- Environmental Management and Prevention of Air Pollution
- Preserving Biodiversity

#### Social Report

- ★ Respect for Human Rights
- Responsibility for Customers and Product Safety
- ★ Enhancing Product Quality
- ★ Chemical and Product Safety
- ★ Process Safety and Disaster Prevention
- Distribution Safety
- Creating Attractive Workplaces
- ★ Occupational Health and Safety
- Policy and Guidelines on Human Resources
- Initiatives to Help Employees Maintain Mental and Physical Health
- ★ Support for Human Resource Development
- ★ Promote Diversity and Inclusion
- ★ Foster a Corporate Culture That Meets Employee Needs
- ★ Sustainable Procurement
- Contribution to Local Communities and Society

#### Governance

- ★ Corporate Governance
- ★ Corporate Compliance
- ★ Risk Management
- Information Security
- List of Data Collection Boundaries
- Scope of Reporting for Human Resources and Governance Data
- Scope of Data Calculation for Environmental and Occupational Safety Performance
- List of Declarations and Certifications
- Status of Environmental Management System Certification
- Status of Quality Management System Certification
- ESS Data
- GRI Standards Content Index
- Participation in Initiatives and External Recognition

# Mid-Term Management Strategy “Accelerate 2025”

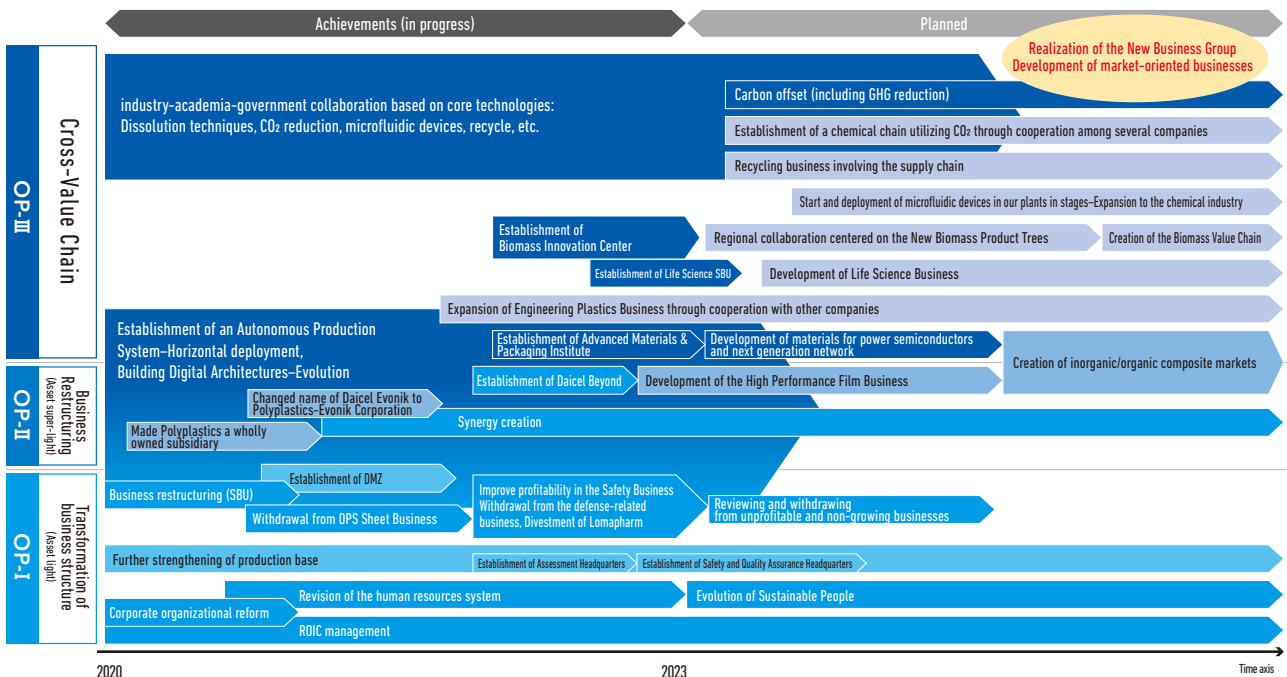
We are working on the steady implementation of each measure outlined in our Mid-Term Management Strategy to improve the Daicel Group’s profitability and business creation capabilities while expanding the scope of value co-creation. We had confirmed the progress of each measure and taken into account the current business environment, and announced an updated version of our Mid-Term Management Strategy in May 2023.

[Presentation Materials of Mid-Term Management Strategy \(updated\)](https://www.daicel.com/en/news/assets/pdf/20230511_8.pdf)  
[https://www.daicel.com/en/news/assets/pdf/20230511\\_8.pdf](https://www.daicel.com/en/news/assets/pdf/20230511_8.pdf)

## Mid-Term Management Strategy (Updated)

In order to expand the scope of value co-creation from Daicel stand-alone to the Daicel Group to our partners, we are implementing the measures of our Mid-Term Management Strategy by dividing it into three operations (hereinafter OP).

In order to transform ourselves into OP-I, “a company that creates businesses that accurately grasping social needs,” we have made steady progress in transforming our business structure, reforming our organization, and reallocating resources through portfolio management. In addition, to achieve OP-II, “a group that can co-create with other companies,” we are working to strengthen profitability and business creation capabilities by maximizing intra-group synergies through a fundamental review of existing joint ventures, including the conversion of Polyplastics into a wholly owned subsidiary. In the future, to realize OP-III “establish co-creation scheme with partners,” we will continue to strengthen our new core technologies under industry-academia-government collaboration, that are the keys to realize a New Business Group and develop market-oriented businesses.



**OP-I Transformation of business structure**

- ▶ OPS Sheet Business: Completed withdrawal in March 2022
- ▶ Defense-related business: Completed withdrawal in March 2023
- ▶ Divestment of Lomapharm: Completed in March 2023
- ▶ Improvement in profitability in the Safety Business
  - Consolidation of production areas: to be completed in FY2024/3
  - Variety integration of inflators (Cataloging): to be completed in FY2024/3

**OP-I Creation of organizations, personnel, and systems**

- ▶ Organizational Reform: Strengthening the Market In Type Business
  - Strengthen corporate functions: Accelerate company wide cross functional strategy promotion
  - Transition to an organization centered on Strategic Business Units (SBUs) to provide value in response to social needs
- ▶ Revision of the human resources system
  - Shifted to a personnel system designed to select young employees and utilize senior employees
- ▶ Evolution of production systems
  - Establishment of an Autonomous Production System and horizontal deployment
    - ✓ Consistently monitoring the status of quality, compliance, and quality improvement
    - ✓ Expansion and penetration of operational load reduction at all plants

**OP-II Business restructuring through co-creation Transformation to asset super-light**

- ▶ Pursue synergy with Polyplastics
  - Partial integration of corporate functions and acceleration of deployment of Daicel’s engineering expertise and other resources
  - Reorganization from Daicel-Evonik to Polyplastics-Evonik
  - Collaboration with other companies that transcend conventional frameworks for functional polymers with the aim of expanding the engineering plastics lineup
- ▶ More efficient and faster development through logistics reform and collaboration
  - Joint warehousing, joint distribution, and inventory optimization from an SCM perspective
  - Expanding initiatives from OP-I (company wide) to OP-II (group venture) and OP-III (New Business Group)
- ▶ Evolution toward Sustainable People
  - To be a company where the employees with great effort are rewarded
  - To be a vibrant workplace that has a respects for diversity

**OP-II Establishment of co-creation scheme with our partners**

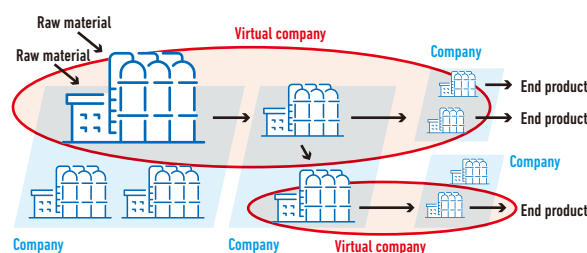
- ▶ Cooperation with other companies
  - Green Chemicals: Collaboration with Japanese and non-Japanese companies
  - Collaboration with other companies in the electronic materials field
  - Provision of DAICEL Production Innovation and Autonomous Production Systems to other companies
    - ✓ Preparations for the New Business Group
- ▶ In-house initiatives
  - Accelerate the creation of new businesses
    - ✓ Establishment of new business model through establishment of new organization
      - Biomass Innovation Center
      - Advanced Materials & Packaging Institute
      - Life Science SBU
    - ✓ “Beyond Coating”
      - Composite inorganic / organic coatings
- ▶ Collaboration with universities
  - Joint research for the realization of carbon negative
  - Joint research in four domains we focus on

## Effects of Realizing a New Business Group (Virtual Company)

We have started to establish virtual company, a concept that considers multiple companies in a supply chain as one company, as a measure to materialize the “formation of a New Business Group” set forth in our Long-Term Vision. In order for both ecology and economy to co-exist in the chemical industry, we must create optimal solutions by collaborating with other companies in the supply chain to address challenges such as carbon neutrality, which cannot be solved by a single company alone, and to improve competitiveness in terms of cost and quality.

The challenge for the conventional chemical industry is that upstream process facilities are built larger than downstream process facilities, creating a capacity gap that leads to energy waste, losses, and inventories. What will be important is the establishment of a system that synchronizes information across company boundaries enabling production of required quantities when necessary. DAICEL Production Innovation has achieved optimal production by unifying terms across departments and plants, visualizing necessary information including operational know-how, and synchronizing information within plants and between plants located far apart. Expanding the scope of its application to other companies connected in the supply chain will lead to the reduction of excess inventory and associated energy use, as well as production and logistics costs. Needless to say, the introduction of DAICEL Production Innovation will also contribute to the improvement of each company’s production efficiency and product quality. As a result, it will improve the competitiveness and corporate value of the entire supply chain, as well as just the company itself.

We estimate that if we were to achieve this in one of our core businesses, part of the benefit would be a 20% reduction in inventory and a 30% reduction in GHG emissions from the production angle. To achieve this goal, we have begun to establish a co-creation scheme with partners, both in terms of commitment among company leaders and information coordination through the use of DX (DAICEL Production Innovation and Autonomous Production System).

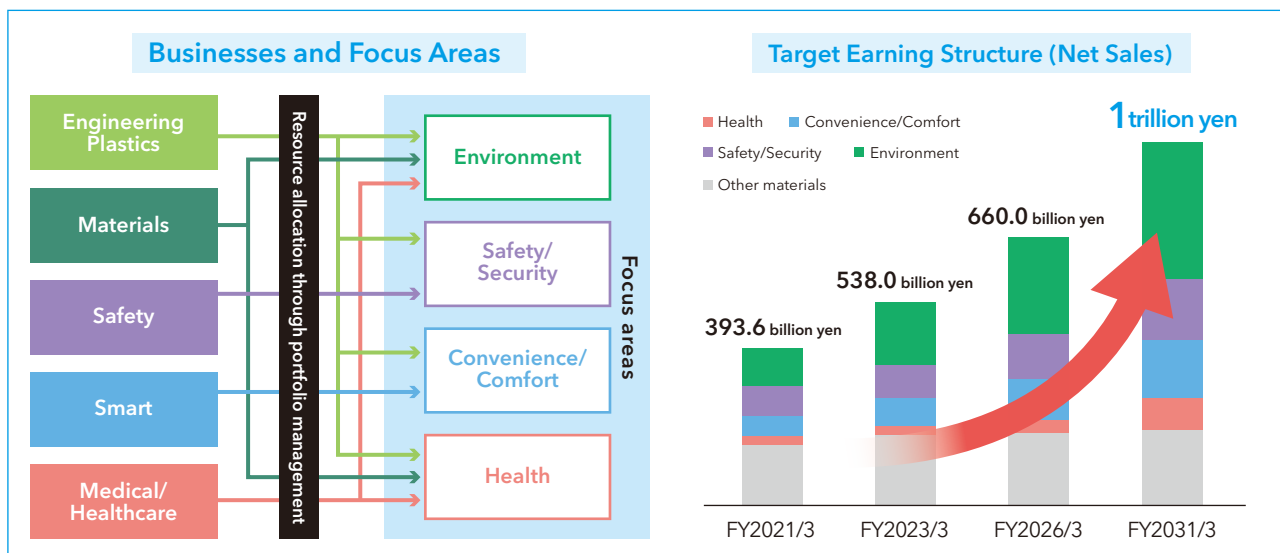


Potential for supply chain collaboration across the border of companies  
20% reduction in inventory, 30% reduction in GHG emissions

Angles	Keywords	Merits
Production	Continuous monitoring management Small lots Reducing time to stop and restart operation Synchronization of production plans	<ul style="list-style-type: none"> <li>Enhancing product quality</li> <li>Inventory reduction</li> <li>Energy conservation</li> </ul>
Development	Co-creation	<ul style="list-style-type: none"> <li>Reduction in development period</li> <li>Reduction in cost of development</li> <li>Reduction of frequency of customer evaluations</li> </ul>
Distribution	3PL Lead time reduction	<ul style="list-style-type: none"> <li>Reduction of third-party warehouses</li> <li>Reduction of on-site logistics</li> <li>Inventory optimization</li> </ul>
Energy	Load equalization Elimination of capacity gap between energy supply and production CO <sub>2</sub> reduction	<ul style="list-style-type: none"> <li>Acceleration of self-consignment system</li> <li>Overall optimization of energy usage through process synchronization</li> </ul>

## Focus Areas and Targeted Profit Structure

The Long-Term Vision identifies four focus areas where social trends and needs are growing and where the Group can demonstrate its strengths. We have classified our businesses into four portfolios: “Next Generation,” “Growth,” “Foundation,” and “Reform,” and we will strive to grow existing and new businesses in the four focus areas while allocating management resources unevenly as appropriate.

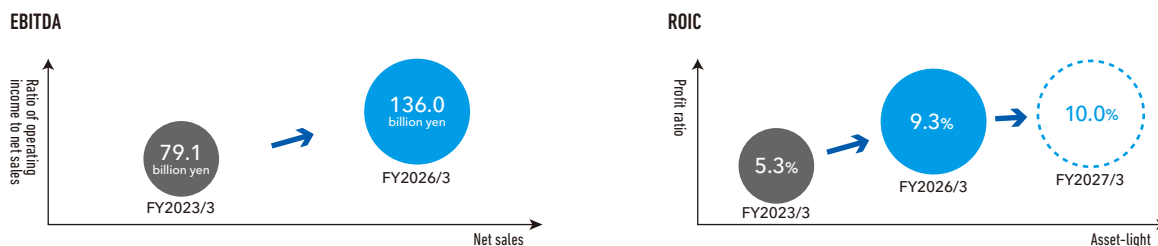


# Financial Strategy

Through balance sheet control and optimal cash allocation, we will achieve our management targets and work to sustainably improve corporate value.

## Financial Performance and Targets

Taking current business performance and changes in the external environment into consideration, we updated our Mid-Term Management Strategy and announced new financial targets for its final year, FY2026/3, in May 2023.



	FY2023/3 results	Target for FY2026/3
Net sales	538.0 billion yen	660.0 billion yen
Operating income	47.5 billion yen	82.0 billion yen
Ratio of operating income to net sales	8.8%	12.4%
Net income attributable to owners of the parent	40.7 billion yen	58.0 billion yen

	FY2023/3 results	Target for FY2026/3
EBITDA	79.1 billion yen	136.0 billion yen
ROE	14.3%	17.1%
ROIC	5.3%	9.3%
ROA	5.6%	7.7%
CCC	163 days	125 days

During the period of the Mid-Term Management Strategy, the Group will continue the trend of increased sales and profits by improving the profitability of the Materials Business as a foundation business of our business portfolio, expanding sales in growth businesses such as the Safety Business and Engineering Plastics Business, and reducing costs from top to bottom throughout the Group. We are aggressively investing to expand production capacity in growth businesses, and plan to invest 190.0 billion yen in growth over the three years through FY2026/3, aiming to further increase EBITDA\*.

Although assets have been increasing in line with the progress of growth investments, we aim to improve capital efficiency by implementing measures to become asset-light, and to achieve ROIC of 9.3% in FY2026/3, the final year of the Mid-Term Management Strategy, and 10% in FY2027/3.

\* EBITDA: Earnings before interest, taxes, depreciation and amortization; ROE: Return on equity; ROIC: Return on invested capital; ROA: Return on assets; CCC: Cash conversion cycle

## Basic Approach of Financial Strategy

### Balance Sheet Control

We will control total assets of balance sheet, which has been expanding as we invest in growth and increase sales, to both maintain a sound financial base and improve capital efficiency.

In order to control the increase in working assets including inventories, we will deploy our Autonomous Production System to each plant and take measures utilizing DX, such as improving the accuracy of forecasting required inventory through AI, continuous point management of quality through online analysis, and flexible inventory management through smaller lots. In addition, for cellulose acetate (product) and pulp (raw material), which account for a large proportion of inventories, we will accelerate inventory reduction by integrating raw material and product varieties through improved manufacturing methods (P.44 Materials Business). This will hold working assets in FY2026/3 (the final year of the Mid-Term Management Strategy) to the same size as in FY2023/3, and a cash conversion cycle of 125 days (FY2023/3: 163 days) will be achieved. In addition, we will pursue “asset-lighting” measures, such as careful selection of investment projects, accelerated reduction of cross-shareholdings (38.9-billion-yen reduction over the Mid-Term Management Strategy period), and reduction and optimization of liquidity on hand, to prevent balance sheet expansion and improve asset efficiency.

#### As of March 31, 2023

Assets	Liabilities and Equity
<b>Current assets</b> 406.6 billion yen Cash and deposits 93.5 billion yen Working assets 278.7 billion yen	<b>Liabilities</b> 455.2 billion yen Interest-bearing debt 322.0 billion yen
<b>Non-current assets</b> 300.1 billion yen Cross-shareholdings 58.9 billion yen	<b>Net assets</b> 310.4 billion yen
<b>765.6 billion yen</b>	<b>765.6 billion yen</b>

#### Target for the end of March 2026

Assets	Liabilities and Equity
<b>Current assets</b> 370.0 billion yen Cash and deposits 60.0 billion yen Working assets 280.0 billion yen	<b>Liabilities</b> 380.0 billion yen Interest-bearing debt 240.0 billion yen
<b>Non-current assets</b> 350.0 billion yen Cross-shareholdings 20.0 billion yen	<b>Net assets</b> 360.0 billion yen
<b>740.0 billion yen</b>	<b>740.0 billion yen</b>

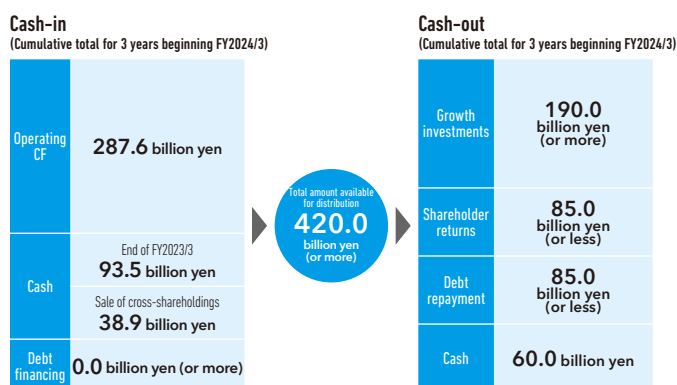


With regard to the capital structure, we will achieve the net DE ratio of 0.5 by the end of FY2026/3 through the repayment of interest-bearing debt to further strengthen the financial base. On the other hand, we will also focus on the efficiency of shareholders' equity. In terms of shareholder returns, we will strive to further strengthen returns to shareholders by paying out dividends and making appropriate share buybacks based on a total payout ratio of 40% or more, which is the target of this Mid-Term Management Strategy. We believe that the continued improvement in earnings per share (EPS) due to the sustained profit growth trend and the implementation of equity controls will have a positive impact on various stock price indices.

## Cash Allocation

We will maximize cash inflow through the promotion of asset-light and strengthening the profitability of each business, and allocate it in a balanced manner to growth investments, shareholder returns, and debt repayment.

In addition to strengthening profitability, we will properly manage business assets, reduce non-business assets, reduce liquidity on hand, and use the cash generated to invest in growth, return profits to shareholders, and repay debt. For growth investments, we will allocate 190.0 billion yen, mainly for investment in increased production in the Engineering Plastics Business. Cash outflows of up to 85.0 billion yen each are planned for shareholder returns and debt repayment. In the event of unplanned growth investments, M&A and other projects that will lead to further expansion of cash generation capacity in the future, we will flexibly control cash-in and cash-out to ensure that we seize opportunities to improve corporate value.



## Growth Investments and Their Effects

We will focus on the Engineering Plastics Business of Polyplastics as a main growth investment target in the Mid-Term Management Strategy, which became a wholly owned subsidiary in October 2020. The wholly-owned subsidiary gave us greater freedom to develop geographic markets and enable us to speedily pursue our growth strategies, such as investments in capacity expansion of mainstay products and expansion of new product lineups. Our Mid-Term Management Strategy is to increase production of POM, LCP, and COC, which is expected to have a cumulative effect of 30.0 billion yen in EBITDA from its start by FY2026/3 and 178.0 billion yen in EBITDA by FY2031/3. We are also working to maximize synergies within the Daicel Group by promoting the scaling out of DAICEL Production Innovation, integrated operation of the plastics businesses, and mutual utilization of R&D resources.

### Increased Production Investment Effectiveness Targets

Investment	Initial plan		Forecast		Effect (EBITDA)*	
	Start of operation (fiscal year)	Increased production capacity (MT/year)	Start of operation (fiscal year)	Sales expansion strategy	FY2026/3 (billion yen)	FY2031/3 (billion yen)
POM	2026/3	90,000	2025/3	<ul style="list-style-type: none"> <li>Increased production in China to meet domestic demand</li> <li>Active use of next-generation methanol as a raw material</li> <li>Develop new non-automotive applications/markets, such as medical applications</li> </ul>	16.0	78.0
		60,000	2026/3			
LCP	2025/3	5,000	2025/3	<ul style="list-style-type: none"> <li>Maintain top market share by further expanding sales to meet the growing demand for 5G millimeter wave compatibility</li> <li>New market expansion with 5G composite materials (hybrid with inorganic compounds)</li> </ul>	5.0	36.0
		5,000	In the planning stage			
COC	2024/3	20,000	2025/3	<ul style="list-style-type: none"> <li>Growing demand in the packaging and medical fields</li> <li>Expanding sales to EU countries by leveraging unique recyclability</li> </ul>	9.0	64.0
Total					30.0 (Initial plan 20.0)	178.0

\* Cumulative benefits (EBITDA) from start of operation

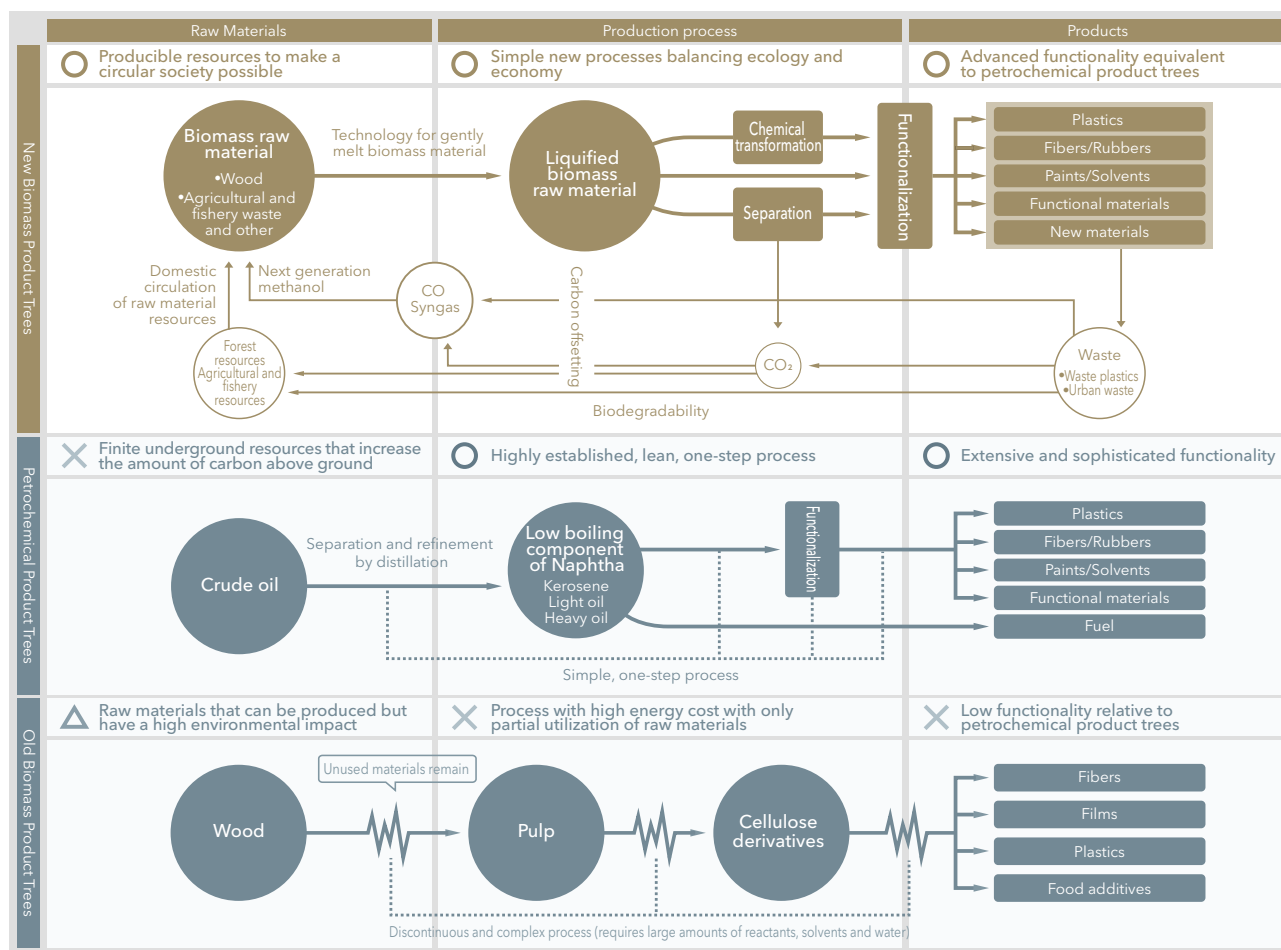
## Exploring Possibilities with Technology for Melting Wood

~A Pioneer in Biomass Chemistry, Daicel Aims to Introduce New Biomass Product Trees~

Since its foundation, Daicel has always handled wood resources and has been a pioneer in naturally derived chemical products. Even during the 1970s energy crisis, we were the first to start working on the C1 Chemistry (synthesizing non-petroleum-based organic compounds from one-carbon compounds such as carbon monoxide and methanol) project to quickly break away from the over-reliance on oil. In FY2021/3, with the Long-Term Vision to contribute to creating a circular society, we started working on the “Biomass Value Chain” concept. The creation of Biomass Value Chain is centered on “New Biomass Product Trees.”

In this page, we will present the overall picture of “New Biomass Product Trees” and will introduce research and development processes to commercialize the “technology for melting wood” that will accompany the realization of this concept.

### New Biomass Product Trees Envisioned by Daicel



### As a Pioneer in Biomass Chemistry

Our main product, cellulose acetate, is environment-friendly because it is biodegradable and derived from wood. The process of manufacturing cellulose acetate, however, is not environment-friendly because the separation of cellulose from wood and its reaction and refinement requires a large amount of energy. In order to solve this issue, we conducted joint research with universities and developed a new technology of gently melting wood. Our melting technology, developed by leveraging our expertise and knowledge in biomass chemistry accumulated over the years, not only saves energy in the manufacturing process but also makes it possible to achieve superior quality cellulose products with high functionality. Apart from cellulose, this technology also makes it possible to gently melt other elements contained in wood (lignin, hemicellulose), which have not been utilized so far. With this technology, these elements can be separated in an easy-to-utilize state and can be chemically modified to create new elements with unprecedented functions. In addition to accelerating our research and development in melting technology, we will also pursue the potential of biomass materials to create a new line of biomass products for a wide range of fields to develop a “New Biomass Product Trees” that will replace and complement petrochemical products.

**Pick Up!****Potential of “MoCA,” a New Molecular Cellulose Assembly, with Technology for Melting Wood**

Through our joint research with Kyoto University, we have developed a new technology for selectively melting the lignin and hemicellulose contained in wood and separating the cellulose. Compared to conventional technologies used to separate cellulose (such as pulping under high temperature and high pressure conditions), our technology can achieve cellulose separation with a much more simple process under mild conditions and under conditions that facilitate shape adjustment and chemical modification (high functionality). Separated cellulose molecules exist in fine aggregates and are light in weight with high elasticity and high strength. Moreover, cellulose can be chemically modified and used in various functions. The core technology involves controlling the structure of cellulose (molecular assembly state and chemical structure) by adjusting the chemical reaction conditions of wood to express the target functions. This new material is named MoCA (Molecular Cellulose Assembly). We are currently in the testing phase for mass production, conducting scale-up prototyping and evaluating practical application with a view toward use in high-performance filter materials, reinforcement materials and binder applications.



Wood powder



MoCA: New material separated from wood powder

**VOICE****Hiroyuki Matsumura**

Principal Researcher  
Technical R&D Institute  
Biomass Innovation Center

In recent years, refined cellulose (e.g. microfibrillated cellulose and cellulose nanofiber) has garnered attention due to its high functionality and superiority as a resource, and a lot of research and development is being conducted surrounding it. The common challenge with regard to MoCA and refined cellulose is to establish applications that are appropriate for their cost and functions. Daicel has cultivated a wealth of cellulose-handling technology, knowledge and connections with its customers over the years. We further hope to combine our advanced research findings from our joint research on catalytic technology with Kyoto University and on cellulose homogenous reaction technology with Kanazawa University to leverage our strengths in further improving the functionality, reducing costs and working on practical application of the technology.

**Pick Up!****Cellulose Absorbents to Circulate Scarce Resources**

In recent years, the demand for rare metals used in semiconductors and batteries has been on the rise owing to the economic growth of developing countries and the popularity of electric vehicles for achieving a decarbonized society. In order to secure a stable supply of these resources, metal recycling, which involves recovering rare metals from discarded electronics, has been gaining attention.

Leveraging its specialized expertise in cellulose, Daicel is utilizing its knowledge and molecular designing technology to develop a new cellulose material that can effectively absorb and recover gold ions from discarded electronic boards and discarded plating solutions. This technology takes advantage of the properties of cellulose polymers, which can be easily chemically modified, to selectively absorb the target metal. In addition to gold ions, we are also conducting research on absorption of other rare metals such as platinum, copper and palladium in collaboration with Kanazawa University, with focus on practical applications such as recovery of rare metals from urban mines and restoration of contaminated soil.



Palladium extracted by metal absorbents

**Pick Up!****New Manufacturing Method for Cellulose Derivatives**

The cellulose is a natural polymer that is difficult to melt. In the past, unreacted raw materials would remain even after a long reaction process, and byproducts and thermally degraded products were generated. As a result, the refining process to remove impurities would be long, consuming a lot of energy. By utilizing the homogenous melting technology for cellulose researched by Kanazawa University, we are developing a process to melt and react pulp, of which cellulose is the main component, in an environment-friendly manner. With the homogenous melting technology, pulp can be melted without any irregularities, yielding liquid cellulose that easily reacts with other substances. Since this cellulose reaction is highly viscous and exothermic, a twin-screw extruder is used as the equipment because it excels in heat removal and allows continuous mixing of substances with high viscosity.

This combination of technology and equipment makes it possible to shorten the time and save energy in a series of processes from cellulose melting to reaction. At present, the combined research using the above technology and the twin-screw extruder is in the implementation stage. We aim to use this new method to increase the competitiveness of Daicel's existing products and create new high value added products.



Twin-screw extruder with excellent performance in mixing high-viscosity substances and heat removal

# Daicel Group's Challenge to Achieve Carbon Neutral

~Establishing innovative technologies and realizing manufacturing that is both ecological and economical~

The chemical industry provides beneficial materials that also contribute to reduction of environmental impact; however, the manufacturing processes of these materials require a lot of energy. The Daicel Group has taken this challenge head-on and is working on creating highly effective solutions that will not only reduce the environmental impact of the manufacturing processes but will also help in achieving carbon neutrality.

In this page, we will introduce the Daicel Group's initiatives being implemented from three angles, reducing costs, improving productivity and enhancing competitiveness as a manufacturing company with a view toward achieving manufacturing that is economical as well as ecological, while at the same time reducing its environmental impact.

## Medium- and Long-Term Reduction Targets for GHG Emissions

The Daicel Group has set a medium- and long-term reduction targets in line with the standard of SBT\*1.5°C.

**FY2051/3: Achieve carbon neutrality; Scope: 1, 2, 3 of the Daicel Group**

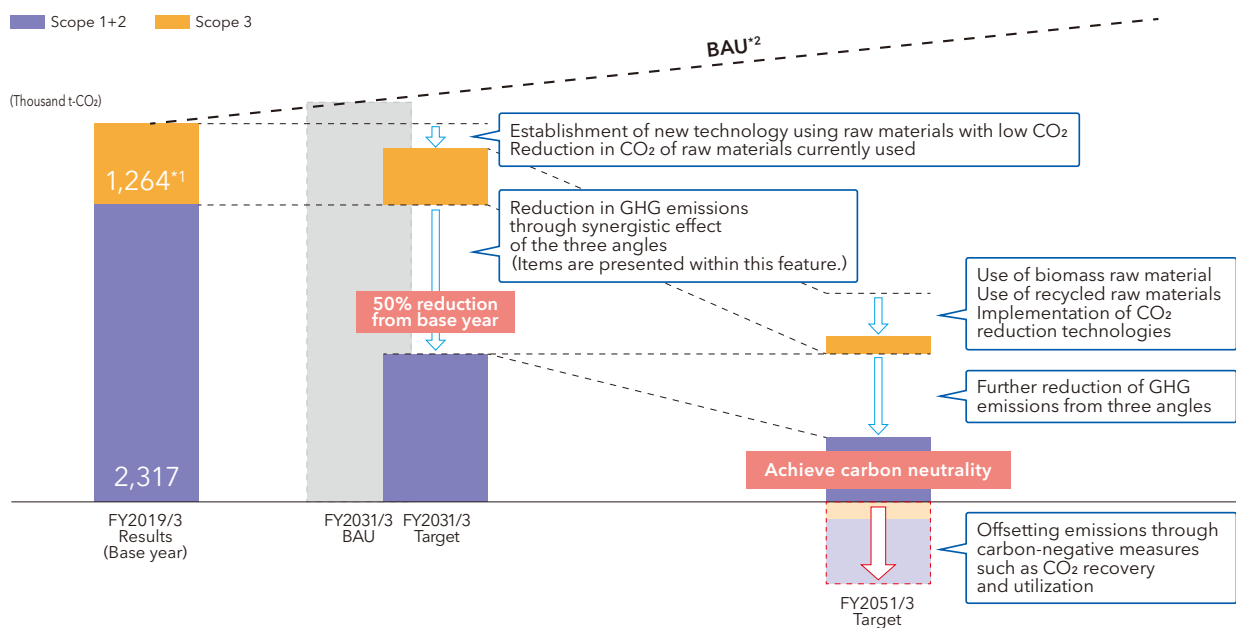
**FY2031/3: 50% reduction in GHG emissions (compared to FY2019/3); Scope: 1, 2 of the Daicel Group**

\* Science Based Targets: Goal setting consistent with science

## Approach and Roadmap for Achieving Carbon Neutrality

Over the years, the Daicel Group has been working toward reducing the use of energy and cutting down GHG emissions from three angles (See the next page for details). To achieve the medium and long-term reduction targets, we have employed three angles to identify the items that will contribute to reduction of GHG emissions. We have calculated the specific reductions and have begun creating a roadmap. Although the individual items and reductions are undisclosed, we will start with the most feasible items and move on to the implementation, taking into account the return on investment. Some of the reduction items include technologies and materials that are still under development. We expect to achieve our medium- and long-term targets by putting them to use steadily.

### Roadmap



\*1 Since the calculations for Scope 3 were started from FY2020/3, we have tentatively shown the results for FY2020/3. We are working on gradually expanding the categories and boundaries in Scope 3 calculations.

\*2 Business As Usual: GHG emissions without additional measures

## Reduction of GHG Emissions from Three Angles

### Angle①

Reduction in GHG emissions in the current production processes

Data on factory operations (including status of energy use such as heat balance) is collected through DAICEL Production Innovation to visualize the wastage and loss in the use of energy and eliminate these thoroughly. [P.29](#)

### Angle②

Reduction in GHG emissions in innovative technology

Once the wastage and loss in the use of energy in the current production process is eliminated, we implement innovative technology to significantly reduce energy use by reusing low-temperature exhaust heat, which could not be utilized earlier, and by changing the manufacturing method to reduce the distillation process, which consumes a large amount of energy. [P.30-31](#)

#### POINT

The use of detailed data on factory operations visualized through DAICEL Production Innovation makes it possible to identify points for improvement, study innovative technologies and simulate the effects of their introduction with a high level of accuracy.

Repetition of Angles ① and ②

With the equipment and method employing the new technology implemented in [Angle②](#), the wastage and loss in the use of energy of [Angle①](#) are identified and reduced. We then repeat [Angle①](#) and [Angle②](#) by applying the innovative technologies implemented as per [Angle②](#) to the newly identified points of improvement. We continue to improve the level of our efforts, while creating manufacturing processes that minimize use of energy.

### Angle③

Reduction in GHG emissions in the energy supply divisions

By minimizing energy use through [Angle①](#) and [Angle②](#), eliminating excess energy capacity in energy supply facilities and downsizing them as much as possible, GHG emissions can be significantly decreased. [P.32](#)

## Initiatives for Reduction of GHG Emissions

### Angle①

#### Reduction in GHG emissions in the current production processes

The main sources of power for our chemical plants are steam and electricity. In order to use these energies in the current production processes without any wastage, we are expanding the scope of overall optimization from an energy perspective based on DAICEL Production Innovation.

#### DAICEL Production Innovation Eliminating wastage and loss in factory operations, contributing to stability of production, standardization of high quality operations and DX

Established in FY2001/3, DAICEL Production Innovation begins with a comprehensive review of a series of operations related to safety, stability, quality and costs in the factory, then thoroughly eliminating production loss caused by wastage and troubles, and establishing a standardized operation flow with no wastage and loss. In that regard, we collected approximately 8.4 million pieces of operation-related know-how in the minds of skilled operators, visualized this information and incorporated it in the operation support system. As this system enables anyone to perform high-quality factory operations, it leads to fewer production troubles and more stable operations that are energy efficient and cost-competitive. We have established this system at our Aboshi, Ohtake and Arai plants and are in the process of establishing it at Polyplastics' Fuji Plant. [P.36 Sustainable People](#)

#### Grassroots Energy-Saving Utilizing the data visualized through DAICEL Production Innovation to implement energy saving and cost reduction and achieve horizontal development

We use the energy-related data obtained through DAICEL Production Innovation to understand the areas where wastage and loss occurs and its impact, and perform steady energy conservation activities based on the findings. The "Plant Energy-Saving Action Team" deployed at each plant implements these activities. These activities are horizontally implemented across different plants of the Group to achieve maximum effect.

## VOICE



(Left)  
**Norihide Horikawa**  
 Manager  
 Autonomous Promotion  
 Group, Technical Department  
 Himeji Production Sector,  
 Aboshi Plant

(Right)  
**Kosuke Terai**  
 Autonomous Promotion  
 Group, Technical Department  
 Himeji Production Sector,  
 Aboshi Plant

In FY2023/3, we worked on energy conservation at the carbon monoxide plant, which is a raw material for acetic acid at the Aboshi Plant. Focusing on the deterioration seen in the data on the usage of raw material air, we conducted an on-site verification based on equipment modulation and operational data accumulated with skilled operators and equipment managing department. It was found that a small amount of air was leaking from the control valve. The load on the air compressor was greater than expected to compensate for the volume of air required in the next process. Replacing the valve with a proper one eliminated air leakage and achieved energy saving in the air compressor (Reduction in GHG emissions: Approximately 202 tonnes per year; Cost reduction benefit: Approximately 16 million yen per year). We will continue to promote the use of DAICEL Production Innovation and its more evolved version Autonomous Production System by utilizing the operation-related know-how and vast amount of data accumulated from skilled operators to achieve environment-friendly plant operation.

### Autonomous Production System Using AI to assist in deriving optimal solutions for plant operation

In FY2021/3, we developed the Autonomous Production System, an evolved version of DAICEL Production Innovation. Developed using AI, this system has two applications—one which further improves productivity and one which further stabilizes production (Plant Capacity Maximizer and Advanced Prediction System). This makes it possible to achieve highly efficient operational support that pursues quality and cost more than ever before. Additionally, use of AI has made it easier to introduce DAICEL Production Innovation through dramatically streamlining the visualization of skilled operator's know-how, which is indispensable to the introduction. By introducing this system in the companies in our supply chain, we can achieve synchronization of information throughout the organization and realize a virtual company that has an expanded optimal range of energy use. This system is currently operational at some of our plants in Aboshi and Ohtake.

P.36 Autonomous Production System P.23 Virtual Company

## Angle②

## Reduction in GHG emissions in innovative technology

From a different viewpoint, the operation-related skills of the operators extracted during the introduction of the DAICEL Production Innovation in [Angle①](#) are points to be improved which cannot be covered by equipment design and rely on human know-how. Our basic approach for process innovation is identifying such points for improvement in the equipment and working to solve them by enhancing process technologies.

It is said that, generally, the chemical industry consumes approximately 40% of energy in the recovery process. The recovery process is the process of removing impurities resulting from the process of manufacturing the target product and recovering the solvent by refining it through distillation. While this process uses high-temperature thermal energy, it also generates a large amount of low-temperature exhaust heat, which is wasted without being reused. Therefore, the key to energy saving is developing technology to efficiently utilize and recover low-temperature exhaust heat energy, although it is considered difficult. We have developed a Modified Petlyuk distillation process and set up VRC Technology, which enable us to utilize and recover low-temperature exhaust heat and reduce over 30% of energy required in the recovery process.

### Modified Petlyuk Distillation Process Challenging improvements to existing technologies to increase efficient use of thermal energy without significant investment

Petlyuk distillation is widely recognized as an energy-saving technology and has been put into practical application as a dividing-wall column (DWC). The DWC is a revolutionary technology that can reduce the number of distillation columns, but it is difficult to adjust its operating conditions and it takes a considerable capital investment to introduce a DWC as it requires the construction of a new dedicated facility. To overcome these disadvantages, we took on the challenge of improving the basic Petlyuk distillation technology through joint research with universities, and have succeeded in establishing and implementing a modified Petlyuk distillation process that can be introduced to existing plants without major facility modifications and that utilizes the thermal energy used during distillation more effectively.

### Vapor Recompression (VRC) Technology Implementing basic technology in the distillation process of organic solvent systems to realize utilization of waste heat

VRC technology compresses the exhaust heat from low-temperature vapor and turns it into high-temperature vapor to recover heat. This technology is widely used for heat recovery of water vapor. Through joint efforts with equipment manufacturer, Daicel has become the first in the world to successfully implement VRC technology in the distillation process of organic solvents.

### Microfluidic Device Technology Precise reaction control that does not generate impurities and eliminates the need for separation and recovery process

We are in the process of developing microfluidic device technology that enables ideal chemical reaction control and does not produce impurities, thereby eliminating the need for the separation and recovery process that takes large amounts of energy.

In a chemical plant, a large amount of substances are reacted at once in a large reactor to increase production efficiency. This results in uneven temperature and concentration in the reactor, generating impurities (unreacted substances and by-products). The separation and recovery process is established to remove these impurities. On the other hand, a microfluidic device enables chemical operations such as mixing, reaction, and purification on a micro scale in channels of several hundred micrometers on a glass substrate the size of a business card. The narrowness of the ultrafine channels allows instantaneous mixing, has excellent heat removal capability and minimizes variations in temperature and concentration distribution. This enables substances to react evenly at the molecular level under homogenous temperature and concentration conditions. Since this generates no impurities, the separation and recovery process itself is unnecessary. This achieves a large amount of energy savings as well as shortened manufacturing process and improved product quality. Additionally, by utilizing the standardization method of operational know-how through DAICEL Production Innovation, the manufacturing process of a chemical plant can be reduced to unit operations that cannot be further disassembled, and then these unit operations can be modularized. Combinations of approximately 30 different modules can be used for the production of a wide range of chemical products. Parallelizing this will help achieve a sustainable next-generation production plant that can mass-produce products using the same manufacturing process established in the research area, while at the same time saving space, energy, and resources, and producing only the necessary amount of the necessary product.

To achieve this breakthrough process innovation, we are applying our proprietary technology and conducting R&D in collaboration with National Tsing Hua University in Taiwan and other organizations, with the aim of implementing the technology in the resist polymer manufacturing plant at the Arai Plant in FY2025/3.

## Features of Microfluidic Device Plant

### ① Micro-miniaturization of production facility

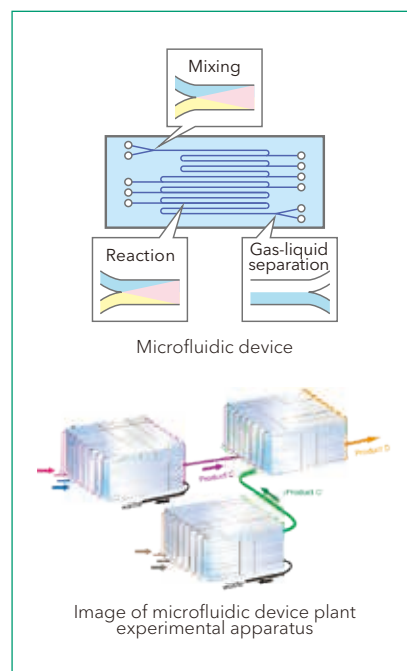
Glass substrates the size of a business card are combined together to form a single unit. Combinations of glass substrate channel designs can be used for all kinds of chemical products and production volume can be increased by parallelizing one unit. Moreover, laboratory results can be reproduced for industrialization simply by increasing the number of glass substrates.

### ② Energy saving

There is no unevenness in temperature and pressure in ultra-fine channels, allowing pinpoint and speedy generation of targeted reactions. Since wasteful reactions are unlikely to occur, the purity of the product is high and there is no need for post-processing to separate out the excess material. The technology to be adopted at the resist polymer manufacturing plant of Arai plant is expected to reduce both energy consumption and CO<sub>2</sub> emissions by more than 90%.

### ③ Liberalization of production facility

Since this technology allows building ultra-compact, energy-saving, low-cost facilities, it dramatically increases the flexibility of production sites. Locating production sites where raw materials are available facilitates local production for local consumption and greatly reduces transportation costs and energy.



## VOICE



**Kazuhito Takeda**

Department Manager  
Process Innovation Department  
Process Technology Division  
Production Management Headquarters

I believe realizing chemical plants which can utilize microfluidic device technology will significantly change the fundamentals of monozukuri manufacturing. We would like to contribute to carbon neutrality by realizing a plant that can manufacture only the amount needed at the place needed, and implementing the thinking of SDGs. While there are challenges, all the project members are committed to advancing research and development for early implementation. First of all, we would like to achieve this implementation and further develop this technology effectively by making the results widely known both inside and outside the company to see what can be done with the microfluidic device plant.

## Angle③

## Reduction in GHG emissions in the energy supply divisions

Chemical plants increase and decrease the amount of energy used based on production amount and products. Since these plants are in continuous operation, stopping and restarting midway temporarily require a large amount of energy. For this reason, it is a standard practice in chemical plants to design the capacity of energy supply facilities to be larger than that of energy-using facilities. Consequently, by minimizing energy use from [Angle①](#) and [Angle②](#), the excess capacity of energy supply facilities can be reduced to the greatest degree and downsizing as much as possible, GHG emissions can be significantly decreased.

- Downsizing and optimal operation of boiler equipment depending on energy use
- Selecting energy source material in consideration of cost and GHG emissions
- Improving the tire derived fuel mixture ratio of boiler equipment

## Toward Carbon Neutrality

While continuing to reduce GHG emissions from three angles, more technical breakthroughs are needed in order to realize carbon neutrality or carbon negative. The Group has sought to develop technologies to reduce CO<sub>2</sub> into CO and recycle it as a raw material.

### Ultra Reduction Using Sunlight by Nanodiamonds Continuous semi-permanent breakdown of CO<sub>2</sub> using only sunlight and converting it into a raw material

Nanodiamonds are hard, chemically stable ultrafine particles 3-5 nanometers, and have unique characteristics, such as they do not react to acids or alkalis. Daicel has generated nanodiamonds by a method called the detonation method, which utilizes engineering knowledge of explosives developed in the manufacturing technology of inflators for airbags. We have developed the technology to generate nanodiamonds with extremely high efficiency by the detonation method. In addition, we have succeeded in establishing technology that decomposes CO<sub>2</sub> using only sunlight.

CO<sub>2</sub> reduction technologies up to now have required large amounts of electricity to break down CO<sub>2</sub>, and to produce that electricity, CO<sub>2</sub> was generated. However, we have demonstrated that our nanodiamonds can continue to decompose CO<sub>2</sub> into carbon monoxide and oxygen with high efficiency due to the hydrated electrons generated in the surrounding space simply by irradiating sunlight. Nanodiamonds continue to react semi-permanently, and do not degrade due to their chemical stability. Furthermore, nanodiamonds can decompose H<sub>2</sub>O into hydrogen and oxygen. So if methanol can be synthesized from the generated hydrogen and carbon monoxide, this can be reused as a main raw material for the Group and a highly competitive cyclic structure can be established.

## VOICE



**Taro Yoshikawa**

Kanazawa University  
Nanomaterials Research Institute  
Project Associate Professor  
Innovation and Business  
Development Headquarters  
Business Development Center

Since FY2013/3, the company has carried out research and development of nanodiamonds with both inhouse and external partners. As a result, we have acquired a variety of world-leading technologies including generation technology by the detonation method. We are also working to implement ultra reduction using sunlight technology by connecting the knowledge and technology we have accumulated up to now. Currently, verification tests at the laboratory level have been completed, now we are preparing pilot-scale verification tests.

Most conventional CO<sub>2</sub> reduction technologies focus only on the catalyst and system performance. However, the real value is in how much carbon negative can actually be achieved by the overall technology which considers catalyst life and the frequency of system maintenance. If the catalyst life is short, the catalyst will be more frequently produced and disposed of, which would also be a source of CO<sub>2</sub> generation. A nanodiamond catalyst using highly productive detonation method, which is non-degradable and semi-permanent, would lead to a fundamental solution in the reduction of CO<sub>2</sub> emissions.

## Information Disclosure in Line with TCFD Recommendations

The Daicel Group has made progress in its response in accordance with the TCFD recommendations endorsed in November 2021 and has carried out information disclosure.



### Governance

Discussions and management are carried out at the management level in the Sustainable Management Committee. [P.20 Sustainable Management System](#)



## Strategy

In line with the TCFD recommendations, from FY2023/3 the Group has begun conducting scenario analyses assuming a temperature rises of less than 1.5°C/2°C and 4°C with a timeline of 2030. These scenario analyses largely reference the International Energy Agency and the Intergovernmental Panel on Climate Change. The following procedures are carried out.

**Step 1** Set the scope of a scenario analysis

**Step 4** Financially evaluate each business

**Step 2** List the risks and opportunities presented by climate change for each business

**Step 5** Summarize climate change impacts and countermeasures for the entire Group

**Step 3** Create a business scenario according to each business' external scenario and re-evaluate the magnitude of those risks and opportunities

In FY2023/3, we conducted a scenario analysis for our Engineering Plastics Business (Polyplastics Co., Ltd.), which is the driving force of the Group.

Going forward, we will target the acetyls business (Smart and Materials Businesses) with a focus on cellulose acetate as well as the Safety Business, conducting scenario analyses in turn and consolidating the risks and opportunities of climate change for the Group. Furthermore, a financial impact assessment will be performed for each risk and opportunity.

[PDF](https://www.polycsr.com/en/assets/pdf/tcfd.pdf) Polyplastics Scenario Analysis Results <https://www.polycsr.com/en/assets/pdf/tcfd.pdf>

## Risk Management

The Risk Management Committee has overseen and promoted all aspects of risk management of the Company and its Group companies. Furthermore, the Group regards climate change as a major risk in sustainable management, and risk assessment, response and confirmation of the implementation status are carried out under the management system led by the Risk Management Committee. Such important issues are considered in detail by the Sustainable Management Committee.

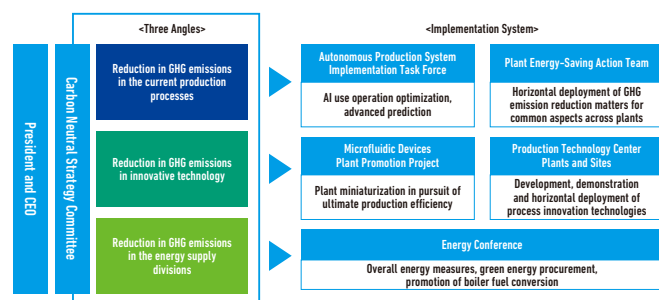
[PDF](https://www.daicel.com/en/sustainability/governance/risk-management.html) Risk Management <https://www.daicel.com/en/sustainability/governance/risk-management.html>

## Metrics and Targets

The Group has listed Response to Climate Change as one of its 15 key sustainability issues (materiality), and has set GHG emission reduction rates as a KPI. We have also set KPIs for our materiality issues of Provide Environment-Friendly Materials and Technology and Contribute to the Development of a Circular Society. Further discussions will be held on products and services that contribute to a low-carbon economy, and we will consider setting better indicators and targets. [P.21](#) List of Materiality

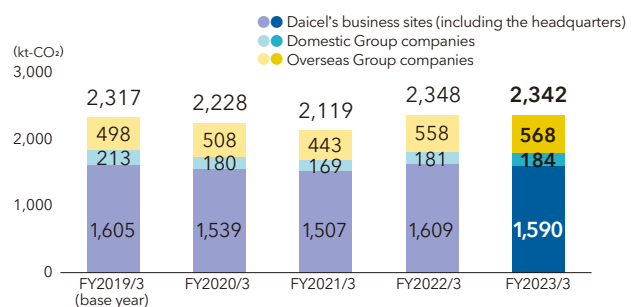
## Promotion System for GHG Emissions Reductions and FY2023/3 Results

The Carbon Neutral Strategy Committee has been established under the direct control of the President and CEO to promote energy conservation and GHG emissions reduction in the Group. The Committee is chaired by the officer in charge of the Production Management Headquarter and members include representatives from production, energy supply and other corporate divisions in Japan. It strives to construct a circular process that is in harmony with the global environment from the three angles introduced on P.29. In addition, introduction of internal carbon pricing has been considered in order to develop and execute appropriate investment plans which can achieve our medium- and long-term targets.



The Daicel Group's GHG emissions for FY2023/3 decreased by 0.3% year-on-year to 2,342 kt-CO<sub>2</sub> due to ongoing energy-saving initiatives such as improving the tire-derived fuel ratio at the Ohtake Plant, despite increased production due to demand recovery and the trial operation of a large new plant.

## GHG Emissions (Scope 1, 2)



(Note) Environmental data for each fiscal year covers the period from April to March in principle. However, for overseas subsidiaries excepting the Polyplastics Group, the reporting period for environmental data is from January to December.

## Implementation of “People-Centered Management”

The Group has set the realization of a sustainable society as its Long-Term Vision. The driving force behind this is each and every employee of the Group. We have sought to create a system based on “people-centered management,” where employees can gain a sense of accomplishment and can work in a comfortable environment. By setting “people-centered management” at the core, we have been working to reform the personnel system, working environment, and work style in order to become a company where all our diverse employees can grow by establishing their own presence with a sense of fulfillment.

### Daicel Group Human Resources Policy

#### Sustainable People

**We promote “People-Centered Management” that enables all our diverse employees to grow while establishing their own presence and achieving fulfillment.**

I will hone my skills and mind, achieve self-actualization by taking advantage of the opportunities at the company, and increase my happiness.

I will work creatively together with my teammates and increase our happiness.

I will also create and provide value, contribute to a more prosperous society, and increase the happiness of all.

#### The Human Resources System Promotes Autonomous Career Choices and Challenges

The Daicel Group has sought to reform and manage its organizational structure in order for employees to take greater initiative and challenge themselves. Employees gain experience by autonomously choosing a career and proactively taking on challenges, and increasing their own expertise and strengths. The Company then appropriately evaluates the attitude and success of each employee. Only by repeating this cycle can the strengths and creativity of each employee be developed to enhance their “individual power,” enabling them to fully demonstrate their abilities. This in turn, improves the competitiveness of the Company. The following has been set as the Company’s basic concept. The Company has reviewed its personnel system for leadership positions (managers) in FY2022/3 and its human resources system (excluding leadership positions) in FY2023/3, and eliminated age-based pay as of April 2023.

Adoption of a multiple-track job grade system	<ul style="list-style-type: none"> <li>• Enable multi-track career planning by shifting from the generalist-oriented career development of the past to specialist/management career options</li> <li>• Clarify abilities to be developed according to individual aptitude</li> </ul>
Elimination of seniority	<ul style="list-style-type: none"> <li>• Abolish number of years of experience as a condition for promotion</li> <li>• Enable diverse career development</li> </ul>
Linking appointments to compensation	<ul style="list-style-type: none"> <li>• Clarify responsibilities and authority of each role based on a job-grade system</li> <li>• Create a link between roles and compensation to realize a system in which performance is rewarded</li> </ul>
Establishment of a restricted stock compensation system for employees	<ul style="list-style-type: none"> <li>• Encourage employees to contribute greatly to the success of the business</li> <li>• Improve lifetime wages</li> </ul>

In addition, the Company has developed a system of in-house recruitment system and re-launched it as the Career Challenge System, so employees can autonomously make career choices and accept challenges. This system differs from a general personnel transfer by allowing the employees to apply for positions in departments open to them and challenge a new career path. In April 2023, Daicel established a system (Self Career Dock) for employees to proactively draw and choose their own career path at Daicel, and has established a Career Support Center as a contact point for employee consultation.

#### VOICE



**Ippei Kinuta**  
Senior Manager  
H. R. Development Team / Career Support Center, Human Resources Division, Corporate Support Headquarters

In Daicel, careers are not handed out by the Company, but rather, they are created and chosen by the employees themselves through conversation with their supervisors. For some employees, such as those who have only been with the Company for a short period of time, may find it difficult to think on their own. The Career Support Center is an organization to support these employees develop their own career. Through age-specific career seminars and career interviews, employees are helped to consider what they would like to do at Daicel and what kind of career they would like to build. This is then connected to the activation of a person’s “individual strength,” such as skill development and further improvement of expertise. Career seminars began in 2021 for employees in their early 50s, and in 2022, the target was expanded to persons in their 40s and then to those in their early 30s. It has been an opportunity to think about self-realization and one’s own happiness through a career at Daicel.

## Diversity & Inclusion

### Recruitment and Activities of Expert Human Resources

Daicel proactively hires human resources with high expertise from outside of the Company to achieve its Long-Term Vision and Mid-Term Management Strategy. In particular, experienced managers who can immediately play an active role occupy 27.7% of all managerial positions (as of the end of March 2023), which is a significant increase from 15.6% five years ago (as of the end of March 2018). In order to accelerate shift to market-oriented businesses, we have increased human resources within the Company who have a deep understanding of specific industries and businesses, as well as a high level of expertise in accounting, law, digital technology, and other areas. We believe that the Company's competitiveness is enhanced when each of our diverse employees has a strong will to utilize his/her own knowledge and experience, and works creatively together as a team, instead of completing projects on their own.

#### VOICE



**Takeshi Ichikawa**  
IP Solution Group  
Intellectual Property Center

"Proactive IP (Intellectual Property)" is the slogan of Daicel's Intellectual Property Center. Our determination is to strengthen business through the use of our intellectual properties, not passively but by establishing our own initiatives. We consider how to connect "intellectual property" such as technology, design, and brand names to future business and implement it, by utilizing the expert knowledge and experience developed up to now. While this work is challenging, it is also very rewarding. When we look around the Company, many people in various departments are challenging something new. Regardless of whether the person is mid-career employee or not, the atmosphere is one that encourages challenges. Personally, I had only experienced being a player before joining the Company. But now I am enjoying my own growth as I take on the challenge of management as a team leader.

### System and Environment Development Where Various Employees Can Play Active Roles

The Company has set "Promote Diversity and Inclusion" as a materiality, and a "ratio of women in leadership positions (managers) (target of FY2026/3: 10% and higher)" and a "continued employment rate of persons with disabilities for more than three years (target of FY2026/3: maintain at least 95%)" as KPIs. To achieve these, an environment in which all of our diverse employees can play an active role is essential. Aiming to foster an organizational culture in which diverse employees can fully demonstrate their abilities, reforms to promote diversity and flexible work styles were initiated in FY2016/3 under the catchphrase "Diversity x Flexibility." We have improved the working environment, including encouraging remote working, improving the rate of use of paid vacation, and providing a barrier-free workplaces. The ratio of women in leadership positions has increased from 1.6% in FY2016/3 to 4.9% in FY2023/3. The rate of employees with disabilities remaining with the Company for more than three years was 96% in FY2023/3. We will continue to promote the creation of systems and environments that allow each employee to maximize his/her own individuality and abilities, and encourage them to further accept challenges and grow.

	Introductory Phase (FY2016/3 FY2017/3 FY2018/3)	Understanding and Diffusion Phase (FY2019/3 FY2020/3)	New Normal (Reform Phase) (FY2021/3 FY2022/3 FY2023/3~)
System and Awareness Reform	FY2017/3 Five days paid childcare leave FY2017/3 Started to encourage employees to take paid vacation time FY2018/3 Opening of the "Nadeshiko Seminar," women leader development training FY2018/3 Introduction of the "working from home" system (limited to employees who are raising children or provide caregiving)	FY2019/3 Promotion of male employees taking childcare leave FY2019/3 Shortened prescribed working hours for full-time workers (Shortened: 30 min/day) FY2019/3 Revision of the "working from home" system (expanded to all employees) FY2019/3 Introduction of satellite offices	FY2021/3 Introduction of working from home allowance FY2021/3 Partial elimination of working away from family FY2021/3 Introduction of a babysitter system FY2022/3 Introduction of an executive mentoring system (targeting selected female managers) FY2022/3 Introduction of the side job and dual-employment system FY2024/3 Introduction of same-sex partnership system
Infrastructure and Environment Development	FY2016/3 Introduction of free-address within the office FY2018/3 Attendance management using PC logs (managed at entrance and exit gate within the factory) FY2018/3 Reinforcing security of backbone systems (can be used outside the Company)	FY2020/3 Introduction of office casual wear	FY2021/3 Introduction of an electrical contract system FY2023/3 Barrier-free access to some workplace areas

# Realize Monozukuri Manufacturing Where People Can Work More Creatively and Increase Their Happiness

## DAICEL Production Innovation

DAICEL Production Innovation is sometimes viewed as “standardization of know-how accumulated through the operation of chemical plants.” However, at the heart of the matter is changing the way people work under the slogans “visualize,” “discontinue,” “change.”

- “Visualize”** We identify latent defects (waste, loss) using company-wide common standards, through an overhaul of operations, operator load analysis, and cost structure analysis.
- “Discontinue”** We create more time and energy to initiate reforms by implementing following actions. First, we unify the terms and centralize information so that we can eliminate complicated rereading and establish a system to ensure that the necessary information is available to those who need it, regardless of department. Next, we thoroughly correct wasteful operations, including useless meetings, and reduce the work load. As a reform to continue problem-free and stable plant operation, we clarify the decision-making process by veteran operators, organize it systematically and reflect it into the design of the production system.
- “Change”** Every operator can make decisions considering safety, quality, output and costs in the same way of veteran operators.

DAICEL Production Innovation established in 2000, has resulted in resource- and energy-efficiency, and high-quality plant operation. At the Aboshi Plant, we reduced total costs by 20% and tripled human productivity. In addition, by realizing decision-making based on highly reliable predictions, we could shift from a work style centered on reactive measures to a work style centered on preventive measures that is creative and rewarding.

## Autonomous Production System

The Autonomous Production System was developed in 2020 and has advanced DAICEL Production Innovation utilizing AI, encouraging ways to work more creatively. DAICEL Production Innovation promotes stable operation, and reduces serious quality issues. However, all of the know-how and skills gained from veteran operators could not be utilized. In order to utilize this know-how and derive operations that would lead to optimal operations that can further save energy, resources, and costs while pursuing high quality, complex, large calculations are needed. At the time, such calculations were difficult with the computer processing capability in 2000. However, the current Autonomous Production System is equipped with AI calculation processing through joint development with the University of Tokyo. After installation, the system will further improve productivity and stabilize quality, which will not only significantly reduce costs but also reduce operator workload. In addition, the AI system is based on the know-how of the worksite, and can expose gaps between actual performance and know-how by comparing the actual performance data. In other words, it is possible to expose know-how and knowledge that people could not recognized up to now. By promptly reflecting and utilizing this new know-how and knowledge, the system can achieve even higher monozukuri manufacturing, and create a cycle in which people and the system can continue to grow together. This innovation enables us to realize “proactive production” where thinking independently and proposing solutions in advance, rather than waiting until a customer request is received.

Furthermore, the Autonomous Production System was installed at the Aboshi Plant in FY2022/3 and partially at the cellulose acetate plant at the Ohtake Plant in FY2023/3, and has contributed to a savings of 0.8 billion yen in costs by FY2023/3. In 2024/3, the system will be introduced to other cellulose acetate plants, acetate tow, and raw material of acetic acid (carbon monoxide) plants. Implementation centering on domestic acetyl chains will proceed until FY2026/3. This is expected to contribute to a cost reduction benefit of approximately four billion yen and a significant reduction of on-site workloads.

### Key Points of the Autonomous Production System

#### ① Significant reduction in the time, from the detection of an abnormality to decision-making and action

The system grasps the real-time status of the manufacturing facility and detects abnormalities before they materialize, thus reducing the need for manual monitoring and predicting operational status and leading to a dramatic reduction of the workload for onsite workers. Furthermore, since the system presents the causes of the abnormality along with countermeasures, operators can respond before the situation reaches the stage that previously required executive decisions.

#### ② Support for taking the necessary actions to achieve production goals

Out of the many possibilities for improving plant operations, this system recognizes actions that are important to the production goals of each plant and presents only the essential alternatives, allowing operators to choose the optimal response.





**Fumihiro Miyoshi**  
Head of Monozukuri  
Production Innovation Center



**Daisuke Ishimoto**  
Division Manager of Autonomy Promotion Group  
Technical Department, Ohtake Plant



**Hiroharu Matsumoto**  
Manager of Cellulose Products  
Production Department, Ohtake Plant

## To Realize “Proactive Production”

In May 2017, “The Next Generation Production System Establishment Project” centering on technicians in their 30s was established. They thoroughly discussed the future ideal of monozukuri manufacturing, and established an Autonomous Production System to achieve “proactive production.” From FY2023/3, these members has been serving as the core in the implementation of the system at each plant. Mr. Miyoshi, head of the Monozukuri Production Innovation Center which oversees company-wide deployment of the system, Mr. Ishimoto, Division Manager of Autonomy Promotion Group, Technical Department which manages system implementation at Ohtake Plant, and Mr. Matsumoto, Manager in charge of Cellulose Production, Production Department, which oversees the implemented production line, discuss how Daicel’s monozukuri manufacturing has changed from various positions, and how their work has personally changed with the introduction of the system.

### ■ Changes in on-site manufacturing due to the adoption of the Autonomous Production System

**Ishimoto:** The Autonomous Production System is now able to incorporate into its programs all of the plant operation know-how of our predecessors that we have not been able to fully utilize up to now, thanks to the incorporation of AI. However, implementing a system does not mean that optimal operation can be achieved with a hands-off approach. There can be a gap between the optimal solution derived from the incorporated know-how and the actual on-site data. It is a painstaking process, but this verification is the very thing that clarifies the weak points of our manufacturing and the reaction logic that had not yet been established as a technology. The most important aspect of adopting this system is to work together with the on-site members to improve and grow our on-site capabilities.

**Matsumoto:** We are also beginning to see real on-site benefits. Through confronting the principles (cause-and-effect relationships) presented by AI objectively, without being bound by conventional wisdom, we were able to encourage the implementation of potentially promising ideas, which actually led to improved cellulose acetate usage. Without AI, even if we had an idea, we would have hesitated to test it on actual equipment because of the costs involved. I believe that Daicel’s manufacturing will grow stronger if operators have more and more opportunities to try out their own ideas using the Autonomous Production System.

**Miyoshi:** We have achieved term unification, thorough elimination of waste and loss, and stabilization of production through DAICEL Production Innovation, so there is less data that should not be seen, and I think one of our strengths is the high reliability of our data. By applying machine learning based on reliable data, only essential and latent points that need to be verified can be seen. On-site discussion

of these points clarifies necessary actions and improves manufacturing. If we take action and achieve results, I believe that being proactive will become the on-site norm. We believe that the results of the adoption of the system will become apparent at an accelerated pace.

**Matsumoto:** I think that in a few years the operator’s job will be much different. Currently, people monitor and detect irregularities in plant operation, but I believe that the system (AI) will learn the know-how for detecting these irregularities, and we will be able to leave some tasks to the system (AI) and spend our time on more creative work that only people can do.

### ■ Future development of the Autonomous Production System

**Matsumoto:** As we expand the scope of implementation to the product chain, the elements required for upstream processes have become clearer than ever. Currently, the Aboshi and Ohtake Plants are working to expand the supply capacity for acetate tow. The production department is working in unison to increase production by as much as one tonne, but it is difficult to achieve this by simply improving the acetate tow production process. Improvements are also needed in the upstream cellulose acetate production process. If the adoption of the Autonomous Production System allows products to be built in the upstream process in anticipation of the impact on the downstream process, further quality improvements can be expected in the downstream process. I feel that each and every operator has become more aware of how to create products of the quality required by the next process in the preceding process.

**Miyoshi:** The next process is, in other words, the user’s, or more specifically, the customer’s process. We are moving toward a market-oriented organization, starting from the needs of our customers, and this is the same at our production sites. Eventually, we aim to expand

the system beyond the boundaries of the Company to upstream companies and downstream companies that are our customers, to improve the quality and efficiency of not only our own product chain but also the supply chain as a whole. Until now, the Autonomous Production System has been implemented with the operational support of operators at the production site. Next, we will expand the system’s scope of support to the production planning and logistics domains to optimize the flow of products. In production planning and logistics, the flow of products is managed in lots, but in order to optimize the flow of products, it is first necessary to make the quantity per lot smaller and more flexible. To achieve this, it is important to serialize and automate the quality analysis that is performed on a lot-by-lot basis.

**Ishimoto:** In quality analysis by sampling, the smaller the lot unit, the greater the number of times it is performed, and the greater the workload on the operator, so it is important to make it continuous and automated. Shifting from “representative point management” by sampling to “continuous point management” utilizing in-line sensors<sup>1</sup> and soft sensors<sup>2</sup> not only eliminates the need for operators to perform sampling and analysis, it also eliminates shipping waiting time due to waiting for inspection, leading to shorter lead time and inventory reduction. In addition, smaller lot sizes allow us to respond in detail to customer requests for electronic materials and functional materials (which have high quality requirements), thereby strengthening our competitiveness. Market needs are constantly changing, but we want to be a site where we can respond to changes and co-create value by thinking on our own and collaborating with sales, procurement, purchasing, logistics departments, and customers.

\*1 In-line sensors: Sensors that can be installed in pipes or tanks for direct measurements

\*2 Soft sensors: Sensors that use measurable values to calculate and predict difficult-to-measure values in real time

## Medical / Healthcare

### Business Overview

The Life Sciences business includes the manufacture and sale of chiral columns (in which we have a large share of the global market) and separation services, which are used to analyze and acquire optical isomers in the development and manufacturing processes of pharmaceuticals. We are also working to expand our business domain into the biotechnology field. In the Healthcare business (Cosmetics and Health Foods), we aim to contribute to improving people's QOL\*, and are developing high-quality cosmetic ingredients, marine-biodegradable spherical cellulose acetate particle (BELLOCEA®), and unique functional food ingredients produced from natural ingredients through extraction and bioconversion technologies.

Main Businesses	Main Products
Life Sciences	Chiral columns, chiral reagents, separation services, analytical services, reagents for genetic analysis research, pharmaceutical additives, new drug delivery devices
Healthcare	Cosmetic ingredients (polyglycerols, spherical cellulose acetate particle (BELLOCEA®), etc.), functional food ingredients (equol, konjac ceramide, and urolithin, etc.)

\* QOL: Stands for Quality of Life and refers to not only physical wealth but also mental quality of life

### Our Business Environment

#### Opportunities

- Increased activity in the development of new gene medicines and vaccines, triggered by vaccines for the novel coronavirus
- Growth of the cosmetics market in Asia
- Growth of the functional health foods market due to increasing health consciousness

#### Risks

- Hollowing out of the domestic pharmaceutical and medical equipment industries due to the shift of pharmaceutical and medical equipment production sites to emerging countries and the shift of R&D and clinical trial sites to overseas locations
- Market entry of competitors and replacement with new ingredients in healthcare products

### Daicel's Strengths

#### 【Life Sciences】

A leading company in optical isomer separation technologies

Separation technology developed over many years since the commercialization of chiral (optical isomer) columns\* in 1982, and a global network of pharmaceutical companies and researchers

\* Chromatographic columns for separation of optical isomers (used for separation of active pharmaceutical components, etc.)

#### 【Life Sciences】

Special Medical Materials business

We promote business synergies through collaboration between medical businesses within the Group, such as Polyplastics' POM and COC (have superior functionality and are used as medical materials) and the Life Sciences SBU's Actranza™ Lab (a new needle-free drug delivery device)

#### 【Healthcare】

Unique manufacturing technology

In Cosmetics, it is possible to produce colorless, transparent polyglycerin with few byproducts and high water solubility. In Health Foods, we utilize our proprietary anaerobic fermentation technology\* to manufacture on an industrial scale intestinal metabolites that some people cannot produce in their body

\* Fermentation technology in the absence of oxygen

### Performance Targets, Capital Expenditures, Depreciation and Amortization, R&D

#### FY2023/3 Results

Net sales	Operating income
<b>16.6</b> billion yen	<b>1.3</b> billion yen

#### FY2026/3 Targets

Net sales	Operating income
<b>17.0</b> billion yen	<b>1.5</b> billion yen

#### Cumulative Total for FY2024/3 to FY2026/3 (Planned)

Capital expenditures	Depreciation and amortization	R&D
<b>7.0</b> billion yen	<b>3.5</b> billion yen	<b>8.2</b> billion yen

\* FY2023/3 results reflect the change in segmentation of cosmetic ingredients 1,3-BG (Medical/Healthcare to Materials) and new drug delivery device R&D functions (Safety to Medical/Healthcare).

## Growth Strategies

Main Businesses	Policies	Specific Measures
Life Sciences	Expand chiral separation business	<ul style="list-style-type: none"> <li>● Expand sales of chiral columns in growing overseas markets</li> <li>● Expand Separation Services and Analytical and Synthesis Services business in India and China</li> <li>● Strengthen marketing and develop new products in the Genetic Analysis business</li> </ul>
	Cultivate and strengthen new businesses	<ul style="list-style-type: none"> <li>● Accelerate commercialization of new drug delivery devices by leveraging market channels built through chiral columns. Also, expand and strengthen the Medical Materials business</li> </ul>
Healthcare	Expand sales by expanding appealing functions of existing products	<ul style="list-style-type: none"> <li>● Strengthen marketing (evidence marketing) of konjac ceramide for brain function improvement and urolithin as a well-aging ingredient, using the results of human clinical trials</li> <li>● Expand business through collaboration with strategic partners</li> </ul>
	Create new ingredients	<ul style="list-style-type: none"> <li>● Launch and expand business of spherical cellulose acetate particle (BELLOCEA®) in grades compliant with European regulations (OECD301F certification)</li> <li>● Expanding our lineup of health food ingredients with a focus on intestinal metabolites</li> </ul>

### Key points of growth strategy

## Steady Growth in India by Responding to Customer Needs

The Group operates its Optical Isomer Separation business, focused on chiral columns, top share of global market, in five regions around the world: Japan, the U.S., Europe, China, and India. One of these, the India-based Daicel Chiral Technologies (India) Pvt. Ltd. (hereinafter "DCTI") has experienced a compound annual growth rate (CAGR) of more than 20% over the past five years. This is due to the growth of the generic drug market in India and the expansion of the Service business to meet the needs of client pharmaceutical companies, which accounts for approximately 70% of DCTI's sales revenue. DCTI has many employees who come from pharmaceutical companies, and by actively utilizing their knowledge, expertise, and ideas, DCTI has expanded their Services business to meet the needs of their clients. Currently, they offer three types of services to pharmaceutical companies: purification (separation) services to isolate and purify compounds required by customers; analytical services to develop and validate<sup>\*1</sup> analytical methods and perform various analytical tests such as IVBE studies<sup>\*2</sup> and E&L studies<sup>\*3</sup>; and synthesis services to synthesize stable isotope

labeled standards and impurity standards in response to customer requests. Each service is expanding target areas in not only low-molecular drugs but also mid-molecular drugs such as peptide drugs and nucleic acid drugs, which are expected to be next-generation drugs. Behind the strong customer trust in DCTI's Service business is the Daicel brand developed through chiral columns, as well as the fact that GMP (control standards for production and quality) -compliant analytical services are provided at a facility certified by the U.S. FDA (Food and Drug Administration), which has significantly contributed to DCTI's growth.

We are determined to seize growth opportunities in the Indian generic drug market, which is expected to grow at an average annual rate of 5 to 6% (according to our research), and aim for further business growth by deploying the business model established by DCTI to our base in China, where investment in the pharmaceutical industry is continuing to expand.

### ● Exterior view of DCTI's headquarters building



### ● DCTI's laboratory



\*1 Analytical method validation: Validation aimed at assuring the validity, usefulness, and reproducibility of the analytical methods used

\*2 IVBE (In vitro bioequivalence) studies: A test to prove that drugs with the same active ingredients (e.g., original drugs and generic drugs) are bioequivalent

\*3 E&L studies (E&L "Extractables & Leachables" studies): Safety evaluation studies required when applying for approval of drug containers and packaging, medical devices, etc.

# Strategy by Business Segment

## Smart

### Business Overview

In the Display/Optical business, we manufacture and sell cellulose acetate for optical films (TAC), which has a high global market share, functional films suitable for various displays from smartphones and tablets to in-vehicle displays, and plastic lenses (optical lenses) for sensing applications that are highly heat-resistant, compact, and highly functional. The IC/Semiconductor business manufactures and sells high-performance photoresist materials, solvents for electronic materials, and silver nano ink used in semiconductor and display manufacturing processes. In addition, we are also working on practical implementation demonstrations of various sensors using organic semiconductors.

Main Businesses	Main Products
Display/Optical	Cellulose acetate for optical films (TAC), high-performance films, optical lenses
IC/Semiconductor	Photoresist materials, solvents for electronic materials, silver nano ink, organic semiconductors

### Our Business Environment

#### Opportunities

- Semiconductor market expansion due to the full-fledged arrival of the IoT, AI, and 5G era
- Expansion of the display market with the spread of new technologies such as high resolution, high durability, bendable and foldable, and curved surface structure
- Diversification of sensor technologies and creation of new markets and technologies in the electronics industry, such as the metaverse and autonomous driving

#### Risks

- In the semiconductor materials market, lower prices due to the emergence of overseas products, and restrictions on available markets due to intensifying trade friction between the U.S. and China
- Production contraction due to disruptions in the semiconductor supply chain caused by conflicts and other geopolitical factors
- Shrinking domestic market due to customers' overseas relocation of development and production sites

### Daicel's Strengths

#### Provide market-oriented solutions that meet customer and market needs

Providing the electronics market with a variety of solutions and value from materials to modular parts through a wide range of material design and production technologies, including synthesis, compounding, coating, printing, and resin molding

#### 【Display/Optical】

Addressing customer needs through meticulous functional design

We combine product specificity and price competitiveness for TAC, functional films, and optical lenses through functional design using materials and formulations that meet customer needs

#### 【IC/Semiconductor】

Continuation of stable supply and response to increasingly sophisticated demands

Possesses the technical capabilities and stable supply capacity to continuously meet the high level of quality requirements of the semiconductor industry. Based on the relationship of trust built through this track record, we can develop products in close contact with our customers and respond to new, increasingly sophisticated, requirements. In addition, mass production of organic semiconductors is currently being demonstrated for application to displays and sensors

### Performance Targets, Capital Expenditures, Depreciation and Amortization, R&D

#### FY2023/3 Results

Net sales	Operating income
<b>29.6</b> billion yen	<b>-0.6</b> billion yen

#### FY2026/3 Targets

Net sales	Operating income
<b>50.0</b> billion yen	<b>5.5</b> billion yen

#### Cumulative Total for FY2024/3 to FY2026/3 (Planned)

Capital expenditures	Depreciation and amortization	R&D
<b>12.0</b> billion yen	<b>10.5</b> billion yen	<b>11.5</b> billion yen



## Growth Strategies

Main Businesses	Policies	Specific Measures
Display/Optical	Strengthening TAC's profitability	<ul style="list-style-type: none"> <li>Expanded use of low LCA pulp* by improving TAC manufacturing process, and enhanced profitability by promoting discontinuance of cotton linters, quality improvement, inventory reduction, and cost reduction</li> <li>Expanded market share in the TAC film market by improving quality and taking advantage of wood pulp as a raw material</li> </ul>
	Making high-performance films multifunctional and expanding their business	<ul style="list-style-type: none"> <li>Accelerate development of materials and technologies by utilizing wet and dry coating technologies and clean rooms of Daicel Beyond Ltd.</li> <li>Accelerate collaboration with strategic partners</li> </ul>
	Optical Lens business expansion	<ul style="list-style-type: none"> <li>In addition to cutting-edge markets such as AR/VR devices, strengthen marketing in the existing plastic lens market by taking advantage of features such as high shape flexibility, high heat resistance, and low cost</li> </ul>
IC/ Semiconductor	Strengthen Semiconductor business in line with cutting-edge needs	<ul style="list-style-type: none"> <li>Increase production capacity of solvents for electronic materials, mainly for semiconductors, in FY2024/3. Expansion of lineup of high-purity, high-quality products</li> <li>Sales of photoresist materials for EUV applications expanded in addition to the mainstay immersion ArF applications. Plan to produce polymers for semiconductor resists using microfluidic devices in FY2025/3</li> </ul>
	Strengthen market penetration of electronic components and FPD materials	<ul style="list-style-type: none"> <li>Strengthen sales expansion of MLCC and color resist materials (solvents and polymers) overseas (China, South Korea, Taiwan)</li> <li>Strengthen marketing of silver nanomaterials for the printed electronics market by taking advantage of their features such as low-temperature sintering and low resistance</li> </ul>
	Mass production of organic semiconductors, commercialization of film sensors	<ul style="list-style-type: none"> <li>Providing various solutions by measuring temperature, vibration, acceleration, etc. using flexible, ultra-thin, highly sensitive, and low-cost sensors</li> </ul>

\* Low LCA pulp: Relatively low cost and low environmental impact pulp with less chemical processing (LCA=Life Cycle Assessment)

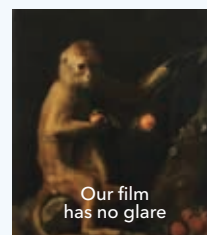
### Key points of growth strategy

## Daicel's AG Film Creates New Markets with Its Unique Technology

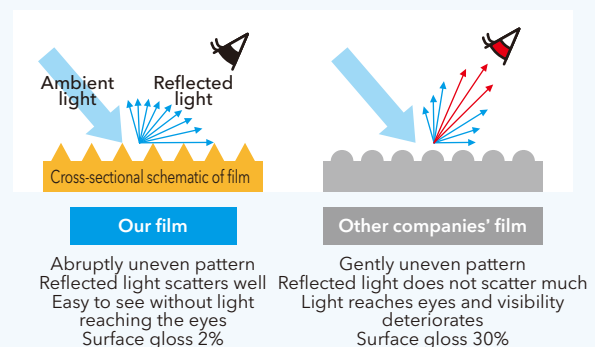
AG (anti-glare) film improves the visibility of display screens by reducing the glare caused by ambient light such as fluorescent lamps by diffusely reflecting incident light using uneven surfaces formed by special coating technology, etc. The surface gloss indicates the degree of scattering of light reflected on the film surface. While ordinary AG film reduces the glare caused by ambient light as the gloss value decreases, it has the disadvantage that the display becomes blurred white and the crispness of the black and white display deteriorates (contrast decreases). Our AG film can achieve both 2% low gloss and high contrast with our proprietary technology. Ordinary AG films use fine particles to form uneven surfaces, and the diffuse reflection of these particles is one of the causes of white blurring of the display and reduction of contrast. Our AG films use a proprietary technology called the phase separation coating technology (which does not use fine particles) to achieve high contrast. This functionality has been utilized to create a new market for matte displays, responding to new needs such as game monitors that require minimal glare of ambient light to enhance immersion, and monitors that require realistic representation of paintings and other artworks through their matte texture.

In addition to this AG film, Daicel has a lineup of films with a wide variety of functions, and we intend to utilize the wet and dry coating technologies of the new company, Daicel Beyond Ltd., to make our high-performance films more multifunctional and expand our business.

### Comparison of glare caused by ambient light (photos taken with the film on the same PC monitor)



### Special surface shape prevents glare



## Safety

### Business Overview

The main products of the Safety Business are automobile airbag inflators (gas generation devices), which protect the lives of occupants and pedestrians by inflating airbags within milliseconds after a collision. Our automobile airbag inflators are highly regarded as the key component of airbag systems. The instant-activation safety mechanism developed for inflators is named One Time Energy®, and is being used in applications other than airbags. Pyro-Fuse, which can safely and instantaneously interrupt high voltage and large currents in an emergency, is one example, and is expected to be deployed in various industries where automation is advancing due to the spread of electric vehicles and AI.

Main Businesses	Main Products
Mobility	Automobile airbag inflators
Industry	Pyro-Fuse, gas generators for seat belt pretensioners (PGG)

### Our Business Environment

#### Opportunities

- Recovery and growth of global automobile production
- Growing need for enhanced automotive safety in emerging countries (e.g., mandatory 6 airbags in India)
- The rise of Chinese electric vehicle manufacturers
- Advancement and proliferation of technologies such as electric vehicles and renewable energy aimed at achieving carbon neutrality

#### Risks

- Automotive supply chain disruptions due to semiconductor and other product shortages
- Changing function and performance needs as self-driving and other active safety technologies evolve
- Changes in the industry landscape due to the spread of electric vehicles

### Daicel's Strengths

#### Inflator technology accumulated over the years

After launching automobile airbag inflators in 1988, we commenced fully integrated production beginning with gas generant and have won people's trust and contributed to their safety ever since

#### Toyota Production System meets DAICEL Production Innovation

For excellent quality and productivity, we applied the Toyota Production System to our production system, which is based on the DAICEL Production Innovation methodology

#### Image Analysis System

We use an image analysis system developed together with Hitachi, Ltd. to realize product quality assurance by "all point management," instead of "representative management." Through adept quality control, we build strong trust-based relationships with customers

### Performance Targets, Capital Expenditures, Depreciation and Amortization, R&D

FY2023/3 Results		FY2026/3 Targets		Cumulative Total for FY2024/3 to FY2026/3 (Planned)		
Net sales	Operating income	Net sales	Operating income	Capital expenditures	Depreciation and amortization	R&D
84.0 billion yen	0.5 billion yen	111.0 billion yen	15.0 billion yen	29.0 billion yen	21.5 billion yen	16.5 billion yen

\* FY2023/3 results reflect the change in segmentation of new drug delivery device R&D functions (Safety to Medical/Healthcare).

## Growth Strategies

Main Businesses	Policies	Specific Measures
Mobility	Improve profitability by enhancing cost competitiveness	<ul style="list-style-type: none"> <li>● Cataloging of inflators (type integration)</li> <li>● Development of new composition gas generator and shift the production method</li> <li>● Consolidation of production bases to raise cost-competitiveness</li> <li>● Saving labor by automating the production line</li> <li>● Promote standardization and in-house production of production lines and local procurement</li> <li>● Shorten lead time and reduce equipment costs by promoting localization of line establishment</li> </ul>
	Expansion of market share (Target 25% global market share in FY2026/3)	<ul style="list-style-type: none"> <li>● Deepen cooperation with airbag module manufacturers</li> <li>● Strengthening relationships with Chinese companies</li> <li>● Tapping into demand in India (mandatory 6 airbags), established a production base in India</li> <li>● Development and launch of new catalog products in response to changing performance requirements</li> </ul>
Industry	Electric vehicles (EV) and new business creation outside the automotive market	<ul style="list-style-type: none"> <li>● Mass production of Pyro-Fuse for EVs, sales to Europe and the U.S.</li> <li>● Secure entry into the domestic market for Pyro-Fuse for EVs and strengthen marketing in the Chinese market, which is expected to expand</li> <li>● Strengthen marketing for applications outside the automotive market</li> </ul>
New Businesses	Identifying social issues from a global perspective and promptly commercializing them	<ul style="list-style-type: none"> <li>● Restructuring of global research and marketing structure</li> <li>● Incorporation of new technologies such as sensing and injury analysis through collaboration among companies, etc.</li> <li>● Promote development and early commercialization of devices that support daily safety</li> </ul>

### Key points of growth strategy

## One Time Energy® Contributes to the Safety of EVs Which Are Rapidly Becoming More Popular

Electric vehicles, which are projected to spread rapidly, are equipped with high-voltage batteries. The batteries used in EVs are projected to increase in capacity in proportion to the increase in cruising range and high-speed charging, and preventing electric shock to passengers and secondary disasters in the event of a traffic accident or breakdown is an important issue.

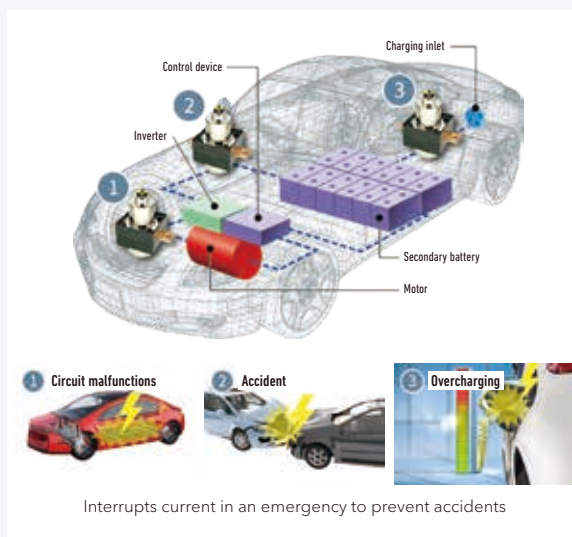
To solve it there is a rapidly growing need for current interrupters that can instantly and accurately interrupt circuits in an emergency and prevent damage by isolating the battery.

We develop and manufacture Pyro-Fuse, taking advantage of our technology that enables integrated manufacturing of airbag inflators including the initiator (ignition part including gas generator) mechanism and our high reliability with a total of 1 billion units shipped, and we have already started supplying them in the U.S. Currently, there is a need for current interrupting technology for even higher voltages and currents for EVs especially in Europe (which is a leading market), but product specifications have not been established for this market, which is in its infancy. Within a short development lead time, R&D is being conducted to meet the different product specification requirements of each company, with the aim of mass production in the European market in FY2025/3. Moving forward, we will establish standard specifications for our products and develop a product lineup that can meet a wide range of needs consistent with the trend toward EVs aiming to expand the adoption of our products in the U.S. in FY2027/3 and beyond. In the domestic market, where development will be in full swing, we will leverage our strong relationships with customers to enter the market, and in the Chinese market we will strengthen marketing by

deepening cooperation with local offices.

With the strengths of the high reliability of our products and our strong relationships with our customers, we will contribute to people's safety and peace of mind in new markets with rapid growth potential.

### ● Anticipated use points in automobiles



## Materials

### Business Overview

The Materials Business provides a wide variety of materials to a wide range of industries. We are the only manufacturer in Japan of acetic acid, which has a wide variety of applications. In our Acetyl business, we provide acetic acid and other chemicals made from acetic acid, cellulose acetate, which is made from cellulose from wood and cotton and acetic acid, and acetate tow, which is spun from this. In the Chemical business we manufacture and sell various chemical products such as alicyclic epoxy, peracetic acid derivatives such as caprolactone, and 1,3-butylene glycol (1,3-BG), an ingredient for cosmetics, based on our organic synthesis technology developed over many years and using globally unique reaction technology.

Main Businesses	Main Products
Acetyl	Acetic acid, acetic acid derivatives (ethyl acetate, acetic etc.), cellulose acetate, acetate tow, ketene derivatives, and ethylamine
Chemical	Alicyclic epoxy, caprolactone derivatives, 1,3-butylene glycol (1,3-BG)

### Our Business Environment

#### Opportunities

- Expectations for biomass materials and marine biodegradable materials
- Recovery in demand for various products as economic activity resumes
- Growth of the global electronic materials market, especially in Asia
- Popularization of electric vehicles
- Increased demand for heat-not-burn tobacco

#### Risks

- Fluctuations in raw material and fuel prices
- Demand fluctuations in acetate tow for tobacco applications
- Rise of competing manufacturers, especially in emerging countries

### Daicel's Strengths

#### Optimized plant operation through DAICEL Production Innovation

Utilize the "Autonomous Production System," an evolution of DAICEL Production Innovation. Optimized plant operation results in energy savings, reduced GHG emissions, stable supply, and increased cost competitiveness in the production process

#### 【Acetyl】

Establishing an acetyl chain as the only acetic acid manufacturer in Japan

In addition to manufacturing and selling acetic acid and derivatives made from acetic acid, we have established a recycling structure whereby we recover, refine, and reuse acetic acid byproducts from customers and our group plants. Maintain a strong acetyl chain in Japan

#### 【Chemical】

Achieving the world's largest market share for alicyclic epoxy through our unique manufacturing methods

Produce high-quality alicyclic epoxy using the world's only distinctive manufacturing process. High quality and high performance, with a manufacturing process that does not contain chlorine, which corrodes and cracks metals, and is applicable to electronic/electrical materials and mobility materials for EVs, etc.

### Performance Targets, Capital Expenditures, Depreciation and Amortization, R&D

FY2023/3 Results		FY2026/3 Targets		Cumulative Total for FY2024/3 to FY2026/3 (Planned)		
Net sales	Operating income	Net sales	Operating income	Capital expenditures	Depreciation and amortization	R&D
160.8 billion yen	20.7 billion yen	182.0 billion yen	30.5 billion yen	41.0 billion yen	57.0 billion yen	12.0 billion yen

\* FY2023/3 results reflect the change in segmentation of cosmetic ingredient 1,3-BG (Medical/Healthcare to Materials).

## Growth Strategies

Main Businesses	Policies	Specific Measures
Acetyl	Development of cellulose acetate applications	<ul style="list-style-type: none"> <li>● Developing new applications for cellulose acetate by utilizing natural materials</li> <li>● Accelerate development through collaboration with internal and external partners</li> </ul>
	Expansion of acetate tow supply capacity, strengthening the supply chain	<ul style="list-style-type: none"> <li>● Expand supply capacity by fully utilizing existing facilities. Meeting increasing demand for heat-not-burn tobacco applications</li> <li>● Strengthen supply chain through stable procurement of ingredients and inventory reduction by expanding use of low LCA pulp</li> </ul>
Chemical	Expansion of peracetic acid derivatives (caprolactone derivatives and epoxy) business	<ul style="list-style-type: none"> <li>● Further expand sales of caprolactone derivatives in high-value-added markets such as paint protection film (PPF) for automobiles and materials for EVs</li> <li>● Strengthen marketing of alicyclic epoxy, the world market share leader, by focusing on insulation materials (materials for EVs, power semiconductors) and next-generation display applications</li> <li>● Promote integrated operation of material creation plus functional analysis plus technical services to strengthen customer responsiveness. North American technical service site to be operational in FY2024/3</li> </ul>

### Key points of growth strategy

## Strengthening the Competitiveness of Cellulose Acetate

In the production process of cellulose acetate (our main product), we have been combining the adoption of the Autonomous Production System based on DAICEL Production Innovation and the use of raw pulp in a more environment-friendly and sustainable manner to enhance product competitiveness and optimize inventories.

### 1. Improved quality and productivity through the Autonomous Production System

Cellulose acetate is made from pulp that is naturally derived and varies in quality. Therefore, precise adjustment of operating conditions by an operator was necessary for each ingredient variety. However, the adoption of the Autonomous Production System has made it possible to continuously adjust operating conditions to optimize product quality while taking cost balance into account. Differences in pulp material quality are compensated for by optimizing operating conditions to achieve both high quality product supply and high productivity. [P.36](#)

### 2. Quality improvement through improved manufacturing methods, stable procurement of ingredients, and inventory reduction

Because naturally derived pulp is difficult to dissolve, it does not react uniformly in the production process due to poor crushing, resulting in

the issue of the formation of impurities in the product. This had a negative impact on productivity in the post-processing of acetate tow production, such as clogging of filter cloths for filtration and yarn breakage in the spinning process. We have introduced a two-step pulp crushing process to improve reactivity by breaking the pulp material into smaller pieces, reducing the amount of acid used, and reducing impurities to improve quality and spinnability in the subsequent process.

Furthermore, the combination of the two-step crushing method and dope filtration\* has expanded the range of usable ingredients to low LCA pulp, which has less environmental impact during production and is more readily available. In the past, the raw pulp used by Daicel was limited to special grades, resulting in excessive inventory for the company. However, by combining product quality regardless of ingredient type with the adoption of the Autonomous Production System, two-step crushing and dope filtration, it is possible to expand the range of ingredients to low LCA pulp. By strengthening the supply chain from ingredient procurement to product supply, comprehensive benefits can be expected, including inventory reduction through product type integration and improved cash flow.

### ●Crushing from sheet pulp (pre-process for cellulose acetate production)



\* Dope filtration: Removal of impurities by filtration process in the pre-refining process

## Engineering Plastics

### Business Overview

Polyplastics is a leading manufacturer of engineering plastics with special features such as mechanical strength, heat resistance, and chemical resistance, contributing to making automobiles lighter and more electrified, and to the higher performance of electronic devices. Daicel Miraizu offers a diverse range of commercial products to various industries, including AS and ABS resins, which have a wide range of applications from daily necessities to automobiles, various polymer alloys and resin compound products, as well as water-soluble polymers noted for use in EVs, which have rapidly gained popularity in recent years.

Main Businesses	Main Products
<b>Polyplastics</b>	Polyacetal (POM), polybutylene terephthalate (PBT), polyphenylene sulfide (PPS), liquid crystal polymer (LCP), and cyclic olefin copolymer (COC)
<b>Daicel Miraizu</b>	AS resin, ABS resin, various polymer alloys, plastic compounds, water-soluble polymers, and barrier films for packaging

### Our Business Environment

#### Opportunities

- Recovery and growth of global automobile production
- Proliferation of electric vehicles and autonomous driving technology
- Changes in infrastructure, devices, and services due to next-generation communications
- Growing interest in the circular economy

#### Risks

- Supply risks associated with rapid recovery of economic activity
- Soaring raw material prices and procurement concerns due to greenflation
- Rise of competing manufacturers, especially in emerging countries
- Various regulations in Europe, including environmental ones

### Daicel's Strengths

#### Ability to develop new applications and group synergies

As a group of engineering plastics experts, we work with customers to develop applications that meet the needs of key industries (e.g., electrical and automotive industries) and society as they change with the times. In addition, we provide optimal solutions across the group by combining the extensive product lineups of Polyplastics, Daicel Miraizu, and Polyplastics-Evonik

#### [Polyplastics]

Expansion of technical solutions system in major regions

Our Technical Solutions Centers in the major regions of Japan, China, Taiwan, Thailand, the United States, and Germany are linked together. This makes them able to provide uniform solutions worldwide for everything from material formulation and design to support for molding and processing

#### [Daicel Miraizu]

Detailed proposals to meet customer needs

Proposals from Daicel Miraizu combine flexible selection of base resins and compounding technology to meet customers' individual needs

### Performance Targets, Capital Expenditures, Depreciation and Amortization, R&D

#### FY2023/3 Results

Net sales	Operating income
<b>238.1</b> billion yen	<b>25.3</b> billion yen

#### FY2026/3 Targets

Net sales	Operating income
<b>294.0</b> billion yen	<b>29.0</b> billion yen

#### Cumulative Total for FY2024/3 to FY2026/3 (Planned)

Capital expenditures	Depreciation and amortization	R&D
<b>100.0</b> billion yen	<b>46.0</b> billion yen	<b>23.5</b> billion yen

## Growth Strategies

Main Businesses	Policies	Specific Measures
Polyplastics	Increase supply capacity and expand product portfolio	<ul style="list-style-type: none"> <li>● POM expansion FY2025/3 90,000 tonnes</li> <li>● LCP expansion FY2025/3 5,000 tonnes</li> <li>● COC expansion FY2025/3 20,000 tonnes</li> <li>● Expansion of engineering plastics product lineup through collaborations with Polyplastics-Evonik and other companies</li> </ul>
	Strengthen marketing to increase market share	<ul style="list-style-type: none"> <li>● Development of products for the CASE market that are expected to grow significantly</li> <li>● Strengthen marketing to Chinese automakers and other Chinese markets</li> <li>● Expand sales in the U.S. and European markets (target 10% share of POM and LCP in the U.S. and Europe in FY2026/3)</li> </ul>
	Creation of environmental business	<ul style="list-style-type: none"> <li>● Development of products using sustainable polymers and biomass materials</li> <li>● Development of mechanical and chemical recycling technologies</li> <li>● Establishment of manufacturing process for POM and LCP with low environmental impact and low GHG emissions</li> </ul>
Daicel Miraizu	Product development with a focus on “environment,” “safety and security,” and “comfort”	<ul style="list-style-type: none"> <li>● Accelerate the creation of synergies within the Group, including collaboration with Polyplastics in the development of recycled resin products</li> <li>● Increased supply of CMCs<sup>*1</sup> for LiBs<sup>*2</sup> through productivity improvement efforts to meet growing demand</li> </ul>

\*1 CMC (Sodium carboxymethylcellulose): CMC Daicel, made from cellulose (a natural material), is a water-soluble polymer developed with Daicel's proprietary technology \*2 LiB: Lithium-ion battery

### Key points of growth strategy

## Innovative Solution Making “Carbon Negative” Possible

Engineering plastics, which have been made from raw materials derived from fossil resources, need to switch to sustainable raw materials in order to achieve carbon neutrality by 2050 and be carbon negative beyond then. To this end, Polyplastics is developing new solutions starting with its core product, POM.

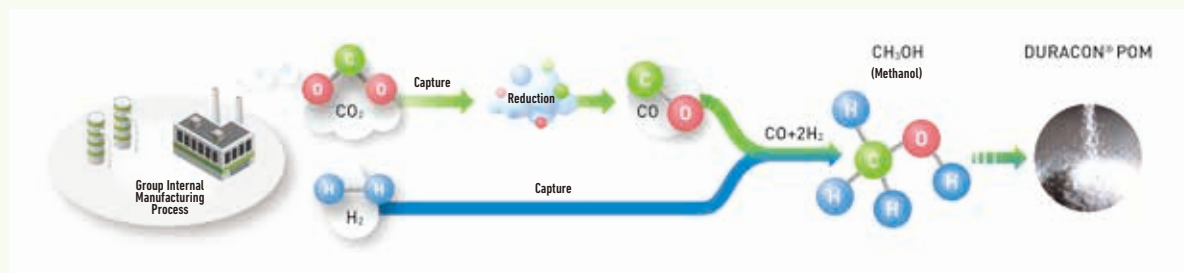
POM is a resin that is ideal for sustainable raw material conversion, and its raw material, methanol, can be produced by fermentation of biomass materials, which is why biomethanol is proliferating. Polyplastics has also begun manufacturing and marketing DURACON<sup>®</sup>bG-POM, which utilizes biomethanol. Furthermore, since the chemical formula for methanol is CH<sub>3</sub>OH, it can be produced with carbon dioxide or carbon monoxide and hydrogen, and we are beginning to develop innovative POMs that take advantage of this property.

This new development is “POM conducive to carbon recycling” made from CO<sub>2</sub> and H<sub>2</sub> captured from manufacturing processes within the Daicel Group. This POM is a lower PCF (product carbon footprint)

product because the CO<sub>2</sub> emissions of the raw material (that which is recycled) can be deducted from the CO<sub>2</sub> emissions of the manufacturing process. It is also effective in combating climate change because it reduces CO<sub>2</sub> emissions into the atmosphere. This “POM conducive to carbon recycling” is slated to be manufactured and sold by FY2028/3.

With carbon recycling technology that uses CO<sub>2</sub> as a resource, we can glimpse the materialization of methanol from CO<sub>2</sub> in the atmosphere as well as in manufacturing processes. By using this methanol, we will work to create carbon-negative products with a PCF of less than 0. We will also work to reduce CO<sub>2</sub> emissions by saving energy in the manufacturing process and using renewable energy.

We will continue to shift from raw materials derived from fossil resources to sustainable raw materials for all Polyplastics products. We will continue to strongly promote group-wide efforts to provide innovative solutions to achieve carbon neutrality and beyond that to create a carbon-negative society.



# List of Materiality KPIs and Results

KPIs and FY2023/3 results are listed for the identified materiality.

For the materiality identification process, please refer to Sustainable Management and Materiality on page 20.

Angles	Classification	Materiality	Content	KPIs	
Materiality aimed at achieving growth of the Daicel Group and value co-creation	Sustainable Product	Contribute to beauty and health	<ul style="list-style-type: none"> <li>• Providing solutions for the pharmaceutical and medical markets</li> <li>• Providing sustainable cosmetic raw materials and health food</li> </ul>	<ul style="list-style-type: none"> <li>• Our chiral columns used in pharmaceutical analysis methods<sup>1</sup></li> <li>• Total number of people provided with functional food ingredients per year</li> </ul>	
		Contribute to the smart society	<ul style="list-style-type: none"> <li>• Providing solvents for semiconductor processing and polymers for resists</li> <li>• Providing functional films that contribute to higher functionality of displays</li> </ul>	<ul style="list-style-type: none"> <li>• New product rate of safe, high-boiling point solvents essential for advanced semiconductor manufacturing processes<sup>2</sup></li> </ul>	
		Provide safety and security for society	<ul style="list-style-type: none"> <li>• Providing products that ensure safety and security of mobility</li> </ul>	<ul style="list-style-type: none"> <li>• Average number of our safety devices installed per vehicle<sup>3</sup></li> <li>• Diversified small mobility devices<sup>4</sup> and new safety devices to prevent home accidents<sup>5</sup> put on the market</li> </ul>	
		Provide environment-friendly materials and technology	<ul style="list-style-type: none"> <li>• Providing materials and technology that reduce environmental impact such as environment-friendly plastics</li> </ul>	<ul style="list-style-type: none"> <li>• Rate of recyclable raw materials<sup>6</sup> used in products</li> <li>• Production of environment-friendly (highly biodegradable, etc.) cellulose acetate</li> </ul>	
	Sustainable Process	Contribute to the development of a circular society	<ul style="list-style-type: none"> <li>• Building Biomass Value Chain</li> <li>• Reuse of waste and CO<sub>2</sub></li> </ul>	<ul style="list-style-type: none"> <li>• External proposals for resource recycling systems using natural materials</li> </ul>	
		Respond to climate change	<ul style="list-style-type: none"> <li>• Reduction of GHG emissions through production innovation, energy innovation, and process innovation</li> </ul>	<ul style="list-style-type: none"> <li>• GHG emission reduction rate of our Group<sup>7</sup></li> </ul>	
	Sustainable People	Promote diversity and inclusion	<ul style="list-style-type: none"> <li>• Work environment where everyone can work with vigor regardless of gender, age, nationality or disability</li> </ul>	<ul style="list-style-type: none"> <li>• Ratio of women in management position<sup>8</sup></li> <li>• Ratio of persons with disabilities that have been with the Company more than three years<sup>9</sup> (1 - persons with disabilities that left the Company in three years after joining / total number of employed persons with disabilities) × 100</li> </ul>	
		Support personal growth	<ul style="list-style-type: none"> <li>• Personnel development for honing expertise</li> <li>• Framework to support employees who take on challenges</li> <li>• Building highly fair evaluation system</li> </ul>	<ul style="list-style-type: none"> <li>• Status of initiatives for personnel development, review of personnel system, introduction and review of career seminars or management training for division heads<sup>9</sup></li> </ul>	
	Materiality related to the foundation for the Daicel Group's continuity and governance	Environment	Reduce environmental impact	<ul style="list-style-type: none"> <li>• Promotion of waste reduction and recycling</li> </ul>	<ul style="list-style-type: none"> <li>• Percentage of industrial waste recycled by our business sites and domestic Group companies</li> </ul>
		Social	Ensure process safety and disaster prevention, occupational health and safety	<ul style="list-style-type: none"> <li>• Elimination of process incidents</li> <li>• Minimization of damages based on crisis assessments</li> </ul>	<ul style="list-style-type: none"> <li>• Serious occupational accidents<sup>8</sup></li> <li>• Serious process safety incidents<sup>8</sup></li> <li>• Percentage of safety training held based on past incidents (occupational accidents and process safety incidents)<sup>8</sup></li> </ul>
Ensure chemical safety and enhance product quality			<ul style="list-style-type: none"> <li>• Reinforced quality management to prevent recurrence of quality defects</li> <li>• Centralized management and sharing of chemical substance information</li> </ul>	<ul style="list-style-type: none"> <li>• RC-related regulation audit rate<sup>9</sup></li> <li>• Rate of initial response to customer complaints within 24 hours<sup>8,9</sup></li> </ul>	
Respect human rights			<ul style="list-style-type: none"> <li>• Establishment and implementation of human rights due diligence</li> <li>• Development of a framework for corrective and remedial action against human rights abuses, and employee education</li> </ul>	<ul style="list-style-type: none"> <li>• Status of efforts to respect human rights for the Daicel Group and the supply chain as a whole (status of conducting due diligence)</li> </ul>	
Foster a corporate culture that meets employee needs			<ul style="list-style-type: none"> <li>• Shorter working hours and improvement in the annual paid leave acquisition ratio</li> <li>• Employee health promotion</li> <li>• Support for flexible work styles</li> </ul>	<ul style="list-style-type: none"> <li>• Annual continuous paid leave acquisition rate (a five-day holiday taken once per year)</li> <li>• Status of efforts to promote employee health<sup>8</sup></li> </ul>	
Promote sustainable procurement			<ul style="list-style-type: none"> <li>• Improved level of CSR across the supply chain</li> </ul>	<ul style="list-style-type: none"> <li>• Sustainable procurement rate (Percentage of raw fuel suppliers that meet our reference points as a result of SAQ)</li> </ul>	
Governance	Strengthen foundation for group governance and compliance	<ul style="list-style-type: none"> <li>• Reinforce corporate governance</li> <li>• Enforce thorough compliance</li> <li>• Strengthen risk management</li> </ul>	<ul style="list-style-type: none"> <li>• Status of efforts to strengthen the supervisory function by the Board of Directors</li> <li>• Rate at which legal checks are made and response measures taken for material matters requiring executive decision</li> <li>• Issues reported to the Help Line</li> <li>• Percentage of executives and employees who know how to use the Help Line system and can contact the Help Line when they discover compliance violations<sup>11</sup> (= percentage of employees who have taken Help Line reporting training)</li> </ul>		

<sup>1</sup> Targets: Pharmacopoeias in Japan, the U.S. and Europe <sup>2</sup> Highly safe high boiling point solvents: Solvents for electronic materials with high solubility and low toxicity such as MMPGAC <sup>3</sup> Targets: Products for Japanese automakers <sup>4</sup> Bicycles, mobility scooters, electric kick scooters, etc. <sup>5</sup> Drowning while bathing indoors, infant suffocation, falls, etc.



Target	FY2023/3 Results	Related Page
<ul style="list-style-type: none"> <li>FY2026/3: 95 cases (cumulative)</li> <li>FY2026/3: 2.23 million (twice the FY2021/3 figure)</li> </ul>	<ul style="list-style-type: none"> <li>88 cases (cumulative)</li> <li>1.42 million</li> </ul>	<ul style="list-style-type: none"> <li>P.38 Medical/Healthcare</li> </ul>
<ul style="list-style-type: none"> <li>FY2026/3: 23.9%</li> </ul>	<ul style="list-style-type: none"> <li>3.2%</li> </ul>	<ul style="list-style-type: none"> <li>P.40 Smart</li> </ul>
<ul style="list-style-type: none"> <li>FY2026/3: 3 units/vehicle</li> <li>FY2026/3: New stable device proposals</li> <li>FY2031/3: 2 cases</li> </ul>	<ul style="list-style-type: none"> <li>2 units/vehicle</li> <li>New business plans under consideration: 2</li> </ul>	<ul style="list-style-type: none"> <li>P.42 Safety</li> </ul>
<ul style="list-style-type: none"> <li>FY2031/3: 30% or more</li> <li>FY2026/3: 10,000-20,000 tonnes/year</li> </ul>	<ul style="list-style-type: none"> <li>15.9%</li> <li>7,993 tonnes/year</li> </ul>	<ul style="list-style-type: none"> <li>P.26 Sustainable Product</li> </ul>
<ul style="list-style-type: none"> <li>FY2026/3: 3 cases</li> </ul>	<ul style="list-style-type: none"> <li>Under research and development</li> </ul>	<ul style="list-style-type: none"> <li>P.26 Sustainable Product</li> <li>P.28 Sustainable Process</li> </ul>
<ul style="list-style-type: none"> <li>Scope 1 and 2</li> <li>FY2031/3: 50% reduction (compared to FY2019/3)</li> </ul>	<ul style="list-style-type: none"> <li>1% increase</li> </ul>	<ul style="list-style-type: none"> <li>P.28 Sustainable Process</li> <li>Response to Climate Change</li> <li><a href="https://www.daicel.com/en/sustainability/environment/climate-change.html">https://www.daicel.com/en/sustainability/environment/climate-change.html</a></li> </ul>
<ul style="list-style-type: none"> <li>FY2026/3: 10% or more</li> <li>Sustain 95% or more</li> </ul>	<ul style="list-style-type: none"> <li>4.9%</li> <li>96.0%</li> </ul>	<ul style="list-style-type: none"> <li>P.34 Sustainable People</li> <li>Promoting Diversity and Inclusion</li> <li><a href="https://www.daicel.com/en/sustainability/social/diversity.html">https://www.daicel.com/en/sustainability/social/diversity.html</a></li> </ul>
<ul style="list-style-type: none"> <li>Disclose results</li> </ul>	<ul style="list-style-type: none"> <li>Strengthened system to support employee's career autonomy</li> <li>Expanded age-specific career training by adding career training for 40s in addition to career training for 50s</li> <li>Established a Career Support Center in the Human Resources Division to support employee's career development</li> <li>Added a business management course (a course to practice planning from data utilization issue setting and investment proposals to business application) to digital literacy education</li> </ul>	<ul style="list-style-type: none"> <li>P.34 Sustainable People</li> <li>Support for Human Resource Development</li> <li><a href="https://www.daicel.com/en/sustainability/social/hrd.html">https://www.daicel.com/en/sustainability/social/hrd.html</a></li> </ul>
<ul style="list-style-type: none"> <li>FY2026/3: 99% or more</li> </ul>	<ul style="list-style-type: none"> <li>98.4%</li> </ul>	<ul style="list-style-type: none"> <li>Reduction and Recycling of Industrial Waste</li> <li><a href="https://www.daicel.com/en/sustainability/environment/industrial-waste.html">https://www.daicel.com/en/sustainability/environment/industrial-waste.html</a></li> </ul>
<ul style="list-style-type: none"> <li>Continue zero cases</li> <li>Continue zero cases</li> <li>Continue to 100%</li> </ul>	<ul style="list-style-type: none"> <li>Zero cases</li> <li>Zero cases</li> <li>100%</li> </ul>	<ul style="list-style-type: none"> <li>Process Safety and Disaster Prevention</li> <li><a href="https://www.daicel.com/en/sustainability/social/safety-security.html">https://www.daicel.com/en/sustainability/social/safety-security.html</a></li> <li>Occupational Health and Safety</li> <li><a href="https://www.daicel.com/en/sustainability/social/ohs.html">https://www.daicel.com/en/sustainability/social/ohs.html</a></li> </ul>
<ul style="list-style-type: none"> <li>FY2026/3: 100%</li> <li>FY2026/3: 100%</li> </ul>	<ul style="list-style-type: none"> <li>41%</li> <li>88%</li> </ul>	<ul style="list-style-type: none"> <li>Chemical and Product Safety</li> <li><a href="https://www.daicel.com/en/sustainability/social/chemical-safety.html">https://www.daicel.com/en/sustainability/social/chemical-safety.html</a></li> <li>Enhancing Product Quality</li> <li><a href="https://www.daicel.com/en/sustainability/social/quality.html">https://www.daicel.com/en/sustainability/social/quality.html</a></li> </ul>
<ul style="list-style-type: none"> <li>Disclose results</li> </ul>	<ul style="list-style-type: none"> <li>Human rights due diligence on our Group companies implementation rate for FY2020/3-FY2023/3: 63.2%</li> <li>Implemented at 18 domestic Group companies out of 19 and 18 overseas Group companies out of 38<sup>*10</sup></li> <li>Planned and implemented human rights due diligence on suppliers</li> </ul>	<ul style="list-style-type: none"> <li>Respect for Human Rights</li> <li><a href="https://www.daicel.com/en/sustainability/social/human-rights.html">https://www.daicel.com/en/sustainability/social/human-rights.html</a></li> </ul>
<ul style="list-style-type: none"> <li>FY2026/3: 100%</li> <li>Disclose results</li> </ul>	<ul style="list-style-type: none"> <li>56.3% (Percentage of employees who took 3 consecutive days of annual paid leave. Calculated as 5 consecutive days off, including Saturdays, Sundays, and holidays.)</li> <li>Expanded the babysitter assistance program to support employees raising children to work without worries</li> <li>Distributed "Childcare Leave Guidebook" to eligible employees and their supervisors, which explains childcare leave benefits and other information in an easy-to-understand manner</li> <li>Established the Group Health Support Center as an organization dedicated to health management to promote the physical and mental health of each and every employee at four levels: company-wide, by business unit, by workplace, and by individual</li> <li>Promoted health management aimed at the physical and mental health of each and every employee, as well as their families, business partners, and local residents, by holding sporting events, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Foster a Corporate Culture That Meets Employee Needs</li> <li><a href="https://www.daicel.com/en/sustainability/social/wb.html">https://www.daicel.com/en/sustainability/social/wb.html</a></li> </ul>
<ul style="list-style-type: none"> <li>FY2024/3: 100%</li> </ul>	<ul style="list-style-type: none"> <li>79%</li> </ul>	<ul style="list-style-type: none"> <li>Sustainable Procurement</li> <li><a href="https://www.daicel.com/en/sustainability/social/supply-chain.html">https://www.daicel.com/en/sustainability/social/supply-chain.html</a></li> </ul>
<ul style="list-style-type: none"> <li>Disclose results</li> <li>Continue to 100%</li> <li>Disclose results</li> <li>FY2026/3: 100%</li> </ul>	<ul style="list-style-type: none"> <li>Conducted an evaluation of the effectiveness of the Board of Directors based on discussions at the Board of Directors meeting, using a method involving a third-party organization</li> <li>Identified multiple issues and improvement areas from an objective perspective by observing board meetings, involving board members in the preparation of questionnaires, and participating in interviews</li> <li>100%</li> <li>76 cases</li> <li>10.1%</li> </ul>	<ul style="list-style-type: none"> <li>P.56 Corporate Governance</li> <li><a href="https://www.daicel.com/en/sustainability/governance/">https://www.daicel.com/en/sustainability/governance/</a></li> <li>P.63 Corporate Compliance</li> <li><a href="https://www.daicel.com/en/sustainability/governance/compliance.html">https://www.daicel.com/en/sustainability/governance/compliance.html</a></li> <li>Risk Management</li> <li><a href="https://www.daicel.com/en/sustainability/governance/risk-management.html">https://www.daicel.com/en/sustainability/governance/risk-management.html</a></li> </ul>

\*6 Recyclable raw materials: biomass raw material, use of atmospheric CO<sub>2</sub>, reuse and recycling of waste materials/Recycling targets: Main resin materials of Daicel, Polyplastics, and Daicel Miraizu \*7 Realization of carbon neutrality in FY2051/3 (Scopes 1, 2, 3) \*8 Scope: Daicel Corporation \*9 Scope: Domestic manufacturing sites of Daicel Corporation \*10 The number of target companies fluctuates because of M&A and business restructuring \*11 Daicel and domestic Group companies

## Dialogue between Outside Director and Outside Audit & Supervisory Board Member



### Hideo Makuta

Outside Audit & Supervisory Board Member  
Attorney at Law, Ginza Chuo Law Office

### Yuriya Komatsu

Outside Director  
Member of the Nomination and Compensation Committee  
Director of IA Partners, Inc.

# Impact and Speed Necessary to Achieve Mid-Term Goals

Under our Long-Term Vision and Mid-Term Management Strategy, Daicel aims to both solve social issues and achieve corporate growth.

Outside Director and Outside Audit & Supervisory Board Member with different backgrounds discussed issues and the ideas necessary for the Daicel Group to increase corporate value.

## ■ Daicel from Each Standpoint

**Komatsu:** I have had experience with brokerage firms and institutional investors, and since that time I have had a favorable impression of Daicel. As I have gotten to know Daicel from the inside since assuming my position in June 2022, I have come to appreciate the Company's approach to value co-creation involving not only itself but also its partners, its steady linkage between contribution to the creation of a circular society and its own growth, and its efforts to incorporate this into its Mid-Term Management Strategy.

**Makuta:** I became an Outside Audit & Supervisory Board Member in June 2020, and I feel that Daicel's business has become more transparent since the reorganization in April of the same year, which transformed the Company from a product-out to a market-oriented business structure. Before assuming this position, I imagined an upstream materials manufacturer and a group of engineers who were steadily and diligently engaged in manufacturing. In reality, however, we also handle products close to consumers, such as functional food materials and LCD protective films for smartphones. Now, my impression has changed to that of a group of engineers who are trying to break out of their shells by taking on new business ventures outside the boundaries of materials.

**Komatsu:** In terms of the attitude of the management team, as evidenced by the phrase "value co-creation" in its Basic Philosophy, the Company is unique by the fact that it is not self-reliant, as is often the case, but rather open to partnerships and does not insist on leading. The management of Daicel is rational and flexible in their decisions, saying things like, "It is faster if we work together," or "Taking costs into account, an alliance promises more benefits than an acquisition," and I feel that they are not averse to adopting new things and changes.

## ■ Evaluation of and Expectations for the Long-Term Vision, and Daicel's "Human Resources" to Carry It Out

**Komatsu:** As mentioned above, the Company's Long-Term Vision and Mid-Term Management Strategy are excellent in linking the concept of sustainability with its own growth strategy, but I was particularly impressed by the biomass value chain concept. Since 70% of Japan's land area is forested, if this concept is realized and

circulation happens in a manner that guarantees profitability, Japan's topography itself will become an international competitive advantage. Furthermore, changes in forests can help solve some of Japan's major problems, such as revitalizing local economies. This competitive advantage will be sustained as the cycle repeats itself and the forests become more and more dynamic. I think this is a revolutionary concept in the sense that it is not a one-off town revitalization, but can continuously stimulate the local economy and can be an effective solution for regional development in Japan.

**Makuta:** Since the Long-Term Vision and Mid-Term Management Strategy are highly abstract, it is important to incorporate these into the business in a concrete manner, leveraging the strengths cultivated in the past. I believe that DAICEL Production Innovation is one of Daicel's strengths. We have a proven track record and have recently established the AI-powered Autonomous Production System. The ability to develop our business based on a system that we have created through our ongoing pursuit of manufacturing efficiency and standardization is a major asset. That is why we are very excited about the challenge of microfluidic devices, which will directly lead to a completely new way of production.

**Komatsu:** How to incorporate a seemingly esoteric strategy into a business depends on the extent to which the vision is instilled in employees and made a personal matter. Last year, the presentations made by employees at DAICON (Daicel Group Business Contest) included a variety of proposals ranging from socially beneficial to those directly related to the Daicel Group's business. Of course, there were some points raised by the directors regarding feasibility and contribution to profitability, but I was impressed by the initiative and ability of many employees to make proposals.

**Makuta:** At the Board of Directors, product representatives also explained marine biodegradable plastics made from cellulose acetate. It was clear that the people in charge are taking pride in their efforts to solve the problem of environmental destruction caused by microplastics.

**Komatsu:** When I visited the nanodiamond production facility, I remember that the person in charge was very enthusiastic and cheerful, eager to take on new challenges and contribute to society. It remains to be seen whether the new products under development at Daicel will be launched within an appropriate time frame and grow into a major business, but from the glimpses we can see of these seeds,



the vision has apparently spread among all employees.

### ■ Challenges in Realizing the Mid-Term Management Strategy

**Komatsu:** The updated Mid-Term Management Strategy covers the necessary elements of the strategy, such as improving profitability and revising the financial strategy. Even as a highlight, there are limits to raising the top line only by improving existing businesses, so the fact that new products are incorporated into the plan and the future is explained and easy to visualize is highly appreciated from an Investor Relations perspective.

Meanwhile, as we enter the middle of the Mid-Term Management Strategy period and the difficulty level of its execution menu increases, it is a critical issue whether we can get through the rough stage without delay and whether we can properly manage the risk of delay. If the Company implements what it has set forth even as the difficulty of successful measures increases markedly, and the achievement of management indicators and KPIs becomes apparent, the Company's reputation in the stock market will also improve. To this end, we would like to see more back-and-forth exchanges at Board meetings on what needs to be completed by when, whether it can be accomplished more quickly, and what bottlenecks exist if there is a risk of delay. In addition, we would like to monitor and push progress forward.

**Makuta:** In addition to explanations of individual products, if employees could report to the Board of Directors on the overall progress, including the time line to implementation, issues leading up to it, and countermeasures, we would be able to see the path to the realization of the Mid-Term Management Strategy. We value evidence because we are a group of serious engineers, and we strive to perfect our products and technologies, but we also need to proceed with speed so that we can showcase technological advances and promote the impact of our products and technologies. I hope that we can carry through with our Mid-Term Management Strategy through a cycle of implementing one or two new business seeds in the real world in order

to involve as many employees as possible, creating an impact, and then allowing the employees themselves to feel the progress.

**Komatsu:** With regard to management's commitment to the realization of the Mid-Term Management Strategy, I would first suggest that ROE should be included as an indicator for performance-based bonuses. Shareholders judge the management quality of a company based on two factors. One is performance, and the other is shareholder value, or in other words, it is whether the Company is committed to increasing corporate value. Since ROE is not only an indicator of asset efficiency, but also of long-term growth potential, the current system may be perceived to lack management's commitment to increasing corporate value. Employee commitment is also important. While improving ROE is important for shareholders and investors, we consider ROIC to be a key indicator. I suggest incorporating evaluation criteria that contribute to the realization of the Mid-Term Management Strategy, such as including KPIs that lead to ROIC improvement in employee evaluations.

### ■ Reviewing Large Investment Projects from a Governance Perspective

**Komatsu:** Regarding the acquisition of Polyplastics as a wholly owned subsidiary, I heard at the time that the stock market was very critical of the investment amount, but as a manufacturing company, I think it is most important to make an M&A transaction a success from a long-term perspective.

**Makuta:** I also believe that this was integral to the Daicel Group's growth strategy in the long run. We feel that the current business environment is becoming increasingly unstable geopolitically, with Russia's invasion of Ukraine and the U.S.-China conflict. If the Company had not decided to make it a wholly owned subsidiary, it is highly likely that it would not have been able to make the decision to invest in its overseas locations in a flexible manner. As a result, we believe that this investment decision was the right one in terms of expanding businesses that we positioned as growth drivers in our

portfolio management.

**Komatsu:** On the other hand, I feel that progress reporting at Board meetings is inadequate for large investment projects. For acquisitions and large investment projects, it is preferable to report regularly with a list. In general, business plans at the time of the investment or acquisition decision will deviate after three to six months, so individual measures should be considered. Also, if several projects differ from the plan, we would like to make a holistic decision on whether to continue after checking the overall situation and considering asset efficiency.

## ■ Management with Safety, Quality, and Compliance as the Priority Foundations

**Makuta:** The Daicel Group includes an extremely serious group of engineers, and they are very dedicated to avoiding anything that could cause accidents with their products or violate laws and regulations. At the same time, through the investigation of inappropriate actions related to third-party certification, I felt that there was a lack of sensitivity regarding matters outside the scope of the law. I also recommended at the Board of Directors that in order for the Company to continue its business, it should be more conscious of quality and compliance, keep its promises to consumers and customers in a broad sense, including contractual quality requirements, and be more sensitive to the expectations of society. To prevent recurrence in the future, it is important to create a system to remember the lessons learned from the past by conducting training programs so that not only executives but also employees share this awareness.

**Komatsu:** My concern was precisely this point: there seemed to be a gap between management's sense of crisis and preparedness and the employees' perception of the situation. Board members and employees reporting to the Board are aware of the crisis, but accidents and quality problems still occur repeatedly. We can eliminate compliance violations through the system, but there are limits, and ultimately it depends on the mindset of management and all employees. I believe that President and CEO, Ogawa, has taken this

into consideration and has renewed the Daicel Group Code of Conduct and Ethical Standards of Daicel Group, as well as updated the Mid-Term Management Strategy.

**Makuta:** Daicel has held safety, quality, and compliance as the priority foundations of its business since the days when ESG was not even mentioned, so the Company has an affinity for ESG. I believe this has its roots in the desire to keep past accidents and scandals from fading away. I believe that this issue has reminded us that, in addition to our responsibility to society, it is essential for us to be aware of safety, quality, and compliance in order for our own company to survive.

## ■ To Support Growth by Leveraging Our Experience and Expertise

**Komatsu:** For a long time, I have been on the receiving end of Investor Relations briefings in the capital markets to evaluate companies. I would like to actively make recommendations on what constitutes accountability and management quality for shareholders. I am also involved in M&As, JVs, and restructuring, and would like to support growth with appropriate comments and suggestions.

Another thing I want to actively promote is diversity. I would like to see more female managers and, more importantly, more female executive officers and directors. There is diversity among women; some want to focus on work-life balance, while others want to work tirelessly. I think the challenge is to establish a system and evaluation method that gives women the autonomy to choose either one, but I would like to start with a dialogue with our employees, drawing on my past experience.

**Makuta:** My mission as an Audit & Supervisory Board Member is to use my legal expertise to watch for legal violations and to assist the Board of Directors in taking necessary risks. Without appropriate risk-taking, challenging goals cannot be achieved. I would like to support the achievement of our goals through overseeing whether there was sufficient discussion, including the credibility of documents, to ensure that the Board of Directors did not over- or under-discuss the issues in order to reach a decision.



# Directors, Audit & Supervisory Board Members, and Executive Officers (as of June 23, 2023)

## Directors



### Yoshimi Ogawa

Representative Director, President and CEO, Member of the Nomination and Compensation Committee, Responsible for Research Center, and Advanced Materials & Packaging Institute, Executive Consultant of Polyplastics Co., Ltd.

April 1983 Joined the Company  
 April 2002 Head of Business Process Innovation  
 June 2006 Executive Officer, Vice President of Aerospace & Defense Systems/Safety Systems Company  
 June 2009 Head of Production Technology  
 June 2011 Director  
 June 2013 Managing Executive Officer  
 June 2017 Senior Managing Executive Officer  
 June 2019 Representative Director, President and CEO (incumbent)



### Yasuhiro Sakaki

Director, Senior Managing Executive Officer, General Manager of Corporate Planning & Strategy Headquarters, General Manager of SCM Headquarters, Responsible for Safety SBU, Healthcare SBU, and Material SBU

April 1984 Joined the Company  
 June 2012 Head of Organic Chemical Products Company  
 June 2014 Executive Officer  
 June 2016 President of Aerospace & Defense Systems/Safety Systems Company  
 June 2017 Managing Executive Officer  
 June 2019 Senior Managing Executive Officer (incumbent)  
 June 2020 Director (incumbent)



### Kotaro Sugimoto

Representative Director, Senior Managing Executive Officer, Member of the Nomination and Compensation Committee, General Manager of Corporate Support Headquarters, Responsible for Corporate Compliance Program, Corporate Sustainability and Digital Strategy Division

April 1984 Joined the Company  
 June 2011 Head of Raw Material Purchasing Center  
 June 2014 Executive Officer, Representative Director and President of Daicel Logistics Service Co., Ltd.  
 June 2017 Managing Executive Officer  
 June 2019 Representative Director (incumbent)  
 June 2020 Senior Managing Executive Officer (incumbent)



### Akihisa Takabe

Director, Senior Managing Executive Officer, General Manager of Assessment Headquarters, Responsible for Safety and Quality Assurance Headquarters, and Intellectual Property Center

April 1984 Joined the Company  
 June 2008 Representative Director and President of Daicel Safety Systems Inc.  
 April 2014 Head of Central Research Center  
 April 2014 Head of Corporate Research Center of R&D Headquarters  
 February 2015 Deputy General Manager of R&D Headquarters  
 June 2015 Executive Officer  
 June 2019 Director (incumbent)  
 June 2020 Managing Executive Officer  
 April 2023 Senior Managing Executive Officer (incumbent)

## Standing Audit & Supervisory Board Members

Hisanori Imanaka Mikio Yagi

## Outside Audit & Supervisory Board Members

Junichi Mizuo\*

Representative Director and Chairperson of the Japan Compliance & Governance Institute, Honorary Professor of Surugadai University

Hideo Makuta\*

Attorney at Law, Ginza Chuo Law Office

Hisae Kitayama\*

Certified Public Accountant, Representative of Kitayama Public Accounting Office

## Senior Managing Executive Officers

Toshio Shiwaku

General Manager, Performance Materials Headquarters  
 Responsible for Innovation and Business Development Headquarters

Naotaka Kawaguchi

General Manager, Production Management Headquarters  
 Head of Biomass Innovation Center  
 Responsible for Engineering Center  
 Responsible for Monozukuri Production Innovation Center

## Managing Executive Officers

Takashi Miyamoto

President and CEO of Polyplastics Co., Ltd.

Kei Yamane

Head of Research Center  
 Responsible for Smart SBU  
 Responsible for Life Sciences SBU

\* Independent Director or Independent Audit & Supervisory Board Member



### Teisuke Kitayama\*

Outside Director, Member of the Nomination and Compensation Committee

June 2005 Director President (Representative Director) of Sumitomo Mitsui Financial Group, Inc., Chairperson of the Board (Representative Director) of Sumitomo Mitsui Banking Corporation  
 April 2017 Director of Sumitomo Mitsui Banking Corporation  
 June 2017 Advisor of Sumitomo Mitsui Banking Corporation  
 June 2018 Director of Daicel Corporation (incumbent)  
 October 2018 Honorary Advisor to Sumitomo Mitsui Banking Corporation (incumbent)



### Yuriya Komatsu\*

Outside Director, Member of the Nomination and Compensation Committee

April 1988 Assistant Portfolio Manager of Credit Suisse Trust and Banking Co., Ltd.  
 April 1990 Senior Analyst of SPARX Asset Management Co., Ltd. (currently SPARX Group Co., Ltd.)  
 May 1996 Senior Research Analyst of The Dreyfus Corporation  
 December 1999 Vice President of Fiduciary Trust Company International  
 September 2000 Partner of INTELASSET, INC.  
 November 2004 Partner of Worldeye Capital Inc.  
 June 2006 Vice President of Olympus Capital Holdings Asia  
 July 2010 Managing Director of Daiwa Quantum Capital Limited  
 October 2014 Member of the Board of KADOKAWA DWANGO Corporation (currently KADOKAWA Corporation), Member of the Board of DWANGO Co., Ltd.  
 September 2021 Managing Director of IA Partners Inc.  
 June 2022 Director of Daicel Corporation (incumbent)  
 January 2023 Director of IA Partners Inc. (incumbent)



### Toshio Asano\*

Outside Director, Chairperson of the Nomination and Compensation Committee

April 2010 President & Representative Director, Presidential Executive Officer of Asahi Kasei Pharma Corporation  
 April 2014 Presidential Executive Officer of Asahi Kasei Corporation  
 June 2014 President & Representative Director and Presidential Executive Officer of Asahi Kasei Corporation  
 April 2016 Director and Standing Advisor of Asahi Kasei Corporation  
 June 2016 Standing Advisor of Asahi Kasei Corporation  
 June 2019 Director of Daicel Corporation (incumbent)  
 June 2022 Advisor of Asahi Kasei Corporation (incumbent)



### Mari Okajima\*

Outside Director, Member of the Nomination and Compensation Committee

April 2012 Vice President of Cabin Safety Promotion Department of Japan Airlines Co., Ltd.  
 April 2013 Vice President of Cabin Attendants Department, Haneda of Japan Airlines Co., Ltd.  
 November 2014 Deputy General Manager of Cabin Division and Vice President of The 1st Cabin Attendants Department, Haneda of Japan Airlines Co., Ltd.  
 June 2015 Deputy General Manager of Cabin Attendants Division and Vice President of Cabin Attendants General Affairs of Japan Airlines Co., Ltd.  
 September 2021 Professor at J. F. Oberlin University (incumbent)  
 June 2023 Director of Daicel Corporation (incumbent)



### Takeshi Furuichi\*

Outside Director, Member of the Nomination and Compensation Committee

March 2010 Representative Director and Senior Managing Executive Officer of Nippon Life Insurance Company  
 March 2012 Representative Director and Executive Vice President of Nippon Life Insurance Company  
 July 2016 Representative Director and Vice Chairperson of Nippon Life Insurance Company  
 June 2020 Director of Daicel Corporation (incumbent)  
 July 2022 Advisor of Nippon Life Insurance Company (incumbent)



### Keita Nishiyama\*

Outside Director, Member of the Nomination and Compensation Committee

April 1985 Joined Ministry of International Trade and Industry (currently Ministry of Economy, Trade and Industry)  
 June 2011 Director-General of the Task Force for Management and Financial Investigation of TEPCO, Cabinet Secretariat  
 June 2012 Senior Executive Managing Officer, Innovation Corporation of Japan (currently Innovation Network Corporation of Japan)  
 July 2012 Deputy Director-General (Economic and Social Policy), Minister's Secretariat, Ministry of Economy, Trade and Industry  
 June 2013 Deputy Director-General (Economic and Industrial Policy Bureau), Minister's Secretariat, Ministry of Economy, Trade and Industry  
 July 2014 Deputy General Manager of Liaison and Coordination Office, Nuclear Damage Liability Support Organization, Executive Officer of Tokyo Electric Power Company (Assistant to Chairman and in charge of Corporate Planning Division (joint))  
 June 2015 Director and Executive Officer of Tokyo Electric Power Company (Assistant to Chairman and in charge of Corporate Planning Division (joint))  
 July 2018 Director-General of Commerce and Information Policy Bureau of Ministry of Economy, Trade and Industry  
 July 2020 Retired from the Ministry of Economy, Trade and Industry  
 November 2020 Representative Director at Nishiyama Research Institute, Inc. (incumbent)  
 June 2023 Director of Daicel Corporation (incumbent)

## Executive Officers

### Hitoshi Hayashi

Deputy General Manager of Assessment Headquarters  
 Division Manager of Assessment Promotion, Assessment Headquarters

### Akio Kojima

Head of Smart SBU

### Haruyoshi Tashika

General Manager of Safety and Quality Assurance Headquarters

### Seiji Yamakado

Representative Director and President of Daicel Miraizu Ltd.  
 Chairperson of Shanghai Daicel Polymers, Ltd.

### Nobuhiko Ikeda

Plant General Manager of Arai Plant  
 Representative Director and President of Daicel Arai Chemical Ltd.

### Kazuya Kurosawa

Head of Material SBU  
 Division Manager of Business Strategy, Material SBU

### Takaharu Takikawa

Head of Engineering Center

### Yoichi Nemoto

Deputy General Manager of Corporate Support Headquarters

### Seiji Sakano

Head of Life Sciences SBU

### Masahiko Hirokawa

Deputy General Manager of Corporate Support Headquarters  
 Division Manager of Investor Relations & Corporate Communications, Corporate Support Headquarters

### Mitsuteru Mutsuda

General Manager of Innovation and Business Development Headquarters  
 Assistant Head of Biomass Innovation Center

### Ryohei Yamada

Deputy Head of Life Sciences SBU  
 Division Manager of Medical Device Division, Life Sciences SBU

### Hiroshi Iwase

Deputy Head of Smart SBU

# Corporate Governance

Based on our Basic Philosophy of being a “company making lives better by co-creating value,” we see the reinforcement of corporate governance as a key management priority for improving corporate value and thereby contributing to the interests of our various stakeholders. Along with maintaining an efficient and dynamic organizational structure that enables us to quickly respond to changes in our business environment, we strive to preserve and reinforce the already highly effective corporate governance structure through which we consistently improve our corporate value by ensuring managerial transparency and legal compliance.

## Changes in Corporate Governance Enhancement

	FY2001/3	FY2011/3	FY2021/3
Separation of supervisory from business execution functions	<ul style="list-style-type: none"> <li>● 2000/3 Introduced the Executive Officer System</li> <li>● 2001/3 Appointed Outside Directors</li> </ul>		<ul style="list-style-type: none"> <li>● 2018/3 Increased the ratio of Outside Directors to 50%</li> <li>● 2023/3 Increased the ratio of Outside Directors to 50%</li> </ul>
Clarification of management responsibility and building a system that responds quickly to changes in the environment		<ul style="list-style-type: none"> <li>● 2004/3 Shortened the term of office for Directors from two years to one</li> </ul>	
Establishment of various committees	<ul style="list-style-type: none"> <li>● 2001/3 Established the Nomination and Compensation Committee</li> </ul>	<ul style="list-style-type: none"> <li>● 2007/3 Established the Information Disclosure Committee / the Risk Management Committee</li> <li>● 2011/3 Established the Internal Control Council</li> </ul>	
Effectiveness evaluation of the Board of Directors			<ul style="list-style-type: none"> <li>● 2017/3 Started to evaluate the effectiveness of the Board of Directors</li> <li>● 2021/3 Improved the method for evaluating the effectiveness of the Board of Directors</li> <li>● 2023/3 Changed the method for evaluating the effectiveness of the Board of Directors (Evaluation by an external expert)</li> </ul>
Development of internal control systems		<ul style="list-style-type: none"> <li>● 2007/3 Established the Basic Policy for structuring Internal Control Systems</li> </ul>	

## Corporate Governance Framework

The Company has established a corporate framework under which its Board of Directors makes management decisions in an efficient manner and fulfills its supervisory functions, and its Audit & Supervisory Board accomplishes its auditing and supervisory functions. Such a framework has enabled us to keep reinforcing our corporate governance. Specifically, by welcoming Outside Directors and allowing them to provide opinions and advice based on their expertise, Daicel is working to ensure that the decisions made by its Board of Directors are appropriate and the execution of Director duties is effectively supervised. Moreover, we have adopted an Executive Officer System that has enabled us to clearly separate our decision-making, supervisory, and business execution functions. Such a clear division of roles has allowed us to bolster our business management structure and, consequently, corporate activities.

[Corporate Governance Report \(July 11, 2023\)](https://www.daicel.com/en/sustainability/pdf/governance/cg_report_20230711.pdf)  
[https://www.daicel.com/en/sustainability/pdf/governance/cg\\_report\\_20230711.pdf](https://www.daicel.com/en/sustainability/pdf/governance/cg_report_20230711.pdf)

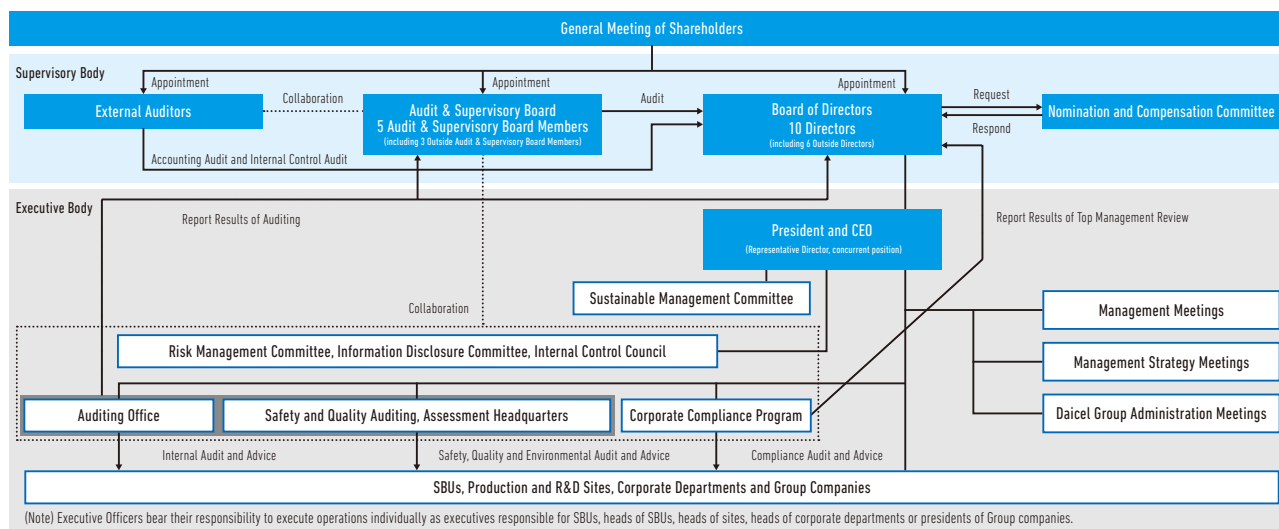
[Standards for Independence of Outside Directors / Outside Audit & Supervisory Board Members](https://www.daicel.com/en/sustainability/pdf/governance/Standards_for_Independence.pdf)  
[https://www.daicel.com/en/sustainability/pdf/governance/Standards\\_for\\_Independence.pdf](https://www.daicel.com/en/sustainability/pdf/governance/Standards_for_Independence.pdf)

### Outline of Corporate Governance Framework (As of June 23, 2023)

Item	Content
Type of organizational structure	Company with Audit & Supervisory Board
Chairperson of the Board of Directors	President and CEO
Number of Directors	10 (including 2 female Directors)
Number of Outside Directors	6 (all 6 are independent Directors)
Number of Audit & Supervisory Board Members	5 (including 1 female Director)
Number of Outside Audit & Supervisory Board Members	3 (all 3 are independent Audit & Supervisory Board Members)
Number of Executive Officers	21 (including 4 officers concurrently serving as Directors)
Number of Board of Director meetings held in FY2023/3 (Average attendance rate of Outside Directors/Outside Audit & Supervisory Board Members)	15 (97.8%/98.3%)
Number of Audit & Supervisory Board meetings held in FY2023/3 (Average attendance rate of Outside Audit & Supervisory Board Members)	15 (98.3%)
Term of office for Directors	1 year
Term of office for Audit & Supervisory Board Members	4 years
Average term in office for Directors	3.6 years
Average term in office for Audit & Supervisory Board Members	2.4 years
External Auditor	Deloitte Touche Tohmatsu LLC



## Corporate Governance Framework (as of June 23, 2023)



### [Board of Directors]

The Company recognizes the role of the Board of Directors as being to establish a direction the Company should aim for, formulate specific strategies toward that end, and supervising efforts to achieve those goals from an objective standpoint. Consisting of four Internal Directors and six Outside Directors, the Board of Directors makes decisions about important matters regarding corporate management and supervises the execution of business and business operations.

#### Number of Resolutions, Discussions, and Reports by the Board of Directors (FY2023/3)

Resolution and Report Classification	Number of Topics under Discussion
Management strategy, sustainability, governance, IR, individual matters	49
Accounting and finance	40
HR and remuneration	30
Risk management, corporate compliance and corporate ethics	12
Audit & Supervisory Board Members, External auditors and internal audits	7
<b>Total</b>	<b>138</b>

### [Audit & Supervisory Board]

The Audit & Supervisory Board comprises five members, and three members are Outside Audit & Supervisory Board Members. The Audit & Supervisory Board holds meetings to share information, deliberate on, and make decisions about important issues related to the Company's audits. Outside Audit & Supervisory Board Members have abundant experience and wide-ranging insight in areas such as financial accounting, finance, legal affairs, and management, and they perform audit functions from an independent third-party standpoint.





























#### Major Activities of Audit & Supervisory Board Members

<b>Dialogue with Executive Officers such as the President and CEO</b>	The Audit & Supervisory Board Members are provided opportunities for dialogue with the President and CEO, senior managing executive officers, managing executive officers, etc. to ascertain the management situation and concerns, and when necessary, issues are raised and suggestions are made.
<b>Attending important meetings</b>	Besides the Board of Directors meeting, the standing Audit & Supervisory Board Members attend other important meetings such as management meetings, planning meetings, management strategy meetings, internal control council meetings, grasp a wide range of information and state their opinions as and when necessary.
<b>Audit and site visit</b>	The standing Audit & Supervisory Board Members take a lead in conducting site visits at offices, Group companies and other units in Japan and overseas. During the visits, they receive explanations of the status of business execution, ask questions, and state opinions based on their expert knowledge. In FY2023/3, we conducted audits of 28 internal departments, on-site audits at 7 business sites, and on-site audits at 32 Group companies.
<b>Collaboration with internal audit departments and External Auditors</b>	The Audit & Supervisory Board Members hold regular meetings with the Auditing office, Corporate Compliance Program, and Safety and Quality Auditing, which are internal audit departments, and receive reports on the implementation status of plans and activities. They hold meetings with the external auditors about ten times a year and receive timely reports on the status of execution of duties and the results of audits, and they also exchange necessary information and opinions through discussions on major audit matters.

### [Nomination and Compensation Committee]

The Nomination and Compensation Committee reports in response to requests from the Chairperson of the Board of Directors or the Audit & Supervisory Board, with a focus on maintaining transparency, appropriateness, and objectivity with regard to decision-making processes for personnel affairs and compensation relating to personnel that include Directors, Audit & Supervisory Board Members and Executive Officers. The committee is chaired by an Outside Director and consists of six Outside Directors and two Representative Directors.

## Composition of the Board of Directors and Audit &amp; Supervisory Board

Position	Name	Responsibilities, Key Background, etc.	Sex	Term of Office	Independent Director or Independent Audit & Supervisory Board Member	Business Execution
Directors	Inside	Yoshimi Ogawa	Representative Director, President and CEO, Chairperson of Board of Directors, Member of the Nomination and Compensation Committee Responsible for Research Center, and Advanced Materials & Packaging Institute, Executive Consultant of Polyplastics Co., Ltd.		12 years	
		Kotaro Sugimoto	Representative Director, Senior Managing Executive Officer Member of the Nomination and Compensation Committee General Manager of Corporate Support Headquarters, Responsible for Corporate Compliance Program, Corporate Sustainability, and Digital Strategy Division		4 years	
		Yasuhiro Sakaki	Director, Senior Managing Executive Officer General Manager of Corporate Planning & Strategy Headquarters, General Manager of SCM Headquarters, Responsible for Safety SBU, Healthcare SBU, and Material SBU		3 years	
		Akihisa Takabe	Director, Senior Managing Executive Officer, General Manager of Assessment Headquarters, Responsible for Safety and Quality Assurance Headquarters, and Intellectual Property Center		4 years	
	Outside	Teisuke Kitayama	Outside Director Member of the Nomination and Compensation Committee Honorary Advisor of Sumitomo Mitsui Banking Corporation		5 years	
		Toshio Asano	Outside Director Chairperson of the Nomination and Compensation Committee Advisor of Asahi Kasei Corporation		4 years	
		Takeshi Furuichi	Outside Director Member of the Nomination and Compensation Committee Advisor of Nippon Life Insurance Company		3 years	
		Yuriya Komatsu	Outside Director Member of the Nomination and Compensation Committee Director of IA Partners Inc.		1 year	
		Mari Okajima	Outside Director Member of the Nomination and Compensation Committee Professor at J. F. Oberlin University Former Deputy General Manager of Cabin Attendants Division of Japan Airlines Co., Ltd.		-	
		Keita Nishiyama	Outside Director Member of the Nomination and Compensation Committee Representative Director at Nishiyama Research Institute, Inc. Former Director-General of Commerce and Information Policy Bureau of Ministry of Economy, Trade and Industry		-	
Audit & Supervisory Board Members	Inside	Hisanori Imanaka	Standing Audit & Supervisory Board Member, Chairperson of Audit & Supervisory Board		3 years	
		Mikio Yagi	Standing Audit & Supervisory Board Member		-	
	Outside	Junichi Mizuo	Outside Audit & Supervisory Board Member Representative Director and Chairperson of the Japan Compliance & Governance Institute, Honorary Professor of Surugadai University		5 years	
		Hideo Makuta	Outside Audit & Supervisory Board Member Attorney at Law, Ginza Chuo Law Office		3 years	
		Hisae Kitayama	Outside Audit & Supervisory Board Member Certified Public Accountant, Representative of Kitayama Public Accounting Office		1 year	

\* In "Primary Areas of Knowledge and Experience (Skill Matrix)", up to five items that are particularly expected from each person are listed. It does not represent all the knowledge and experience that each person possesses.

	Board of Directors (Attendance Rate)	Audit & Supervisory Board (Attendance Rate)	Nomination and Compensation Committee (Attendance Rate)	Primary Areas of Knowledge and Experience (Skill Matrix)*								
				Corporate Management	Global Management	Marketing and Business Planning	Technology and R&D	Finance and Accounting	Legal Affairs, Intellectual Property and Risk Management	DX	Sustainability	
											Environment	Diversity & Inclusion
	● (100%)		● (100%)	●	●		●				●	
	● (100%)		● (100%)	●	●			●	●			●
	● (100%)			●	●	●			●		●	
	● (93.3%)			●			●		●		●	
	● (100%)		● (100%)	●	●			●	●		●	
	● (100%)		● (100%)	●	●		●				●	
	● (100%)		● (100%)	●	●			●				●
	● (100%)		● (100%)	●	●			●	●			●
						●		●				●
				●					●	●	●	
	● (100%)	● (100%)		●	●						●	●
				●	●	●			●			●
	● (100%)	● (100%)							●		●	●
	● (93.3%)	● (93.3%)						●	●			●
	● (100%)	● (100%)						●	●			●

## Effectiveness Evaluation of the Board of Directors

Every year, the Company conducts and publicly releases a summary of an effectiveness evaluation of the Board of Directors, which aims to maintain and improve the Board's performance and find the most suitable approach to corporate governance.

### FY2023/3 Initiatives Based on the FY2022/3 Effectiveness Evaluation

In view of the effectiveness evaluation of FY2022/3, in FY2023/3 we spent time improving reports with regard to the importance of subjects such as major investments in our business strategy, as well as progress and issues related to such subjects.

### FY2023/3 Effectiveness Evaluation of the Board of Directors

Although our effectiveness evaluations of the Board of Directors to date have been done strictly by those affiliated with the administrative office of the Board of Directors, FY2023/3 saw us begin to enlist the support of a third-party organization (a law firm) with the goal of incorporating the knowledge of experts to further improve the effectiveness of the Board of Directors. We plan to make use of this third party once every three years.

### Summary of the Evaluation Process and Results

Evaluation Process	<ul style="list-style-type: none"> <li>•A questionnaire prepared by the office in cooperation with a third-party organization is distributed to all the Directors and Audit &amp; Supervisory Board Members and the results are collected.</li> <li>•The responses of the above questionnaire are surveyed in more detail in individual interviews with the presence of a third-party organization.</li> <li>•Based on the responses of questionnaire and results of interviews, issues are identified through discussions between a third-party organization and the office.</li> <li>•These results (including proposals by a third-party organization on responses to issues) are reported and discussed at the Board of Directors.</li> </ul>
Main Evaluation Item	<ol style="list-style-type: none"> <li>(1) Composition of the Board of Directors</li> <li>(2) Status of discussions at the Board of Directors</li> <li>(3) Status of discussions on investor evaluations and disclosure</li> <li>(4) Status of discussions on matters of high public interest in recent years (SDGs, etc.)</li> <li>(5) Other Board operation issues</li> </ol>
Overview of Evaluation Results	<p>The Board of Directors engaged in productive discussions with Outside Directors and actively offered their opinions, and we were able to confirm that the effectiveness of the Board is generally satisfactory.</p> <p>On the other hand, there were some issues that needed to be addressed to improve the Board's effectiveness. The main issues pointed out were:</p> <ol style="list-style-type: none"> <li>(1) Board composition issues <ul style="list-style-type: none"> <li>•Further discussions on the succession plans of a management team.</li> </ul> </li> <li>(2) Board deliberation issues <ul style="list-style-type: none"> <li>•Enhancement of monitoring structure of the status of execution of management strategies as well as the identification of risks of individual proposal.</li> </ul> </li> <li>(3) Status of discussions on investor evaluations and disclosure <ul style="list-style-type: none"> <li>•Further discussions on the ideal way, etc. to disclose information on changes, etc. of management strategies.</li> </ul> </li> <li>(4) Status of discussions on matters of high public interest in recent years <ul style="list-style-type: none"> <li>•Enhancement of monitoring structures for the initiatives related to sustainability and promotion of human capital management.</li> </ul> </li> <li>(5) Other Board operation issues <ul style="list-style-type: none"> <li>•Improvements on the timing of delivering reference materials for Board meetings and use of in-house jargon.</li> <li>•Discussions on the ideal way to serve as chairperson of the Board of Directors.</li> </ul> </li> </ol>
Actions to Be Taken	<p>It was confirmed that the Company will further enhance the effectiveness through the discussions on the above issues at the Board of Directors for FY2024/3 and ongoing initiatives going forward.</p>

## Compensation for Directors and Audit & Supervisory Board Members

### 1. Basic Policy

- (1) Compensation of Directors and Audit & Supervisory Board Members shall be determined by Board of Directors' resolution for Directors, and Audit & Supervisory Board Members' discussion for Audit & Supervisory Board Members within the scope of the total amount of compensation, etc., approved by the General Meeting of Shareholders.
- (2) Compensation of Directors shall consist of monthly compensation, performance-based bonuses, and stock compensation, which will generally be paid according to a 55:30:15 ratio that is subject to change according to one's position. This rule does not apply to Outside Directors, who shall be paid only a monthly compensation. The compensation of Audit & Supervisory Board Members shall consist solely of monthly compensation.
- (3) To ensure objectivity, transparency, and validity regarding compensation, the Board of Directors makes its decision following deliberations based on recommendations made by the Nomination and Compensation Committee.

### 2. Basic Policy on Compensation

#### (1) Monthly Compensation

In principle, the monthly compensation of Directors and Audit & Supervisory Board Members is a fixed amount paid in accordance with internal rules that are determined by the Directors' duties and job titles in business execution and as to whether or not the Audit & Supervisory Board Members are full-time.

Regarding monthly compensation, the Company has revised the compensation to an appropriate and fair level reflective of its business performance, accomplishment of medium- and long-term business plans, and social situation, among other factors.

#### (2) Performance-Based Bonuses

Performance-based bonuses of Directors are paid in accordance with the accomplishment of performance indicators designated by the Board of Directors. Currently, net sales and operating income are used as the indicators to emphasize business growth, market expansion, and improvements in the earning power of our core business. These indicators are given a 50-50 weighting, and the basic amount of the performance-based bonus is calculated by multiplying the rank-based amount with a payment rate that fluctuates between 0% and 200% based on the level of accomplishment of the performance indicators. Further, the payment rate based on the level of accomplishment of the indicators is calculated based on the table below.

#### The Coefficients of Payment Rate for Calculating Performance-Based Bonuses

Indicator	Weight	Target Achievement Rate	Coefficient
Consolidated net sales	50%	120% or more	200%
		More than 100% and less than 120%	*1
		100%	100%
		More than 80% and less than 100%	*2
		80% or less	0%
Consolidated operating income	50%	120% or more	200%
		More than 100% and less than 120%	*1
		100%	100%
		More than 80% and less than 100%	*2
		80% or less	0%

\*1 These bonuses are proportional to the percentage that the target figure was achieved, within a range of 101% to 199%. \*2 These bonuses are proportional to the percentage that the target figure was achieved, within a range of 1% to 99%.

The final amount of performance-based bonuses are determined by assessing the status of each Director from the perspectives of practicing sustainable management policy and accomplishing Mid-Term Management Strategy, and adding or subtracting up to 20% to or from the basic amount of the performance-based bonus.

#### (3) Restricted Stock Compensation System

Daicel introduced Restricted Stock Compensation System to step up value-sharing with shareholders and motivate Directors to contribute more to medium- to long-term improvement in corporate value. The stocks cannot be transferred for a period of 30 years, and the Board of Directors decides on an amount for each eligible individual, which is then divided by the stock price at a certain point to calculate the number of shares to be awarded.

## Total Compensation for Directors and Audit & Supervisory Board Members (FY2023/3)

Category	Number of recipients	Amount (Yearly)			
		Monetary compensation		Stock-based compensation	Total
		Monthly compensation	Performance-based bonuses		
Directors (including Outside Directors)	11 (6)	276 million yen (75 million yen)	75 million yen (-)	52 million yen (-)	404 million yen (75 million yen)
Audit & Supervisory Board Members (including Outside Audit & Supervisory Board Members)	6 (4)	109 million yen (39 million yen)	-	-	109 million yen (39 million yen)
Total	17	386 million yen	75 million yen	52 million yen	514 million yen

\* A resolution of the 153rd Annual General Meeting of Shareholders held on June 21, 2019, held the amount of compensation for Directors to a maximum of 500 million yen annually. Especially, a resolution of the 156th Annual General Meeting of Shareholders held on June 22, 2022, held the amount of compensation for Outside Directors to a maximum of 100 million yen annually.

\* At the 152nd Annual General Meeting of Shareholders held on June 22, 2018, it was resolved that the amount of compensation for Audit & Supervisory Board Members should be within 120 million yen per year.

# Quality Misconduct/Corporate Compliance

## Inappropriate Actions Related to Third-Party Certification for the Products of Our Group Company

With regard to the certification by Underwriters Laboratories Limited Liability Company (hereinafter, UL), a third-party safety science organization in the United States, for some of the resin products sold by one of our subsidiaries, Daicel Miraizu Ltd., we announced on July 11, 2022, that in the tests conducted by UL, the test specimen submitted was not the one that should have been originally submitted, that the composition at the time of obtaining the certification was partially changed without applying to UL, and that this product was manufactured and sold as a certified product.

We established an investigative committee consisting of our independent Outside Audit & Supervisory Board Members and outside experts who have no stakes in our Company and entrusted them with the investigation of such acts. Then, on December 16, 2022, we received from this committee an investigation report with the investigation results including the facts about these acts and their causal analysis, and the results of the verification of the current quality compliance system, along with the following recommended measures for the prevention of recurrence of these acts.

### Recommended Measures for Preventing Recurrence

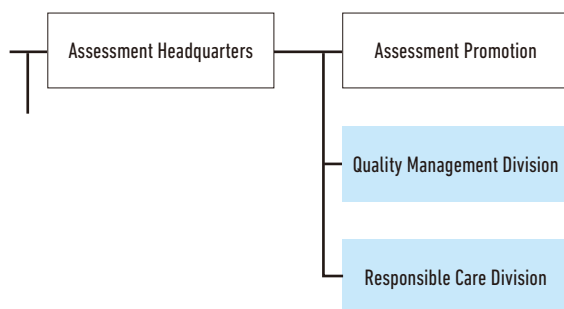
1. Thorough implementation of early design reviews during product development and composition changes
2. Improving the FUS (Follow Up Service) work environment and promoting personnel rotation
3. Strengthening the quality risk management system
4. Developing a quality assurance system
5. Establishment of internal rules and manuals regarding quality assurance, clarification of escalation flow
6. Further commitment by our officers to quality compliance activities
7. Strengthening the monitoring of quality compliance
8. Strengthening the education and training regarding quality compliance
9. Resolving the reluctance to use the Whistleblower System
10. Reflecting the status of quality compliance in personnel evaluations and making the disciplinary action stricter

The results of the investigation by the committee will be taken seriously by the entire Group, and we will steadily proceed with measures to prevent recurrence. We have once again positioned “Safety,” “Quality” and “Compliance” as the foundations of our “manufacturing,” and we newly established “Daicel Group Code of Conduct” and “Ethical Standards of Daicel Group” on April 1, 2023, and on the same day, restructured our organization to strengthen the management foundation, where top priority is placed on “Safety,” “Quality” and “Compliance.” All officers and employees of the Group will once again go back to the basics of “manufacturing” and do their utmost to restore trust and prevent recurrence.

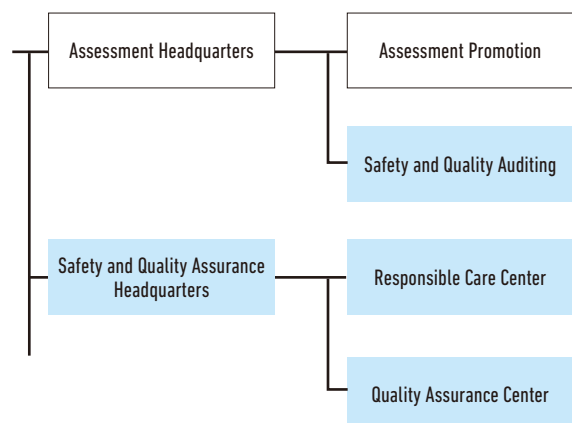
## Overview of Organizational Changes

Under the old structure, the “Assessment Headquarters” was responsible for auditing and promoting initiatives related respectively to safety and quality, but under the new system, the auditing function and the initiative promotion function are organizationally segregated. “Assessment Headquarters” was changed to an organization specializing in the auditing function, and “Safety and Quality Assurance Headquarters” was newly established as a function to oversee and promote initiatives related to safety and quality.

Before Change



After Change



[Daicel Group Code of Conduct](https://www.daicel.com/en/sustainability/governance/compliance/policy.html)  
<https://www.daicel.com/en/sustainability/governance/compliance/policy.html>

[Ethical Standards of Daicel Group](https://www.daicel.com/en/sustainability/governance/compliance/standard.html)  
<https://www.daicel.com/en/sustainability/governance/compliance/standard.html>

## Corporate Compliance

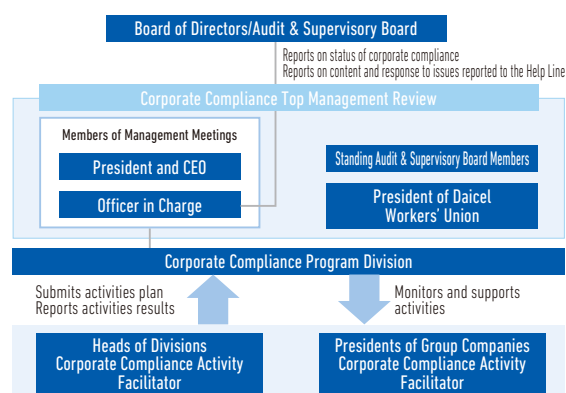
One of the foundations for sustainable management is corporate compliance. Each department and Group company (hereinafter, each organization) of the Company formulates action plans based on the Daicel Group Code of Conduct and Ethical Standards of Daicel Group, and under the same sense of values, we are working on corporate compliance activities throughout the Group and instilling corporate compliance in each and every employee.

Daicel Group Code of Conduct	As a guideline for regulating the behavior of individuals, it shows the items that each officer and employee should always be aware of and put into practice with the first priority to self-control as a member of society.
Ethical Standards of Daicel Group	It is a necessary condition for survival in a diversifying global society as a model of business execution of the Company, and indicates universally applicable items in all areas of activity.

### Promotion System

The Company has established a Corporate Compliance Program Division under the responsibility of Senior Managing Executive Officers to promote its corporate compliance activities across the entire Group. Each organization independently practices corporate compliance activities with a corporate compliance activity facilitator at their cores. At meetings of the corporate compliance Top Management Review which are held at least once a year, activities of and important issues concerning each organization are discussed. The details of these meetings are reported to the Board of Directors. The Corporate Compliance Program Division holds meetings with each organization that include an internal audit aspect, to promote better corporate compliance activities, and works to raise awareness of and support organizations' corporate compliance activities in addition to swiftly identifying and correcting business risks through dialogue.

### Corporate Compliance Program Promotion System



### Education and Training Programs

The Group systematically promotes training on corporate compliance through hierarchical training. In addition, we have established a Compliance Awareness Month and conduct e-learning and discussion-based training on compliance. In FY2023/3, we held a discussion-based training on the inappropriate actions related to third-party certification, and used it as an opportunity to reconfirm the importance of doing the right thing as a member of society, and worked to raise awareness of compliance throughout the Group.

### Compliance Help Line System (Whistleblower System)

We have established a "Compliance Help Line System" based on the purpose of the whistleblower protection system. In addition to the internal contact points, we have also set up external points of contact hosting an external institution for receiving reports and consultations from within the Company. We have also set up a contact point on our website to respond to inquiries from outside the Company. The Board of Directors is regularly reported on the status and results of responses to all reports and consultations received by the Group's hotline. In response to the occurrence of the inappropriate actions related to third-party certification at Group company, we are strengthening awareness of the outline of this system and of how to use it. In addition to awareness-raising activities at each workplace, we are raising awareness through hierarchical training and e-learning during Compliance Awareness Month, and we also conduct reporting drills using simulated cases.

#### Overview of the Compliance Help Line System of Our Group

<b>Target users</b>	All officers and employees including overseas employees (including contract employee (directly employed) and temporary staff (indirectly employed via agency)), outside entities (customers, business partners, cooperating companies, retirees, general public, etc.)
<b>Contents of report</b>	Events that may violate the Ethical Standards of Daicel Group (fraud, anti-competitive conduct, corruption and bribery, human rights violation, harassment, pollution of employment environment and environment in general, other violations to compliance)
<b>Features</b>	Anyone can report anonymously. Matters concerning Group companies can be reported to the Daicel help line as well as to Group company help lines

#### Cases of Reporting and Consultation of the Entire Daicel Group as Reported to the Corporate Compliance Program Division

	FY2021/3	FY2022/3	FY2023/3
Identified problematic conduct	17	24	35
Harassment damage, etc.	13	19	20
Complaints to the Company	22	4	16
Others	2	3	5
<b>Total</b>	<b>54</b>	<b>50</b>	<b>76</b>

# Financial Information

## Consolidated Eleven-Year Summary

As of and for the years ended March 31

	FY2013/3	FY2014/3	FY2015/3	FY2016/3
<b>Operational Results</b>				
Net sales	¥ 358,513	¥ 413,786	¥ 443,775	¥ 449,878
Operating income	26,196	37,912	51,303	64,349
Net income attributable to owners of the parent	15,372	22,843	31,252	40,313
<b>Financial Position</b>				
Net assets	¥ 262,899	¥ 295,805	¥ 356,177	¥ 368,720
Total assets	461,512	509,834	565,332	560,190
Interest-bearing debt	99,224	105,917	86,981	71,276
<b>Cash Flows</b>				
Cash flows from operating activities	¥ 44,480	¥ 44,777	¥ 57,412	¥ 65,419
Cash flows from investing activities	(35,312)	(34,984)	(30,283)	(31,407)
Cash flows from financing activities	5,737	(4,472)	(29,230)	(31,470)
Cash and cash equivalents, end of year	53,238	62,573	66,737	65,237
<b>Per Share Information</b>				
Basic net income per share (yen)	¥ 43.71	¥ 64.98	¥ 88.95	¥ 115.02
Net assets per share (yen)	685.11	764.51	922.71	966.36
Cash dividends per share (yen)	12.00	15.00	21.00	26.00
<b>Financial Indicators</b>				
EBITDA	¥ 51,620	¥ 63,005	¥ 76,937	¥ 90,320
Ratio of operating income to net sales (%)	7.3	9.2	11.6	14.3
ROIC (%)	5.2	6.6	8.0	9.5
ROE (%)	6.7	9.0	10.5	12.2
ROA (%)	3.6	4.7	5.8	7.2
Total asset turnover (times/year)	0.8	0.9	0.8	0.8
Equity Ratio (%)	52.2	52.7	57.3	60.2
Dividend payout ratio (%)	27.5	23.1	23.6	22.6
Total return ratio (%)	27.5	23.1	23.6	32.5
<b>Others</b>				
Capital expenditures	¥ 27,217	¥ 25,617	¥ 30,629	¥ 40,256
Depreciation and amortization	24,026	23,669	23,409	23,914
Research and development expenses	12,875	13,360	14,031	15,306
Number of employees (at year-end)	9,233	9,700	10,173	10,709

(Note) Amortization of goodwill is not included in depreciation and amortization



(Millions of yen)

	FY2017/3	FY2018/3	FY2019/3	FY2020/3	FY2021/3	FY2022/3	FY2023/3
	¥ 440,061	¥ 462,956	¥ 464,859	¥ 412,826	¥ 393,568	¥ 467,937	<b>¥ 538,026</b>
	64,306	58,932	51,171	29,644	31,723	50,697	<b>47,508</b>
	43,198	37,062	35,301	4,978	19,713	31,254	<b>40,682</b>
	¥ 399,429	¥ 413,541	¥ 423,243	¥ 392,583	¥ 245,000	¥ 279,544	<b>¥ 310,435</b>
	599,708	644,078	654,791	597,992	640,385	698,836	<b>765,606</b>
	72,291	99,743	104,306	92,787	270,938	283,553	<b>321,974</b>
	¥ 86,168	¥ 66,888	¥ 58,523	¥ 57,193	¥ 57,869	¥ 42,993	<b>¥ 26,847</b>
	(34,722)	(33,189)	(41,095)	(45,864)	(34,220)	(46,528)	<b>(44,093)</b>
	(19,942)	(1,962)	(25,636)	(47,883)	(17,050)	(5,452)	<b>19,956</b>
	96,275	128,290	120,016	80,674	90,747	87,986	<b>93,493</b>
	¥ 124.61	¥ 107.81	¥ 105.38	¥ 15.49	¥ 65.18	¥ 104.14	<b>¥ 138.87</b>
	1,067.63	1,136.32	1,198.77	1,166.56	789.34	919.88	<b>1,033.52</b>
	30.00	32.00	32.00	34.00	32.00	34.00	<b>38.00</b>
	¥ 95,143	¥ 91,889	¥ 82,221	¥ 59,765	¥ 59,128	¥ 78,893	<b>¥ 79,085</b>
	14.6	12.7	11.0	7.2	8.1	10.8	<b>8.8</b>
	9.1	7.7	6.1	3.8	4.1	6.2	<b>5.3</b>
	12.2	9.8	9.1	1.3	6.6	12.3	<b>14.3</b>
	7.4	6.0	5.5	0.8	3.2	4.7	<b>5.6</b>
	0.8	0.7	0.7	0.7	0.6	0.7	<b>0.7</b>
	61.6	59.8	60.1	60.6	37.1	38.9	<b>38.6</b>
	24.1	29.7	30.4	219.5	49.1	32.6	<b>27.4</b>
	33.3	56.6	67.2	577.3	91.1	48.6	<b>51.7</b>
	¥ 39,528	¥ 30,819	¥ 44,694	¥ 47,568	¥ 39,555	¥ 40,840	<b>¥ 56,308</b>
	29,031	31,720	30,044	29,002	25,830	26,948	<b>30,835</b>
	16,806	18,843	20,749	21,295	19,540	20,741	<b>21,878</b>
	11,556	12,309	12,319	11,606	11,142	11,104	<b>11,207</b>

## Consolidated Balance Sheets

Daicel Corporation and Consolidated Subsidiaries  
March 31, 2023 and 2022

	Millions of Yen		Thousands of U.S. Dollars (Note 1)
	FY2022/3	FY2023/3	FY2023/3
<b>ASSETS</b>			
<b>CURRENT ASSETS:</b>			
Cash and cash equivalents (Note 19)	¥ 87,986	¥ 93,493	\$ 697,708
Securities (Notes 5 and 19)	2,398		
Receivables (Note 19):			
Trade notes	4,544	4,602	34,343
Trade accounts	97,234	96,639	721,186
Unconsolidated subsidiaries and associated companies	5,132	4,847	36,171
Allowance for doubtful accounts	(32)	(66)	(492)
Inventories (Note 6)	142,002	177,169	1,322,156
Other current assets	20,980	29,941	223,440
Total current assets	360,247	406,627	3,034,529
<b>PROPERTY, PLANT AND EQUIPMENT (Notes 7 and 22):</b>			
Land	31,660	35,639	265,962
Buildings and structures	176,710	181,794	1,356,671
Machinery and equipment	605,545	624,671	4,661,723
Construction in progress	60,279	75,803	565,694
Total	874,195	917,909	6,850,050
Accumulated depreciation	(644,352)	(661,778)	(4,938,641)
Net property, plant and equipment	229,843	256,130	1,911,417
<b>INVESTMENTS AND OTHER ASSETS:</b>			
Investment securities (Notes 5 and 19)	68,951	61,527	459,156
Investments in and advances to unconsolidated subsidiaries and associated companies (Note 19)	13,960	15,796	117,880
Deferred tax assets (Note 13)	2,474	2,425	18,097
Retirement benefit asset (Note 10)	8,686	7,648	57,074
Other assets	14,672	15,449	115,291
Total investments and other assets	108,745	102,848	767,522
<b>TOTAL</b>	¥ 698,836	¥ 765,606	\$ 5,713,477

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	Millions of Yen		Thousands of U.S. Dollars (Note 1)
	FY2022/3	FY2023/3	FY2023/3
<b>LIABILITIES AND EQUITY</b>			
<b>CURRENT LIABILITIES:</b>			
Short-term bank borrowings (Notes 8 and 19)	¥ 22,198	¥ 66,267	\$ 494,529
Current portion of long-term borrowings (Notes 8, 9, 19 and 21)	22,275	42,742	318,970
Payables (Notes 19 and 21):			
Trade notes	248	25	186
Trade accounts	60,475	56,111	418,738
Nontrade accounts	12,841	11,413	85,171
Construction	5,021	8,275	61,753
Unconsolidated subsidiaries and associated companies	1,464	1,215	9,067
Provision for environmental measures	14	-	-
Income taxes payable (Notes 13 and 19)	5,529	5,343	39,873
Other current liabilities	23,829	29,460	219,850
Total current liabilities	153,898	220,856	1,648,179
<b>LONG-TERM LIABILITIES:</b>			
Long-term borrowings (Notes 8, 9, 19 and 21)	236,029	208,823	1,558,380
Retirement benefit liability (Note 10)	6,713	4,807	35,873
Provision for environmental measures	125	122	910
Asset retirement obligations (Note 11)	1,255	1,170	8,731
Deferred tax liabilities (Note 13)	16,311	14,394	107,417
Other long-term liabilities	4,959	4,995	37,276
Total long-term liabilities	265,394	234,314	1,748,611
<b>COMMITMENTS AND CONTINGENT LIABILITIES (Notes 18, 20 and 24)</b>			
<b>EQUITY (Notes 12 and 27):</b>			
Share capital			
Common stock, authorized, 1,450,000,000 shares in 2023 and 2022; issued, 302,942,682 shares in 2023 and 2022	36,275	36,275	270,708
Capital surplus	14	132	985
Retained earnings	174,500	204,529	1,526,335
Treasury shares			
Treasury stock - at cost, 17,307,785 shares in 2023 and 7,234,296 shares in 2022	(6,090)	(15,716)	(117,283)
Accumulated other comprehensive income:			
Valuation difference on available-for-sale securities	36,813	32,906	245,567
Deferred gains or losses on hedges	27	43	320
Foreign currency translation adjustments	25,966	33,519	250,141
Remeasurements of defined benefit plans	4,509	3,519	26,261
Total	67,317	69,988	522,298
Non-controlling interests	7,526	15,225	113,619
Total equity	279,544	310,435	2,316,679
<b>TOTAL</b>	¥ 698,836	¥ 765,606	\$ 5,713,477

## Consolidated Statements of Income

Daicel Corporation and Consolidated Subsidiaries  
Years Ended March 31, 2023 and 2022

	Millions of Yen		Thousands of U.S. Dollars (Note 1)
	FY2022/3	FY2023/3	FY2023/3
<b>NET SALES (Note 14)</b>	¥ 467,937	¥ 538,026	\$ 4,015,119
<b>COST OF SALES (Notes 15 and 21)</b>	329,329	392,214	2,926,970
Gross profit	138,607	145,811	1,088,141
<b>SELLING, GENERAL AND ADMINISTRATIVE EXPENSES (Notes 15 and 16)</b>	87,910	98,303	733,604
Operating profit	50,697	47,508	354,537
<b>OTHER INCOME (EXPENSES):</b>			
Interest and dividend income	2,907	3,975	29,664
Gain on sales of investment securities	1,664	4,208	31,402
Subsidies from municipal governments (Note 22)		513	3,828
Gain on sales of investments in capital of subsidiaries and associates		722	5,388
Share of profit of entities accounted for using equity method	1,950	2,335	17,425
Interest expense (Note 21)	(1,361)	(1,432)	(10,686)
Foreign exchange gain (loss)	1,685	(201)	(1,500)
Loss on retirement of non-current assets	(2,901)	(1,524)	(11,373)
Impairment loss (Note 23)	(9,985)		
Loss on liquidation of business		(548)	(4,089)
Reduction of cost of property, plant and equipment (Note 22)		(513)	(3,828)
Other – net	1,624	(75)	(559)
Other income (expenses) – net	(4,414)	7,458	55,656
<b>PROFIT BEFORE INCOME TAXES</b>	46,283	54,967	410,201
<b>INCOME TAXES (Note 13):</b>			
Current	12,630	13,055	97,425
Deferred	1,598	270	2,014
Total income taxes	14,229	13,326	99,447
<b>NET PROFIT</b>	32,053	41,641	310,753
<b>NET PROFIT ATTRIBUTABLE TO NON-CONTROLLING INTERESTS</b>	799	958	7,149
<b>NET PROFIT ATTRIBUTABLE TO OWNERS OF THE PARENT</b>	¥ 31,254	¥ 40,682	\$ 303,597

	Yen		U.S. Dollars (Note 1)
	FY2022/3	FY2023/3	FY2023/3
<b>PER SHARE INFORMATION (Notes 2.t and 17):</b>			
Basic net profit	¥ 104.14	¥ 138.87	\$ 1.03
Cash dividends applicable to the year	32.00	36.00	0.26

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## Consolidated Statements of Comprehensive Income

Daicel Corporation and Consolidated Subsidiaries  
Years Ended March 31, 2023 and 2022

	Millions of Yen		Thousands of U.S. Dollars (Note 1)
	FY2022/3	FY2023/3	FY2023/3
<b>NET PROFIT</b>	¥ 32,053	¥ 41,641	\$ 310,753
<b>OTHER COMPREHENSIVE INCOME (LOSS) (Note 25):</b>			
Valuation difference on available-for-sale securities	(71)	(3,910)	(29,179)
Deferred gains or losses on hedges	55	15	111
Foreign currency translation adjustments	16,916	7,579	56,559
Remeasurements of defined benefit plans	(92)	(942)	(7,029)
Share of other comprehensive income (loss) of entities accounted for using equity method	1,039	89	664
Total other comprehensive income (loss)	17,847	2,831	21,126
<b>COMPREHENSIVE INCOME</b>	¥ 49,901	¥ 44,473	\$ 331,888
<b>TOTAL COMPREHENSIVE INCOME ATTRIBUTABLE TO:</b>			
Owners of the parent	¥ 48,364	¥ 43,353	\$ 323,529
Non-controlling interests	1,536	1,119	8,350

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## Consolidated Statements of Changes in Equity

Daicel Corporation and Consolidated Subsidiaries  
Years Ended March 31, 2023 and 2022

	Millions of Yen											
	Number of Shares of Common Stock Outstanding	Common Stock	Capital Surplus	Retained Earnings	Treasury Stock	Accumulated Other Comprehensive Income				Total	Non-controlling Interests	Total Equity
Valuation Difference on Available-for-sale Securities						Deferred Gains or Losses on Hedges	Foreign Currency Translation Adjustments	Remeasurements of Defined Benefit Plans				
BALANCE, APRIL 1, 2021	301,333,049	¥ 36,275		¥ 152,816	¥ (1,446)	¥ 36,884	¥ (27)	¥ 8,689	¥ 4,660	¥ 237,852	¥ 7,148	¥ 245,000
ACCUMULATED EFFECT OF CHANGE IN ACCOUNTING PRINCIPLES				(26)						(26)		(26)
ADJUSTED BALANCE, MARCH 31, 2022	301,333,049	36,275		152,789	(1,446)	36,884	(27)	8,689	4,660	237,826	7,148	244,974
Net profit attributable to owners of the parent				31,254						31,254		31,254
Cash dividends, ¥32.00 per share				(9,648)						(9,648)		(9,648)
Restricted stock awards	377,191		14		338					353		353
Repurchase of treasury stock	(6,001,854)				(4,983)					(4,983)		(4,983)
Retirement of treasury stock												
Initial inclusion of certain subsidiaries in consolidation			0	104						104	(150)	(45)
Net change in the year						(70)	55	17,276	(151)	17,109	528	17,638
BALANCE, MARCH 31, 2022	295,708,386	36,275	14	174,500	(6,090)	36,813	27	25,966	4,509	272,017	7,526	279,544
Net profit attributable to owners of the parent				40,682						40,682		40,682
Cash dividends, ¥36.00 per share				(10,653)						(10,653)		(10,653)
Restricted stock awards	445,750		(8)		375					366		366
Repurchase of treasury stock	(10,519,274)				(10,000)					(10,000)		(10,000)
Disposal of treasury stock	35		0		0							
Change in ownership interest of parent due to transactions with non-controlling interests			126							126		126
Net change in the year						(3,907)	15	7,553	(990)	2,671	7,699	10,370
BALANCE, MARCH 31, 2023	285,634,897	¥ 36,275	¥ 132	¥ 204,529	¥ (15,716)	¥ 32,906	¥ 43	¥ 33,519	¥ 3,519	¥ 295,209	¥ 15,225	¥ 310,435

	Thousands of U.S. Dollars (Note 1)										
	Common Stock	Capital Surplus	Retained Earnings	Treasury Stock	Accumulated Other Comprehensive Income				Total	Non-controlling Interests	Total Equity
Valuation Difference on Available-for-sale Securities					Deferred Gains or Losses on Hedges	Foreign Currency Translation Adjustments	Remeasurements of Defined Benefit Plans				
BALANCE, MARCH 31, 2022	\$ 270,708	\$ 104	\$ 1,302,238	\$ (45,447)	\$ 274,723	\$ 201	\$ 193,776	\$ 33,649	\$ 2,029,977	\$ 56,164	\$ 2,086,149
Net profit attributable to owners of the parent			303,597						303,597		303,597
Cash dividends, \$0.26 per share			(79,500)						(79,500)		(79,500)
Restricted stock awards		(59)		2,798					2,731		2,731
Repurchase of treasury stock				(74,626)					(74,626)		(74,626)
Disposal of treasury stock		0							0		0
Change in ownership interest of parent due to transactions with non-controlling interests		940							940		940
Net change in the year					(29,156)	111	56,365	(7,388)	19,932	57,455	77,388
BALANCE, MARCH 31, 2023	\$ 270,708	\$ 985	\$ 1,526,335	\$ (117,283)	\$ 245,567	\$ 320	\$ 250,141	\$ 26,261	\$ 2,203,052	\$ 113,619	\$ 2,316,679

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## Consolidated Statements of Cash Flows

Daicel Corporation and Consolidated Subsidiaries  
Years Ended March 31, 2023 and 2022

	Millions of Yen		Thousands of U.S. Dollars (Note 1)
	FY2022/3	FY2023/3	FY2023/3
<b>OPERATING ACTIVITIES:</b>			
Profit before income taxes	¥ 46,283	¥ 54,967	\$ 410,201
Adjustments for:			
Income taxes paid	(13,558)	(14,425)	(107,649)
Income taxes refund	3,556	1,308	9,761
Depreciation	27,490	31,516	235,194
Impairment loss	9,985		
Amortization of goodwill	705	59	440
Loss on retirement of non-current assets	2,901	1,524	11,373
Increase (decrease) in provision for environmental measures	(56)	(16)	(119)
Loss (gain) on sales of investment securities	(1,664)	(4,208)	(31,402)
Loss (gain) on sales of investments in capital of subsidiaries and associates		(722)	(5,388)
Loss on liquidation of business		548	4,089
Share of loss (profit) of entities accounted for using equity method	(1,950)	(2,335)	(17,425)
Changes in assets and liabilities:			
Decrease (increase) in trade receivable	(3,429)	4,498	33,567
Decrease (increase) in inventories	(27,480)	(31,875)	(237,873)
Increase (decrease) in trade payable	7,924	(8,701)	(64,932)
Other – net	(7,712)	(5,291)	(39,485)
Net cash provided by operating activities	42,993	26,847	200,350
<b>INVESTING ACTIVITIES:</b>			
Net decrease (increase) in time deposits	(55)	(208)	(1,552)
Capital expenditures	(47,471)	(51,924)	(387,492)
Purchase of investment securities	(165)	(365)	(2,723)
Purchase of shares of subsidiaries and associates	(329)		
Proceeds from sales and redemption of investment securities	2,809	8,677	64,753
Proceeds from sales of property, plant and equipment	876	318	2,373
Proceeds from sales of investments in capital of subsidiaries and associates		1,125	8,395
Loan advances	(400)	(807)	(6,022)
Collection of finance receivables	84	445	3,320
Other – net	(1,875)	(1,353)	(10,097)
Net cash used in investing activities	(46,528)	(44,093)	(329,052)
<b>FINANCING ACTIVITIES:</b>			
Net increase (decrease) in short-term borrowings	14,696	43,411	323,962
Proceeds from long-term borrowings	1,704	15,074	112,492
Repayments of long-term borrowings	(5,037)	(23,110)	(172,462)
Proceeds from share issuance to non-controlling shareholders		7,200	53,731
Dividends paid	(9,645)	(10,651)	(79,485)
Dividends paid to non-controlling interests	(1,008)	(742)	(5,537)
Purchase of treasury shares	(4,983)	(10,000)	(74,626)
Payments from changes in ownership interests in subsidiaries that do not result in change in scope of consolidation	(150)		
Repayments of lease liabilities	(1,029)	(1,224)	(9,134)
Net cash used in financing activities	(5,452)	19,956	148,925
<b>EFFECT OF EXCHANGE RATE CHANGE ON CASH AND CASH EQUIVALENTS</b>	6,137	2,795	20,858
<b>NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS</b>	(2,850)	5,506	41,089
<b>CASH AND CASH EQUIVALENTS, BEGINNING OF YEAR</b>	90,747	87,986	656,611
<b>INCREASE IN CASH AND CASH EQUIVALENTS RESULTING FROM INCLUSION OF SUBSIDIARIES IN CONSOLIDATION</b>	89		
<b>CASH AND CASH EQUIVALENTS, END OF YEAR</b>	¥ 87,986	¥ 93,493	\$ 697,708

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# Corporate Information

## Company Data (as of March 31, 2023)

### Corporate Overview

Corporate Name:	Daicel Corporation
Establishment:	September 8, 1919
Capital:	¥36,275,440,089
Number of employees:	11,207 (Consolidated) 2,524 (Non-consolidated)

### Status of Stock

Common stock authorized:	1,450,000,000 shares
Issued:	302,942,682 shares
Listing:	Tokyo Stock Exchange Prime Market
Stock Code:	4202
Shareholder registry administrator:	Sumitomo Mitsui Trust Bank, Limited 1-4-1, Marunouchi, Chiyoda-ku, Tokyo, Japan
Number of shareholders:	27,414
Accounting auditor:	Deloitte Touche Tohmatsu LLC

### Principal Domestic Locations

#### Office

- Osaka Head Office**  
Grand Front Osaka Tower-B, 3-1, Ofuka-cho, Kita-ku, Osaka 530-0011  
Tel: +81-6-7639-7171 Fax: +81-6-7639-7181
- Tokyo Head Office**  
JR Shinagawa East Bldg., 2-18-1, Konan, Minato-ku, Tokyo 108-8230  
Tel: +81-3-6711-8111 Fax: +81-3-6711-8100
- Nagoya Sales Office**  
JP Tower Nagoya, 1-1-1, Meieki, Nakamura-ku, Nagoya, Aichi 450-6325  
Tel: +81-52-582-8511 Fax: +81-52-582-7943

#### Training Center

- Operation Training Center (TRC)**  
14-1, Kouto 3-chome, Kamigori-cho, Akou-gun, Hyogo 678-1205

#### Innovation Park

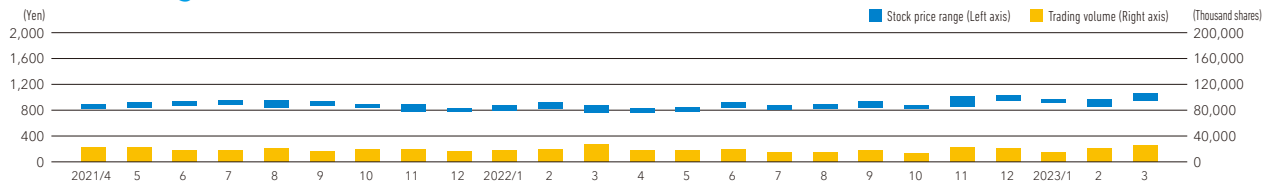
1239, Shinzaikae, Aboshi-ku, Himeji-shi, Hyogo 671-1283

#### Plant

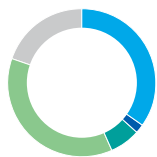
- Himeji Production Sector/Aboshi Plant** 1239, Shinzaikae, Aboshi-ku, Himeji-shi, Hyogo 671-1281
- Himeji Production Sector/Hirohata Plant** 12, Fuji-cho, Hirohata-ku, Himeji-shi, Hyogo 671-1123
- Harima Plant** 805, Umaba, Ibogawa-cho, Tatsuno-shi, Hyogo 671-1681
- Arai Plant** 1-1, Shinko-cho, Myoko-shi, Niigata 944-8550
- Ohtake Plant** 1-4, Higashisakae 2-chome, Otake-shi, Hiroshima 739-0695
- Kanzaki Plant** 12-1, Kanzaki-cho, Amagasaki-shi, Hyogo 661-0964

## Stock Information

### Stock Price Range



### Shareholder Composition (As of March 31, 2023)



	Thousand shares	%
Financial institutions	105,870	34.95
Securities companies	5,433	1.79
Other domestic corporations	20,613	6.80
Foreign investors	111,713	36.88
Individual & other investors	59,312	19.58

### Top 10 Shareholders (As of March 31, 2023)

	Number of shares (Thousand shares)	Shareholding ratio (%)
The Master Trust Bank of Japan, Ltd. (Trust Account)	45,692	15.99
NORTHERN TRUST CO. (AVFC) RE SILCHESTER INTERNATIONAL INVESTORS INTERNATIONAL VALUE EQUITY TRUST	21,256	7.44
Nippon Life Insurance Company	17,402	6.09
Custody Bank of Japan, Ltd. (Trust Account)	16,088	5.63
NORTHERN TRUST CO. (AVFC) RE U.S. TAX EXEMPTED PENSION FUNDS	9,580	3.35
FUJIFILM Holdings Corporation	8,390	2.93
NORTHERN TRUST CO. (AVFC) RE NON TREATY CLIENTS ACCOUNT	7,439	2.60
Sumitomo Mitsui Banking Corporation	7,096	2.48
Daicel Group Employee Shareholding Association	5,972	2.09
Daicel Shareholding Ownership Association	5,965	2.08

Each rate of shareholding was calculated after deducting the number of treasury shares from the number of shares outstanding

### Rating for Our ESG Initiatives (As of August, 2023)



\* FTSE Russell (the trading name of FTSE International Limited and Frank Russell Company) confirms that Daicel Corporation has been independently assessed according to the FTSE4Good criteria, and has satisfied the requirements to become a constituent of the FTSE4Good Index Series. Created by the global index provider FTSE Russell, the FTSE4Good Index Series is designed to measure the performance of companies demonstrating strong Environmental, Social and Governance (ESG) practices. The FTSE4Good Index Series is used by a wide variety of market participants to create and assess responsible investment funds and other products.

\* FTSE Russell (the trading name of FTSE International Limited and Frank Russell Company) confirms that Daicel Corporation has been independently assessed according to the FTSE Blossom Japan Index criteria, and has satisfied the requirements to become a constituent of the FTSE Blossom Japan Index Series. Created by the global index provider FTSE Russell, the FTSE Blossom Japan Index Series is designed to measure the performance of Japanese companies demonstrating strong Environmental, Social and Governance (ESG) practices. The FTSE Blossom Japan Index is used by a wide variety of market participants to create and assess responsible investment funds and other products.

\* FTSE Russell (the trading name of FTSE International Limited and Frank Russell Company) confirms that Daicel Corporation has been independently assessed according to the FTSE Blossom Japan Sector Relative Index criteria, and has satisfied the requirements to become a constituent of the FTSE Blossom Japan Sector Relative Index Series. The FTSE Blossom Japan Sector Relative Index is used by a wide variety of market participants to create and assess responsible investment funds and other products.

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## Independent Third-Party Assurance Report



### Independent Assurance Statement

October 28, 2022

Mr. Yoshimi Ogawa  
President and CEO  
Daicel Corporation

#### 1. Purpose

We, Sustainability Accounting Co., Ltd., have been engaged by Daicel Corporation (hereinafter "the Company") to provide limited assurance on greenhouse gas (GHG) emissions of the Company in FY2022/3, which are 1,567 thousand t-CO<sub>2e</sub> (Scope1), 42 thousand t-CO<sub>2e</sub> (Scope2 Market-Based) and 1,335 thousand t-CO<sub>2</sub> (Scope3 Categories 1,2,3,4,5,6 and 7). The purpose of this process is to express our conclusion on whether the GHG emissions were calculated in accordance with the Company's standards. The Company's management is responsible for calculating the GHG emissions. Our responsibility is to independently carry out a limited assurance engagement and to express our assurance conclusion.

#### 2. Procedures Performed

We conducted our assurance engagement in accordance with International Standard on Assurance Engagement 3000 (ISAE 3000) and 3410 (ISAE3410). The key procedures we carried out included:

- Interviewing the Company's responsible personnel to understand the Company's standards
- Reviewing the Company's standards
- Performing cross-checks on a sample basis and performing a recalculation to determine whether the GHG emissions were calculated in accordance with the Company's standards.

#### 3. Conclusion

Based on the procedures performed, nothing has come to our attention that causes us to believe that the GHG emissions have not been calculated in all material respects in accordance with the Company's standards.

We have no conflict of interest relationships with the Company.

Takashi Fukushima  
Representative Director  
Sustainability Accounting Co., Ltd.

(Note) Greenhouse gas emissions data for FY2023/3 is scheduled for third-party assurance during FY2024/3.

## Thoughts on the Cover

The Daicel Group has been contributing to transforming the society from one that consumes large amounts of fossil resources to a sustainable one that recycles renewable resources.

Armed with the pride of being a pioneer in biomass chemistry and its unique and innovative technology, the Daicel Group is all set to create an industrial ecosystem, which focuses on forests and strikes a harmonious balance between nature and industry, through effective utilization of wood, that is a renewable resource. We transform the familiar resource of wood into raw materials and products with various functions, in an earth-friendly and people-friendly manner. After use, these products return to nature and nurture the next generation of trees.

The illustration on the cover expresses the Daicel Group's desire to utilize the power of chemistry to bring out the potential of forest resources and grow together with partners that share our aspirations to seek happiness for society and people.



## Daicel Corporation

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Published August 2023

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(Trademark Attribution)

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  - One Time Energy® is a registered trademark of Daicel Corporation in Japan and other countries.
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The text in this report uses easy-to-see characters based on the concept of Universal Design (UD).

